

**WAR AT ANY COST? THE TOTAL ECONOMIC
COSTS OF THE WAR BEYOND THE FEDERAL
BUDGET**

HEARING

BEFORE THE

**JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES**

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

—————
FEBRUARY 28, 2008
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WAR AT ANY COST? THE TOTAL ECONOMIC COSTS OF THE WAR BEYOND THE FEDERAL BUDGET

THURSDAY, FEBRUARY 28, 2008

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, DC.

The Committee met at 9:30 a.m. in room SH-106 of the Hart Senate Office Building, The Honorable Charles E. Schumer (Chairman) presiding.

Senators present. Schumer, Klobuchar, and Brownback.

Representatives present. Maloney, Sanchez, Doggett, Hinchey, Cummings, Saxton, and Paul.

Staff present: Christina Baumgardner, Stephanie Dreyer, Anna Fodor, Chris Frenze, Tamara Fucile, Nan Gibson, Rachel Greszler, Colleen Healy, Aaron Kabaker, Tim Kane, Israel Klein, Tyler Kurtz, Brian Larkin, Michael Laskawy, Dan Miller, Robert O'Quinn, Jeff Schlagenhauf, Marcus Stanley, Robert Weingart, Jeff Wrase, and Adam Yoffie.

OPENING STATEMENT OF THE HONORABLE CHARLES E. SCHUMER, CHAIRMAN, A U.S. SENATOR FROM NEW YORK

Chairman Schumer. Good morning, everybody. I'd like to thank all of you for coming to our Joint Economic Committee hearing today on the costs of the war in Iraq.

This is a contentious topic, and so I'm going to ask our audience, of course, to be respectful of the witnesses, their opinions, and the Committee, as we proceed.

We have a very distinguished panel, including Professor Joseph Stiglitz, the Nobel Laureate economist now at Columbia; Robert Hormats, a National Security Council Advisor under both Democratic and Republican Presidents, and now co-chairman of Goldman Sachs; Rand Beers, the president of the National Security Network and former NSC Advisor, who has written so many astute things on national security, and Scott Wallsten, an economist and formerly of the American Enterprise Institute.

I'd like to take a few moments to talk about the war, its costs, and what I believe is a turning point in our arguments against the war, for those of us who are against it.

Then I'll recognize our Members for opening statements, and formally introduce the panel.

Now, the case against the war in Iraq has been building for a long time. Too many young American men and women have given

their lives or suffered terrible, life-altering injuries, with little to show for their sacrifice.

The American people are baffled by the lack of political progress, despite the good works of our troops, and now Americans are trying to comprehend the eye-popping dollar figures that this war is costing our budget and our economy.

It's becoming clear to all Americans—Republicans, Democrats, and Independents—that by continuing to spend huge amounts in Iraq, we're prevented from spending on important goals and vital needs here at home.

So, the turning point is this: The lack of progress, particularly on the political front, continues; the tragic loss of life continues, but the cost of the war and the inability to use those funds to help us here at home and to properly go after the real nexus of terror, which is to the East in Pakistan, Iran, and Afghanistan, has become the clinching argument that we must quickly and soon change the course of this war in Iraq.

I went to Iraq over New Years and spent time with our soldiers. I can tell you, they're wonderful. They're awe-inspiring.

But I can also tell you from my trip to Iraq, at least my estimate—and I don't think this is different than many others—that if everything worked out well and we followed General Petraeus's general playbook, which I think is a good one, it would take us 5 years to gain maybe a 50-percent chance of bringing stability to Iraq—not democracy. I think democracy is a forlorn hope at this point. It's maybe a little bit of western arrogance to think we can impose an American style democracy on a country like Iraq—but just stability.

Now, I would ask anybody here in this audience, of any ideological stripe, is that your number one goal for the country? Is it number two? Is it number three? Where does it rank with improving healthcare, improving our education system, gaining an energy policy that's important.

And where does it rank with foreign policy goals such as dealing with the triad, the nexus of terror, over at the Afghanistan, Pakistan, and Iranian theater? I don't think very many Americans would rank it such a high priority, and yet, in terms of the amount of money we are spending there, as well as our focus, our energy, it is number one or number two or number three in occupying America.

And so we have to put this in perspective. The cost of the war has become the \$800 billion gorilla in the room. The backbreaking costs of this war to American families, the Federal budget, and the entire economy, are beyond measure in many ways, and it's becoming the first thing after the loss of life that people think about and talk about.

Let me just give you some numbers: For the amount of money the Bush administration wants to spend per day in Iraq—that's \$430 million—we could: Enroll an additional 58,000 children in Head Start for a whole year; put about 9,000 police officers on the streets per year; provide health insurance for 329,000 low-income children through CHIP per year; hire 10,700 Border Patrol agents per year. This is Iraq for one day, and these equivalents are on a yearly basis.

We could make college more affordable for 163,000 students per year; help 260,000 American families keep their homes, with foreclosure prevention counselling this year.

In the Fiscal 2008 budget, we put \$159 billion into Iraq, double the amount we did for our entire transportation budget—roads, bridges—6 times as much as what we put into the National Institutes of Health to discover cures for diseases like cancer and diabetes; 7 times what we spend on helping young Americans get a college education; and 30 times as much as we do to ensure the health—what it would cost to ensure the health of every single child.

So, the costs are mountainous. As this world changes, technology is changing our world and America has to adapt to it. We're not; instead, we're taking so many of our resources and just putting them into Iraq.

Again for what end? At best, stability in a small part of the world, when there is so much instability in more dangerous places, at least to the United States, elsewhere.

I've read the testimony from the witnesses, and particularly from Professor Stiglitz. We're grateful to him here. His book's title speaks for itself: *The Three Trillion Dollar War*.

I was dismayed to learn that Professor Stiglitz had trouble getting information from the Government about what this war is costing us, from the Pentagon and the Veterans Administration.

And I was also tremendously disappointed to read in the paper today that the White House has already disparaged Professor Stiglitz and the work he has done. It's the height of hypocrisy for an Administration that has been so secretive and so unwilling to face the truth and the true costs of their policies in this war, to disparage the courage and conviction of someone like Professor Stiglitz.

So I plan to ask Senator Levin, who chairs the Armed Services Committee, to work with me to make sure the Administration is more transparent and forthcoming about the billions in taxpayer money we are spending, going forward.

Professor Stiglitz estimates that, conservatively, this war could cost \$3 trillion for budget costs, alone. That is a trillion, with a T. These estimates make our JEC estimates, which knocked people's socks off when we did them a couple of months ago, seem small.* His higher estimates of the total economic costs, dwarf all other estimates, at up to \$5 trillion.

So, for this reason and others, we desperately need a change of course in Iraq. We can't continue to police a civil war built on age-old enmities of the various factions in Iraq; we can't afford the costs, which are increasing exponentially, according to expert economists; and we can't allow this skyrocketing spending in Iraq to displace just about every other domestic and foreign policy priority.

If you look at the President's budget this year, everything is slashed dramatically, even Medicare and Medicaid, the lifeblood of healthcare systems, all to make room for the war in Iraq.

*The Joint Economic Committee Report, "War at Any Price? The Total Economic Costs of the War Beyond the Federal Budget," updated Feb. 2008, appears in the Submissions for the Record on page 253.

History will look up this Iraq war in two ways: I believe it will certainly admire the bravery of our soldiers, from the armies to the generals; it will acknowledge that going through the Iraq process, General Petraeus's rewriting of the Army Manual, will allow us to more effectively fight the next war.

But, at the same time, history will be amazed at the mistakes made by this Administration in starting this war and continuing this war for far too long.

[The prepared statement of the Senator Schumer appears in the Submissions for the Record on page 54.]

Chairman Schumer. With that, let me call on my colleague, Vice Chair Maloney—oh, no, sorry. I always get this wrong.

[Laughter.]

Chairman Schumer. Ranking Member Saxton.

**OPENING STATEMENT OF THE HONORABLE JIM SAXTON,
RANKING MINORITY, A U.S. REPRESENTATIVE FROM NEW
JERSEY**

Representative Saxton. Thank you, Mr. Chairman. I appreciate the opportunity to be here with you this morning, and I would just say at the outset, that I'd like to welcome our witnesses. I thank them all for being here.

Mr. Chairman, there are different views on the situation in Iraq. You and I have had a different view, historically, on this subject, for quite some time, and I listened carefully to your opening statement, and nothing has changed.

So—

Chairman Schumer. Except all the additional money we're spending and additional lives we're losing.

Representative Saxton. This is my time, and I'll reclaim it, thank you.

The Iraq war obviously has many dimensions, including foreign policy, defense policy, and policy related to terrorism.

While debate about past policy in Iraq will continue, the most important question facing policymakers, is this: What should U.S. policy in Iraq be today and in the future?

Since the implementation of the surge strategy in Iraq, the military situation has improved dramatically, as noted by a variety of independent experts from the Brookings Institute, as well as the American Enterprise Institute, and publications such as the Washington Post.

In fact, a recent Washington Post editorial urged critics of the war to take the success of the surge into account in setting future policy.

And in this week's National Review, an article entitled "Re-Liberators," the author writes the following:

Iraq is a mind-bogglingly complex country that defies generalizations, except for one. Where U.S. troops have a substantial presence, there is more security, more grass roots political activity, and more economic progress. Hence, the success of the surge and the imperative not to draw down too quickly, is immensely important.

The leader of the small village where this author was writing, said this: "We are very serious, we are going to go all the way to the end of the path, and we don't want you Americans to leave."

After a year, that view of the surge is not uncommon. However, another attempt to force a hasty retreat from Iraq is now underway, following the many failures to do the same thing earlier in this Congress.

Now that the surge is proving successful, a quick exit from Iraq would be especially costly. The virtually immediate withdrawal advocated by some politicians, is not militarily feasible, and even a premature withdrawal could produce immense costs, both in human terms, as well as in economic terms.

For example, if the United States withdrew quickly, the biggest winners would include terrorists and the Iranian regime, which is designated as a state sponsor of terrorism. Iranian influence would further spread to Iraq, potentially expanding Iranian military influence in the Persian Gulf, including the Straits of Hormuz, and leading to Iranian control of significant Iraqi oil resources.

Iran has already threatened to cutoff western oil supplies, and in such a situation, would be well positioned to act on such a threat.

Consider also that the scenario of a rapid U.S. pullout could lead to a civil war in Iraq, drawing in surrounding nations and leading to a regional conflagration.

Unfortunately, this is not a remote possibility, but something that must be considered. The economic, military, and human costs of this outcome to the United States and its allies, would be enormous.

All wars impose costs in terms of life and treasure, and the Iraq war is no exception. These costs must be considered as the U.S. weighs its options in Iraq. In determining future policy, we have to consider whether the situation in Iraq is improving significantly, as well as to consider the cost and benefits of our various other policy options.

As economic costs and benefits are considered, it is important to recognize that estimates will range widely, because they are, necessarily, based on questionable data. A variety of assumptions and speculation about the events is also included in most analyses. As Dr. Wallsten has warned, the data are not of high quality and, further, each calculation requires several assumptions.

He also has pointed out that even meticulous cost estimates contain a great deal of error, and thus such analysis, quote, "cannot determine whether the benefits of war exceed the costs."

I would note that it is important—the important elements of Dr. Wallsten's work are also incorporated in Dr. Stiglitz's research, which shares the same limitations.

In their 2005 paper, Dr. Wallsten and a co-author, acknowledged the inherent "imprecision," of the cost estimates, but they provided a significant analytical framework for the policy debate.

It is important to repeat their warnings regarding this inherent imprecision which makes it impossible to determine the relative costs and benefits of the Iraq war.

In closing, I would just note this: Last week, the Washington Post covered the new attack advertising on the Iraq war, sponsored by the Democratic Senatorial Campaign Committee. I would like to think that the timing of this ad campaign, this hearing, and the Iraq pullout vote this week, is a remarkable coincidence, but I'm sorry I can't draw that conclusion.

[The prepared statement of Representative Saxton appears in the Submissions for the Record on page 56.]

Chairman Schumer. Vice Chair Maloney.

OPENING STATEMENT OF THE HONORABLE CAROLYN B. MALONEY, VICE CHAIR, A U.S. REPRESENTATIVE FROM NEW YORK

Vice Chair Maloney. Good morning. I thank my colleague and friend, Chuck Schumer, for holding this hearing to examine the economic cost of the Iraq war, and I want to welcome our distinguished guests, many of whom have served in Government, and thank them for their service and for their testimony here today.

Over the past 5 years, the President has requested some \$665 billion from Congress to fund the war in Iraq.

The more than \$180 billion that the President wants the Government to spend on Iraq just this year, including interest on war debt, totals almost half a billion dollars a day.

But the untold story, one every American needs to hear, is that the costs of this war go well beyond these budget numbers. At my request last year, the Joint Economic Committee prepared a report showing that if the President's 2008 funding request is approved, the full economic cost of the war will total \$1.3 trillion—just by the end of this year.

This figure includes the hidden costs of deficit financing, the future care of our wounded Veterans, and disruption in our oil markets. And if the war continues, the costs will only mount higher.

In his new book, Dr. Stiglitz estimates that the total economic price tag for the war could reach \$3 trillion to \$5 trillion over the next decade, if we remain in Iraq.

The numbers may feel abstract, but the costs are real.

The burden of the war debt handed down to our children is real. It's been called the Iraq 100-year mortgage.

The lost opportunities to invest here at home in jobs—green technologies, roads, bridges, healthcare, and education—are real. And the nearly 4,000 lives, almost 200 from New York State alone are real.

We are all paying for the colossal costs of this war, one way or another.

Last year alone, the President asked Congress to spend more on the Iraq war than the \$130 billion our Nation spends annually on the entire American road and highway system. At a time when our levies and bridges are crumbling, as we saw during Katrina, we cannot afford to stop investing in our infrastructure.

And the President has been squabbling with Congress about money for children's healthcare when about 3-months' worth of Iraq war spending would have covered the entire 5-year S-CHIP, Children's Health Insurance Program funding increase he vetoed last year.

The Administration is reportedly negotiating for an indefinite U.S. troop presence in Iraq. We know we cannot continue the continued loss of life. The economic costs have also become unbearable.

The JEC report has estimated that the difference between staying the course with our current troop commitment in Iraq, versus a more rapid drawdown favored by many Congressional Democrats,

is about \$1.8 trillion in additional economic costs over the next decade.

That is above and beyond what we've already spent on the war, and it's money that will continue to be diverted from important national priorities.

A productive debate over the long-term economic impact of the war and its cost to future generations is long overdue. It's no surprise, however, that this is a debate that the Bush administration would rather hide from.

OMB Director Nussle took issue with our JEC report last year. Chairman Schumer and I wrote to invite him to appear before this Committee to present the Administration's estimates of what the full economic cost of the Iraq war have been so far and will be going forward. Not surprisingly, Director Nussle has not responded to our open invitation.

I want to call on the Administration to produce their own estimates, as we and many of our witnesses have done, and appear before this Committee to have a productive dialog about this critical issue facing our Nation.

Again, Mr. Chairman, I thank you for your hard work on this and so many other issues.

[The prepared statement of Representative Maloney appears in the Submissions for the Record on page 57.]

Chairman Schumer. Thank you, Vice Chair Maloney. We're going to have opening statements for any Member who wishes to make one, just being careful of the time.

So, the next person in the order of people who came in is Representative Paul. Welcome back.

**OPENING STATEMENT OF THE HONORABLE RON PAUL, A U.S.
REPRESENTATIVE FROM TEXAS**

Representative Paul. Thank you, Mr. Chairman. I appreciate you holding these very important hearings, and appreciate the panel appearing today. I realize that the issue here is the cost of war, but it's hard for some of us to think about the war without thinking about policy, as well.

And this is something I've put a little bit of thought into and think it's a very serious problem. Nations, when they go to war, generally, especially with our country, people resist it.

The large majority don't want to go to war. They have to be convinced of it, so then there has to be threat buildup and say, well, we will be threatened, and the people join in and they are willing to go along with the war.

But the war doesn't end easily and quickly, and if it's prolonged, people turn against the war, and that's where we are today, just as we were in the 1960s, because what they realize is, it's very costly in terms of lost lives and serious injuries, but then there is the cost of paying for the war.

We've gone through that cycle, and something has to give. Some of us who have argued strongly against going in there in the first place really will win this argument, that we will have to leave no matter what the strength of the opposition is on the argument, because we won't be able to afford it.

And this is what we're coming to, because our ability to afford the war will be measured in terms of the value of our currency, and that is, obviously, going down.

But Randolph Bourne, during World War I, wrote a paper and he called it "War Is the Health of the State", and this is one reason why I have been alerted early on to be very cautious about going to war, because I don't like a big state, because if you have an omnipotent state, you undermine personal liberties, and that, of course, should be our greatest concern in a free country, protecting personal liberties.

But also, there are some myths, I think, economic myths associated with war, because you hear too often that war is good for the economy. And we certainly heard that. This came out of getting out of the Depression.

I don't happen to believe that the war ended the Depression. People didn't feel good until after the war was over.

I remember rationing and a lot of other things, so war does not end—it's not healthy for the economy. I think it's very damaging to the economy because we always have to pay for it.

And there was a study made not too long ago, and the result of the study showed that all wars lead to inflation.

I mean, this was the claim, and whether he's absolutely right or not, I don't know, but generally speaking, if you think of our history, even from the Revolutionary War on, we've had inflation, which means the people are never required to pay for the war.

Maybe if they were required to pay for the war there wouldn't be so many wars. Direct taxation to pay for a war would end it rather quickly because we couldn't afford it, but if we can pass it off to the next generation, we seem to be able to get away with it.

So we tax as much as we can, and then we borrow as much as we can, and then we still don't have enough money to run the war, so we resort to the true source of the high cost of living, and that is the inflation of the monetary system.

And it's been notorious, back to Roman times. Then they ran out of productive capacity to fight the wars, they clipped their coins and diluted the metals.

Now, it's more sophisticated. We just create credit and print the money and we pay these bills. Then who gets stuck with the bills? It's the middle class and the poor, because they get hit with the high cost of living.

This is where we are today. Unfortunately, the tragedy with the middle class today, is being recognized, but the blame isn't being put on the right spot, because they'll say, well, if we just redistribute more money, we're going to help the poor. I don't see that as an answer.

But paying for a war, of course, is very important. In the 1970s, we had to pay a high price for guns—and butter in the 1960s—and we nearly had a collapse of the dollar in 1979 and 1980, and we're facing that same situation once again, although I think it's much worse because I think we're not nearly the productive Nation that we used to be, and I think our international debt and our domestic debt and national debt is so unbelievable that we have to quickly come to our senses.

We have to take recognition that Osama Bin Laden has been quoted as saying that he doesn't mind us being over there one bit, because he believes he can financially drain us. This is frightening to me, that we have fallen into a trap, and I am scared to death that we will financially drain ourselves and end up in a really tough situation of not only loss of our financial well being here, but the undermining of our liberties. I yield back.

[The prepared statement of Representative Paul appears in the Submissions for the Record on page 58.]

Chairman Schumer. Thank you, and thank you for respecting the time limits.

Representative Sanchez.

OPENING STATEMENT OF THE HONORABLE LORETTA SANCHEZ, A U.S. REPRESENTATIVE FROM CALIFORNIA

Representative Sanchez. Thank you, Mr. Chairman Schumer. I really appreciate you having this hearing.

I think that it's an incredibly good time to talk about the real costs of this war. I mean, I've been talking about it for the whole time, but I think a lot of Americans really don't understand what it is costing us to be in Iraq.

And as a majority of Americans now realize, it probably wasn't a good idea to go into Iraq the way we went into Iraq, without enough allies, without people paying a fair share, if we're supposed to be the top cops around the world, or supposed to put in democracy someplace.

And, unfortunately, the cost is in the lives of our people over there; the cost is in the opportunity costs of not being able to spend that money here on the domestic front, to improve the lives of our people; the cost is in the way the world views us and how that sets us up for other conflicts, an inability to diplomatically settle differences among other countries, or with us, so I think there's a lot of cost to this war going on.

I would also say that I didn't vote for this war, I didn't vote to go into this war. It costs us \$3 billion a week to be in Iraq, and that's pretty much the operating costs of that war.

It doesn't take into account—and I sit on the Armed Services Committee—it doesn't take into account, that we're stressing our military, in particular, our Army and Marines, to a point where people don't want to be in those Services.

It costs us more to recruit people to get into those Services. Families of our military are being affected.

All of the costs of planes and automobiles and tanks and sitting in that fine dust in the desert, none of that has been accounted for and what it will take to replace that.

And, you know, few—about 6 months ago, we held some top secret hearings within the Armed Services arena, about what it would take to bring back the readiness of our military, and I can't speak too much about that, except that some of it was leaked to the New York Times, so it appeared in print, so I can say that it would probably take us about 5 years to get back to the readiness that our military was at before we even began this Iraq war, and that's if we had no conflict on our hands, if we were out of Iraq and we had unlimited resources to throw at the readiness issue.

So, you know, I have seen this from a lot of different areas, as to what is happening to our country with respect to that. And Americans need to know what it is costing them.

By the way, most Americans don't realize that when the President put in three sets of tax cuts and when the President said go out and spend, that's what you can do for the war, they don't really realize that, pretty much, we're on—we've borrowed all this money.

They have not—the American people have not paid for this war yet, and that will end up on the shoulders of the next generation or generations.

And it's reflected in the world that's seeing this.

They're beginning to understand that the economic instability that is happening out of Washington, DC—how is that reflected?

Well, the euro is 50 percent up against the dollar. In other words, the dollar is devalued; the devaluation is happening to the dollar, and there's a reason why.

Let me just end by saying, Mr. Chairman, what is \$3 billion a week? What does that get you? What does that mean? These numbers are so huge.

I would like to say that I've been in Congress for 12 years. For the last 12 years, I've been flying into Washington Dulles. That place is always a mess; it's been under construction for the whole 12 years. The little bus goes different ways, each and every time that I come, every single week.

One day, I went down to the carousel. I had a staff member with me; they pulled off their baggage. I was sitting around waiting for the first time and there's that thing, sorry for the dust, but we're trying to improve the place.

It says we're going to put in a new big runway; we're going to put in a mattress system here; we're putting in a new terminal; we're doing this; we're doing that; everything is going to look great; it's going to take another 2 or 3 years. It's already been 10 years, and it says—and all of this is going to cost us \$3 billion.

Imagine how much we could have done for our country, with just \$3 billion, 1 week's worth of money that we spend. Thank you, Mr. Chairman.

Chairman Schumer. Thank you, Representative Sanchez.
Senator Brownback.

OPENING STATEMENT OF THE HONORABLE SAM BROWNBACK, A U.S. SENATOR FROM KANSAS

Senator Brownback. I normally fly out of National Airport. During the week of 9/11, I flew out of Dulles.

That's the only place I could get a plane out of. There was no crowd there on that Friday, it was eerie.

There wasn't anybody around, there were only a few planes. I flew on a plane that had eight people on it.

I think 9/11 had an enormous cost on this country, has a continuing, ongoing, increased insurance cost for a number of buildings that people are having to protect now, concerned about planes flying into them.

It seems as if security has some value to it, and a lack of security has a cost associated with it to our economy. That is one of the

things that troubles me about the report today from the Majority Staff and some of the assumptions made.

I appreciate the hearing. I think there are some real questionable methodologies involved in this study, but I think that at the root, what troubles me the most, is that we're just not putting any value on security and on keeping on offense. Maybe that's just not something we possibly can do.

Perhaps it is. I don't know. Economics, it seems to me, is a science that makes a lot of assumptions, so there ought to be some assumption of what staying on offense and security is worth.

I don't like war. I've got a nephew that's a Marine, that's now over in Iraq. He's a wonderful young man. I don't like the idea of him being over there. We're proud of him, we're proud that he's there.

We want him to have the best equipment; we want him to be there as safe as possible, yet we're very, very pleased.

He's the first member in our family to go into the military for a number of years, and yet he's providing something of economic value, too.

I don't know how you make those assumptions.

I appreciate knowing how the conclusions were arrived at in this report, although we only got them late yesterday afternoon. I must note that we continue to believe, that I continue to believe that the report's methodology and assumptions are, at the very least, controversial and debateable—very controversial and highly debateable.

Moreover, by making really just some standard economic assumptions, slightly differently, over a trillion dollars of war cost estimated in the report, vanish. With results this sensitive to reasonable changes in economic assumptions, it seems that use of the findings in this report to guide policy, would not be warranted.

As an example of questionable assumptions used in the report, let me note that the report asserts that war costs have been debt-financed and a portion borrowed domestically; 60 percent displaces private investments that would have generated a 7-percent real rate of return, which, according to analysis, seems to be riskless.

It would have been more proper to do this evaluation using the risk-adjusted rate of return, which, in real terms, would be on the order of 3 percent. In any case, taking the report's assumptions to heart, we're informed that there are riskless private investment opportunities available that pay 7 percent returns.

Using the report's methodology, we also learn that effectively, every dollar of Government borrowing or tax revenue displaces around two dollars worth of social value. Now, perhaps we should take this to heart also, and immediately begin to cut spending, taxes, and borrowing, and let's allow our private citizens to enjoy the 7 percent real rates of return that are evidently available to everyone.

I've got a more detailed statement** addressing questions in this, but let me provide a couple of questions that the Majority Report can be—I would hope, would address, and would look at.

** See "Democrat JEC Report Hints at Existence of a Value Creation Machine: Over \$1 Trillion of Estimated Costs in Question," in the Submissions for the Record, page 61.]

These are just really questions. Should the present Social Security system be scrapped in favor of a system of personal accounts, given the assumptions put in the report on Government spending and using these funds. According to the report's methodology, the answer would be yes.

Do the deficit-financed tax cuts, create a net benefit for the economy? Using the report's methodology, apparently, the answer is yes.

The report totally ignores economic savings and benefits that may have resulted from attacks or disruptions that have been prevented by our efforts in Iraq and Afghanistan? As I noted at the outset, I guess that's the thing that probably troubles me the most.

I note that according to some estimates, the economic cost to the United States associated with the tragic attacks on 9/11, centered here and in the Chairman's State of New York, amounted to the loss of life, well over \$½ trillion of economic activity, and millions of lost jobs, like what happened at Dulles Airport the week after the attack when I was flying out of there.

The loss of economic activity alone, is more than the cost of direct spending in Iraq and Afghanistan to date. If our war efforts prevent another tragedy like the one on 9/11, prevent it here in Washington, prevent it in New York, prevent it in my home State of Kansas, tremendous benefits are obtained by nephew being on the ground there in Iraq.

Mr. Chairman, I must remark for the record, that I think there are a number of things that aren't properly valued. I do want to associate myself with one comment you made at the outset, about the problem of Iran and the great challenge that Iran presents to us, because, I think, as we look down the road—and we don't even have to look down the road, as we look now we can see that it is the centerpiece, the lead funder of terrorism as a state, around the world.

I agree with you, that this is a significant problem.

Do we encourage them or not, by pulling out of Iraq now, and the likelihood of it being taken over by Shiite fundamentalists?

Does that help stabilize our situation overall? I think these are unknowns, but I would certainly not want to risk them.

I look forward to questioning some of the panelists. I appreciate your being here, so we can go through some of this, but I think there's a lot of questions in this report.

Thank you, Mr. Chairman.

[The prepared statement of Senator Brownback, along with the report, "Democrat JEC Report Hints at Existence of a Value Creation Machine: Over \$1 Trillion of Estimated Costs in Question," appear in the Submissions for the Record on pages 59 and 61 respectively.]

Chairman Schumer. Thank you, Senator Brownback.
Representative Doggett.

**OPENING STATEMENT OF THE HONORABLE LLOYD DOGGETT,
A U.S. REPRESENTATIVE FROM TEXAS**

Representative Doggett. Thank you, Mr. Chairman, and thanks to our witnesses. Of course, we know well by now, that 9/11 has absolutely nothing to do with the topics that we're dis-

curring today, other than providing the most dramatic phony excuse for this unwise war.

We approach the fifth anniversary of President Bush's tragic choice to launch an invasion of Iraq. And as the time has past, the excuses for the war have shifted and shifted again, and so has the cost.

In September of 2002, we remember that White House Economic Advisor Lawrence Lindsay, estimated that the war could cost as much as \$100 to \$200 billion. Mitch Daniels, over at OMB, said, oh, that's very, very high, not a penny over \$50 or \$60 billion.

And, of course, most people think that Mr. Lindsay's message's frankness, even though it was wildly optimistic, was the main reason that he was dismissed from his White House job.

Defense Secretary Donald Rumsfeld and Mr. Wolfowitz, essentially said that it would be something under \$50 billion, paid for with Iraqi oil, and about the only cost that American taxpayers would have, would be the brooms to sweep up the rose petals.

Well, we've reached 2008, and we're fortunate to have all of our witnesses. I've followed, particularly, the work of Dr. Stiglitz and his associate, Linda Bilmes, who testified recently before our House Budget Committee, who has estimated, originally, a war costing \$2 trillion, that was criticized by the Administration.

I will say that I will agree with President Bush about one aspect of his criticism of your work, because you said we don't go to war on the calculations of green-eye-shaded accountants or economists. And that's right. He didn't go to war on calculations. He entered this ideologically driven conflict on miscalculations, misleading figures, and chronic repression of the truth, a picture that started before the war and continues through this morning.

We hear some sobering testimony today from all of our witnesses. What could even one, just one of the trillions of dollars involved here, do for America? Eight million housing units; 15 million public school teachers; healthcare for 530 million children a year; scholarships to a university for 43 million students.

Think of the impact that might have had, in a positive way, on our economy. And bringing it closer to home, since everyone has someone that they care about, who's got cancer, 2 weeks in Iraq would pay for the entire cancer research budget of the National Institutes of Health for a year.

But we know the real cost of this war, is not just the money we're hemorrhaging, but the blood of the brave and the blood of tens of thousands of innocent civilians who have been caught up in this conflict.

And the real cost is also measured around the globe. Frankly, we've had some important candor from Admiral Fallon, who noted, as head of Central Command, within the month, that the reason we've got so many problems over in Afghanistan with the resurgence of the Taliban, is, to use his term, because, quote, "we've had a little bit of neglect after the invasion of Iraq, as resources were diverted there."

A little bit of neglect, a little bit of misallocation of resources? What a tragedy.

And one of the reasons this war costs so much, that we're apparently paying for both sides or all sides. We are arming all sides in

a civil war, the Pentagon can't keep track of the weapons that it supplies there.

The Government Accountability Office estimated, last August, that 30 percent of the weapons are unaccounted for, that they have lost track of 190,000 AK47 assault rifles and pistols given to Iraqi security forces.

It doesn't take an accountant with green eye shades, to see that there is no accountability in Iraq.

And the real cost of this war, it's also paid every time we go to the gas pump, as we've seen the cost of oil go up and up and up.

The President can veto our attempts to end this costly, bloody, and unnecessary conflict, but he cannot repeal the laws of economics. American families will be footing this bill for this war for generations, with compounded interest on the borrowed money, long, long after President Bush returns to Texas to clear brush full time. Thank you, Mr. Chairman

Chairman Schumer. Thank you, Representative Doggett.

Before I recognize our next speaker, Representative Hinchey, I would ask unanimous consent that the full statement of Congressman Paul be added to the record, and unanimous consent that any other statements from Members here or not here, be added to the record at this point.

[Prepared statements appear in the Submissions for the Record; See Table of Contents for listing.]

Chairman Schumer. Representative Hinchey.

**OPENING STATEMENT OF THE HONORABLE MAURICE
HINCHEY, A U.S. REPRESENTATIVE FROM NEW YORK**

Representative Hinchey. Mr. Chairman, I want to thank you very much for holding this very necessary hearing, so that we in this Congress and the people across the country, can begin to better understand the costs that are associated with this illicit invasion and subsequent disastrous military occupation of Iraq, which is being called a war, but which is not a war at all. It is just that, an illegal activity followed by military occupation over the course of the last now almost 5 years.

I want to thank all of you gentlemen, all four of you, very, very much, for being here with us today, for helping us, in the context of your testimony, and the people of our country, draw better attention to this issue and to understand it more effectively.

There is no question that there have been very serious negative economic impacts of this illegal activity by this Administration, with regard to the engagement in Iraq, as has been said.

One of those issues is the price of energy and the price of food, both of which now have jacked up so high that it's causing disastrous consequences for middle-income, lower- middle-income, blue and white collar working people all across this country.

The decline in the value of the dollar, has been a major contributor to the increase in the cost of oil and the price of gasoline at the pump. And the value of our dollar is extremely low, and the ability to overturn that, is going to be very difficult.

What are the economic consequences? We now have 47 million people without health insurance—more than that, more than 47

million people without health insurance in our country, struggling with their lives.

We have now more than 37 million people living below the poverty level, and all of that is having a disastrous consequence on this economy.

And as a result of the way in which this Administration has not just managed this war, but managed the American tax code, we now have the greatest concentration of wealth in the wealthiest 1 percent of Americans, that we have had in this country since 1929, interestingly enough.

There are some people who might point out that we could very well be on the edge of depression here. There's no question that we're on the edge of recession; the only question involved in that, is, how deep is that recession going to be? How long is it going to last? What will be the financial impacts of that recession on our economy?

What are we going to do to be able to deal with this economic issue more effectively? As my colleague, the Senator who left just a few moments ago, suggested, there definitely is a motivation on the part of this Administration, for increasing this huge national debt, which is now up above \$9 trillion, and for depressing the economy in this way.

What is that motivation? In my opinion, the motivation is to enable them to come back with the argument that we are in such dire economic circumstances, that we can't afford the most essential cultural ingredients for many people in our country—Medicare, Social Security—they want to undermine both of those programs, and they'd like to eliminate them, if they could.

And that's part of the motivation for increasing this debt, slowing down this economy. So we have an awful lot to deal with here.

This 1 percent now has, as I think I mentioned, something in the neighborhood of, I think, 38 percent of the wealth of our country in the top 1 percent. The top 5 percent has close to 60 percent of the wealth, largely as a result of the misspending of this Administration and the way in which they have altered the tax code.

We, this Congress, must have the courage to stand up to this situation, address it properly and effectively, so that we can turn it around and begin to have a set of economic circumstances in America that deal with the needs of the people of this country.

So I thank you very, very much for being here, and I am very anxious to hear what you have to say. Thank you very much.

Chairman Schumer. Thank you, Congressman Hinchey. Last, but certainly not least, is Senator Klobuchar from Minnesota.

**OPENING STATEMENT OF THE HONORABLE AMY KLOBUCHAR,
A U.S. SENATOR FROM MINNESOTA**

Senator Klobuchar. Thank you very much, Mr. Chairman.

In the time it will take me to give this opening statement, the Iraq war will cost our country another \$1.2 million.

That's \$1.2 million every 4 minutes, adding up to \$430 million every day, \$12 billion every month. I don't think this hearing could have come at a more crucial time.

The President seems intent on leaving the current situation for the next Administration to resolve.

Unfortunately, our soldiers in the field don't have the luxury of sitting back while we staying endlessly in this war, with no plan to end it in sight.

I don't think we can continue to give this President a blank check. We will ensure the safety and well being of our troops, which is so important for me. I have a brother in the National Guard, and we must plan for a reasonable withdrawal.

I heard some of my colleagues talk about the cost of treasure. They talk about something is priceless. What is this treasure we're talking about?

First of all, we know, by some estimates, looking at both the direct and indirect costs of the war, that it's about \$1.5 trillion. Second, there is the lack of accountability and money that has just disappeared.

Last year, military officials admitted that contracts worth over \$6 billion to provide essential supplies to troops in Iraq and Afghanistan, are under criminal investigation and \$88 billion in contracted programs are being audited for financial irregularities.

Three top auditors overseeing reconstruction projects in Iraq, reported that of the \$57 billion awarded in contracts, they investigated, approximately \$10 billion has been wasted. Another \$4.9 billion was lost through contract overpricing and waste, and \$5.1 billion was lost through unsupported contract charges. That's the treasure, that's the price.

What other price is there? Well, there's the price of our standing in the world and what we've lost in terms of the work that we could be doing elsewhere in the world.

And then there's the price of our soldiers. I went and visited Iraq in March, and I saw firsthand, the bravery of the Minnesota troops. They would come up to me in the cafeterias and they'd come up to me in the airport tarmacs, and they didn't complain about a thing; they didn't complain about their equipment or their tour of duty, which had been extended over and over again, or the weather.

They just asked me if I'd call their moms and dads when I got home, to tell them they were OK.

And when I talked to their moms—I talked to over 50 parents—I saw the other cost of the war, because they told me a few things that the soldiers over there didn't want to talk about, and that was their families waiting and waiting for them to return, the loss of jobs, especially for these National Guard members and Reservists, who were only supposed to go over maybe for 3 or 4 months, and then they have their livelihoods at home, which can't wait a year, can't wait 2 years.

They talked about how some of them had come home and found out that their education benefits that they were supposed to get, their full education benefits, weren't there. The average age of a soldier in Vietnam, was 19; the average age of the Minnesota National Guard is 33. Half of them have kids.

It's a different kind of war. When you look at the cost—

[Protest placards displayed.]

Chairman Schumer. Could we have order? The rules of the Committee are no—thank you.

Senator Klobuchar [continuing]. When you look at the cost of this war, you look at the price tag, you look at the money that has actually been wasted because of a lack of accountability, and you look at our standing in the world, but you also have to look at the cost for these brave men and women who've done everything they're supposed to do—they deposed an evil dictator, they're guaranteed free elections in Iraq. That is the price of this war. Thank you, Mr. Chairman.

Chairman Schumer. Thank you, Senator Klobuchar.

Now we're ready to hear from our witnesses, and I first want to introduce each of them. First, professor Joseph Stiglitz is university professor at Columbia, chair of Columbia University's Committee on Global Thought; he was awarded the Nobel Prize in 2001; he was chairman of President Clinton's Council of Economic Advisors, before becoming chief economist and senior vice president of the World Bank.

He is the author of numerous books and articles, including his latest book, which I've already mentioned, and is most relevant for our discussion today, "The Three Trillion Dollar War." Dr. Stiglitz received his Ph.D. from MIT.

Dr. Robert Hormats is vice chairman of Goldman Sachs, and an international managing director of Goldman Sachs. He has a lengthy record of public service. He's served in both Democratic and Republican administrations as Assistant Secretary of State for Economic and Business Affairs; Ambassador and Deputy U.S. Trade Representative; and Senior Deputy Assistant Secretary for Economic and Business Affairs at the Department of State.

He's the author of numerous books, as well, including "The Price of Liberty: Paying for America's Wars From the Revolution to the War on Terror."

Dr. Hormats holds a Ph.D. in international economics from the Fletcher School.

Mr. Rand Beers is currently president of the National Security Network. Before joining the NSN, he spent over three decades in public service, again, under both Democratic and Republican administrations.

From 1988 to 1998, Mr. Beers served on the National Security Council staff at the White House, as Director of Counterterrorism and Counternarcotics, Director for Peacekeeping and Senior Director for Intelligence Programs.

More recently, he was Special Assistant to the President and Senior Director for Combating Terrorism at the NSC. He also has a distinguished record of military service as a Marine officer and Rifle Company Commander in Vietnam.

Dr. Scott Wallsten is currently a vice president of research and a senior fellow at the iGrowth Global, as well as senior fellow at the Georgetown Center for Business and Public Policy, and a lecturer in public policy at Stanford University.

He's been a director of communications policy studies and senior fellow at the Progress and Freedom Foundation; a senior fellow at the AEI Brookings Joint Center for Regulatory Studies, and a resident scholar at AEI.

In addition, Dr. Wallsten has served as a economist at both the World Bank and the President's Council of Economic Advisors. His

research has been published in numerous academic journals; his commentaries have appeared in newspapers and news magazines around the world, and he holds a Ph.D. in economics from Stanford University.

Gentlemen, you may each proceed. We'll start from my left with Dr. Stiglitz and work our way over to the right.

I guess that's appropriate here——

[Laughter.]

Chairman Schumer [continuing]. And your entire statements will be read into the record.

Dr. Stiglitz.

STATEMENT OF THE HONORABLE JOSEPH E. STIGLITZ, NOBEL LAUREATE; PROFESSOR, COLUMBIA UNIVERSITY, NEW YORK, NY

Dr. Stiglitz. First, thank you for this opportunity to discuss the economic costs of the Iraq war with you. March 19 marks the fifth anniversary of what was supposed to be a short venture to save the world from the threat of weapons of mass destruction, which simply weren't there.

It is now the second longest war in America's history, and after the all-encompassing World War II, the second most costly, even after adjusting for inflation.

In terms of cost per troop, it is by far the costliest, some eight times as expensive as World War II.

Before turning to the cost beyond the Federal budget, which is the subject of these hearings, I want to make three prefatory remarks:

We went to war to fight for democracy, but democracy is more than just periodic elections. It involves broader notions of democratic accountability. Citizens have the right to know what they are spending their hard-earned dollars on.

They have a right to know what their Government is doing and the consequences of its actions. Over the past 2 years, I have worked with a colleague at Harvard, Linda Bilnes, to estimate the full cost of the Iraq war.

We published our initial study in January of 2006, and I would like that paper to be entered into the record.

Chairman Schumer. Without objection.

[The study, "Soldiers Returning from Iraq and Afghanistan: The Long-term Costs of Providing Veterans Medical Care and Disability Benefits" appears in the Submissions for the Record on page 131.]

Dr. Stiglitz. We published a second study concerning the cost of providing medical care and disability benefits to our returning Veterans, in January 2007. I would ask for that also to be entered into the record.

Chairman Schumer. Without objection.

[The study, "The Economic Costs of the Iraq War: An Appraisal Three Years After the Beginning of the Conflict" appears in the Submissions for the Record on page 152.]

Dr. Stiglitz. We have now published a book, "The Three Trillion Dollar War," which estimates the cost, the true cost of the war, including the veterans' costs and the impact on the U.S. economy.

We should not have needed to write this book, and when we came to write it, it should have been a far easier task. The Administration and Congress should have provided these numbers to the American people.

Five years after the beginning of this war, you should not be funding this war with emergency appropriations, which escape the normal budget scrutiny. We should not have had to resort to the Freedom of Information Act to find out how many Americans have been injured in this war.

This Administration has said that it will provide everything that our troops need. We should not have had to use the Freedom of Information Act to discover that more than 3 years ago, senior officers in the Marines were already sending urgent requests for MRAPs, which would have saved the lives of a large fraction of those killed, if we had provided these vehicles for them at that time.

The second remark is that the budgetary costs themselves, have been enormous, far, far larger than the some \$50 billion that the Administration estimated at the beginning of the war. We are now spending that amount on operations alone every 3 months.

But the costs to the Federal budget are far larger than the day-to-day operational costs. The war has raised overall military costs. We have to pay more to recruit and retain our troops, and even with these increased expenditures, standards for troops have had to be lowered.

It will also be costly to restore our military to its pre-war standing, both in terms of personnel and material.

There are costs hidden in other parts of the budget.

Not only are the direct costs of contractors high, but we are paying for their insurance, for death benefits and disability.

The most important costs that go well beyond the operational costs are the expenditures required to provide healthcare and disability for returning Veterans. These are likely to be very, very high. We will be paying these bills for decades to come.

Almost 40 percent of the 700,000 who fought in the 1-month-long Gulf War have become eligible for disability benefits, and we are paying more than \$4 billion a year for disability benefits from that short war.

Imagine then, what a war that will almost surely involve more than 2 million troops and will most surely last more than 6 or 7 years will cost. Already, we are seeing large numbers of returning Veterans showing up at VA

Hospitals for treatment, large numbers applying for disability, and large numbers with severe psychological problems.

My third prefatory remark is this: We will be facing these budgetary costs for decades to come. Even the CBO methodology, which looks 10 years into the future, is too short for these liabilities which we have incurred.

In the case of World War II Veterans, VA expenditures peaked more than four decades after the cessation of hostilities. Furthermore, because the Administration actually cut taxes as we went to war, when we're already running large deficits, this war has effectively been entirely financed by deficits.

There has been much discussion of unfunded entitlements in recent years. This war has created a new unfunded entitlement—future benefits of Iraq Veterans that may total half a trillion dollars or more.

The focus of my remarks today, however, is on the large costs that go beyond these budgetary costs. We classify these into two categories: microeconomic costs and macroeconomic costs.

We have consistently understaffed, under-invested, and underfunded the medical and disability programs that serve our veterans. As a result, our servicemen and women returning from the battlefield in Iraq often face a new battle with the bureaucracy to get the benefits to which they are entitled and which they deserve.

When they cannot get the healthcare to which they are entitled, or they have to wait months just to schedule an appointment to see a VA doctor, those who are fortunate enough to have families who can afford to do so pay for it on their own.

This doesn't diminish the cost to society; it just shifts the burden from the Federal budget to these people who have already sacrificed so much.

There are many other ways in which the costs to society exceed the cost to the budget, often by considerable amounts, which we detail in our book.

I have so far emphasized the direct economic costs and there has already been a lot of discussion about the opportunity costs, the diversion of funds that could have been used in so many other and better ways. I would be remiss, however, if I did not note that there are other costs in the long run, like the squandering of America's leadership role in the international community, which I hope will be discussed a little bit later.

Finally, I want to turn to the macroeconomic costs: First, I want to dispel a widespread misconception that wars are good for the economy, a misconception that arose from the role that World War II may have played in helping the United States emerge from the Great Depression.

But, as Congressman Paul pointed out, that was perhaps not an accurate account of what actually happened. But at least since Keynes, we know how to maintain the economy at or near full employment, in far better ways. There are ways of spending money that stimulate the economy in the short run, while at the same time leaving it stronger for the long run.

This war has been especially bad for the economy. Some of the costs are only becoming apparent now; many we will face for years to come.

There are four major categories of impacts. The first is through its impact on oil prices, which, at the beginning of the war, was \$25 a barrel and now is \$100 a barrel.

In our estimates, we are very conservative and only attribute \$5 to \$10 of the increase to the war, and we assume the price increase will last for only 7 to 8 years. We think those assumptions are unrealistically conservative.

For instance, futures markets today expect that the price will remain in excess of \$80 a barrel for at least the next decade.

Money spent to buy oil is money not available to be spent here in the United States. It's as simple as that. Lower aggregate demand leads, through a multiplier, to lower national income.

The second impact arises from the fact that Iraq expenditures do not stimulate the economy in the short run, as much as expenditures on, say, infrastructure or education, that are so badly needed here at home.

The third impact is that, both directly and indirectly, through the mounting deficits, Iraq expenditures are crowding out investments that would have increased America's productivity in the future.

The mounting Iraq war debt has meant that we have had to borrow more and more money from abroad, and America, as a country, is far more indebted to others than it was 5 years ago.

Until recently, it was a surprise to some that in spite of these obvious ways in which the Iraq war was weakening the American economy, the economy seemed as strong as it did. Was there something after all to the old adage about wars being good for the economy?

To me and to other serious students of the American economy, there was, however, an obvious answer: These weaknesses were being hidden, just as much of the other costs of the war were being hidden from easy view.

The exposure of these weaknesses, was, it seemed to me, just around the corner, perhaps even more than the long vaunted victory that remained elusively just around the corner.

The macroeconomic effects were being hidden by loose monetary policy, a flood of liquidity, and lax regulation. These allowed household savings rates to plummet to zero, the lowest level since the Great Depression, and fed a housing bubble, allowing hundreds of billions of dollars to be taken out in mortgage equity withdrawals that increased the irresponsible consumption boom.

The cost to the economy of this downturn will be enormous. We do not know, of course, how long or how deep the downturn will be, but it's likely to be the worst than any we have experienced in the last quarter of a century.

Even if growth this year is .8 percent, as the IMF forecasts, and next year growth starts to resuscitate to 2 percent, and in 2010, returns to its potential growth of, say, 3.5 percent, which would be a quicker recovery than most would expect, the total lost output over those 3 years, the discrepancy between the economy's actual output and its potential, will amount to some \$1.5 trillion.

America is a rich country. The question is not whether we can afford to squander \$3 trillion or \$5 trillion. We can, but our strength will be sapped.

We will be less prepared to meet the challenges of the future, and there are huge opportunity costs. Some of our children will not have the medical care that they should have a right to, a right every citizen born in a country as rich as ours should have. Some will bear the scars for life.

We are not investing as we should in technology and science.

Economists are fond of saying that there is no such thing as a free lunch. It is also the case that there is no such thing as a free war. This is not the first time that an Administration tried to enlist

support for an unpopular war, by trying to hide the true and full cost from the

American people, and this is not the first time that America and the American economy has suffered as a result.

The inflationary episode that America went through beginning in the late 1960s, was at least partly a consequence of President Johnson's failure to fully own up to the costs and adjust other taxes and expenditures appropriately.

This time, the underlying economic situation is different, and, accordingly, the consequences have been different, but in many ways, even more severe.

The budgetary costs of this war have been huge, but the costs that go beyond the budget, are at least as large and the meter is still ticking. Every year of this war has seen the costs rise.

But even if they stay where they are, staying another 2 year, will add, conservatively, another \$500 billion to the total tally. No one can know for sure, whether, when we depart, things will get better, as most Iraqis seem to believe, or worse.

No one can know for sure whether staying an extra 2 years will make the chaos that might follow less or greater.

But it is your solemn responsibility to make the judgment, is this the best way of spending \$500 billion? Is it the best way to strengthen America's capacity to meet future challenges, to promote democracy around the world, to help create the kind of world here and abroad that we would like our children to inherit?

Is it the best way of providing for our security? For too long, this Congress and this Administration have approached the problem by dribs and drabs, a little more today might just do the trick, a little more later will help us turn the proverbial corner.

But as the late Senator Dirksen said, a billion here, a billion there, and pretty soon you're talking about real money.

Today, we would have to say that a trillion here, a trillion there, and pretty soon, you're talking about real money.

Even a rich country ignores costs of this magnitude at its peril.

[The prepared statement of Joseph E. Stiglitz appears in the Submissions for the Record on page 125.]

Chairman Schumer. Thank you, Professor Stiglitz.

Dr. Hormats.

**STATEMENT OF DR. ROBERT HORMATS; VICE CHAIRMAN,
GOLDMAN SACHS (INTERNATIONAL), NEW YORK, NY**

Dr. Hormats. Thank you very much, Mr. Chairman and Members of the Committee. I want to start by associating myself with Joe Stiglitz's point that this is a very valuable hearing, because it presents an opportunity to discuss an issue that has not received sufficient consideration—the true cost of the war—and, beyond that, that there are hidden costs of the war that the Committee described in its report, and that Joe has put so eloquently in a book that he has just published.

Let me just make a few broad points, and then try to address a couple of the issues that were raised to by Members of the Committee. In my view, democracies function best when policies are based on the informed consent of the governed.

Here, I emphasize the word, “informed.” In most wars, there is a tendency to underestimate the cost of that war at the outset, in part, because of wishful thinking that the war will be short and cheap, and, in part, because leaders often cannot immediately judge the true costs of the war, at the outset of that war.

This was certainly the case during the Civil War, World War I, the Vietnam War, and others. But there was generally a very candid, open, and robust debate in the Congress and among the American people, about how to pay for a war, once its cost became apparent, and, in some cases, even anticipation of rising costs.

During this war, there has been a surprising absence of vigorous public or Congressional debate over war costs and how to pay them. In large measure, that is because the war represents only a small portion of American GDP, roughly 1 percent annually in direct budgetary terms, compared to World War II, which was about 40 percent of GDP, at its peak; the Korean War, about 15 percent; Vietnam around 10.

So, paying for the current war has not appeared to impose large visible costs on the American economy, although, as I shall point out later, and Professor Stiglitz has mentioned just now, that is a deceptive illusion.

Also, in other wars, higher taxes and elevated borrowing that pushed up interest rates, as in the case of, say Vietnam, forced Americans to come to grips with the cost of the war and political leaders to feel a greater sense of accountability about war costs.

This war, so far, has seen taxes lowered, and has had no direct or immediate impact on interest rates. In fact, for the better part of this war, the Federal Reserve was cutting interest rates and long-term bond rates were quite stable.

Moreover, the fact that this war has been financed entirely by emergency budget supplementals, that circumvent the normal budget process, has meant that the Executive Branch and the Congress have been able to skirt the issue of tradeoffs in the budget.

There is a great deal of unnecessary and non-essential spending, including climbing numbers of earmarks, that has occurred, despite the increasing costs of the war, a development that never before has occurred in American wartime history.

Normally, when America goes to war, non-essential spending programs are reduced to make room in the budget for the higher costs of war. Individual programs that benefit specific constituencies, are sacrificed for the common good.

FDR himself slashed, or removed from the budget entirely, many of his pet New Deal programs. And taxes have never been cut, in the entire history of the United States, during a major American war.

For instance, President Eisenhower adamantly resisted pressure from Senate Republicans to cut the income tax during the Korean War.

Let me make a couple of points about how leaders have addressed specifics. Let me just quote a couple of thoughts that are worth keeping in mind.

FDR, in his State of the Union speech after Pearl Harbor, in January 1942, said, “War costs money and that means taxes and bonds

and bonds and taxes; it means cutting luxuries and other non-essentials.”

Higher taxes, as well as cuts in luxuries and non-essential spending, have been hallmarks of fiscal policy during every war in which the United States has engaged, until now.

The Iraq war, as Joe indicated, has been paid for in a very different way. It's the first war during which taxes have been cut and non-essential spending has increased, and, quite substantially, at that.

It has meant that the bond part of FDR's equation, i.e., Federal borrowing, has been the sole source of funding for the costs of this war. That has made it easier for Americans to avoid coming to grips with the cost of the war, because no popular programs were cut, no new taxes were levied, no inconvenience to anyone, except our troops and their families, who are suffering mightily from this war.

Let me just make a few specific points relating to what Members of the Committee have mentioned, and then I'll conclude. One is the “opportunity costs” of the war.

This is a very important point, and let me quote someone who you might not normally think of in this context—Dwight Eisenhower. I think this statement makes an important point. Said Eisenhower, “Every gun that is made, every warship launched, every rocket fired, signifies, in the final sense, a theft from those who hunger and are not fed and those who are cold and are not clothed.”

This is not a pacifist speaking; this is the Supreme Allied Commander of World War II. He wasn't saying, “don't go to war if you need to.” Obviously, he supported World War II with enormous enthusiasm, with great historic success.

He was saying, when you go to war, understand the tradeoffs, understand the tradeoffs. If it is a war of choice, as the Iraq war has been—not Afghanistan, but Iraq—understand the tradeoffs, the choices that you're going to make.

The second comments goes to the point that Congressman Paul mentioned, and that is the debt that is built up in a war. This goes back to President Washington, who urged Congress and his fellow citizens to “Discharge the debts which unavoidable wars. . .” he meant the Revolution “may have occasioned, not ungenerously throwing upon posterity the burdens we ourselves ought to bear.”

I think that message often tends to be forgotten in our country.

Let me just make a couple of final points in terms of recommendations.

It seems to me that there are four or five points that are well worth recognizing, as we try to learn the lessons of this war. This has been a bitterly divided country over this war, but it seems to me, there are a few lessons that should be able to unite us as we try to figure out how to do it better next time.

One is, avoid paying for wars almost exclusively by supplementals. This distorts the entire budget process.

Even during Vietnam, where the Administration, Johnson and McNamara, tried to do this, the Senate leadership—the Senate was Democratic, White House was Democratic—the Senate leaders went to the President and said, you cannot continue to do this. And

even, the Vietnam war, which was mis-financed and non-transparently financed, only about 25 percent of that war was financed by supplementals, because the Congress went to the President and said stop doing this, it distorts the budget process. Lyndon Johnson, who was not exactly an easy guy to convince, understood that he was losing credibility by doing this.

Second, cut way back on unnecessary spending when you go to war. This should have been done after 9/11. In fact, domestic spending rose, earmarks rose, and the same thing prevailed after the beginning of the Iraq war in 2003.

Third, exercise more Congressional oversight over war spending. A lack of this undermines the credibility of a war, if a lot of the waste is palpable and obvious to the American people.

Let me cite one historical reference. The so-called Truman Committee, during World War II—again, Democratic President, Democratic Congress—the Democratic Congress exercised enormous oversight. Truman’s Committee went around the country and looked at military bases; it insisted on procurement reforms that saved the country roughly \$15 billion during World War II.

And it made the whole war effort more credible in the eyes of Americans, because it reassured them that money was being spent wisely.

Now we need the money more than ever, we need efficiency more than ever, so this watchdog role of Congress and a permanent oversight committee, or at least using the existing committees, makes enormous sense to me.

It’s also important that we look at the issue of veterans and veteran spending, because, that is going to be an important problem over the long term, for wounded Veterans.

In every other war, there has been a sacrifice by the American people. When American troops went to war, Americans at home have had a tradition of sacrificing for those troops on the battlefield.

Woodrow Wilson’s Treasury Secretary, William Gibbs McAdoo, called it “capitalizing patriotism.” He said, the troops are sacrificing, Americans should give up something at home to support those troops, whether you agree with the war or you didn’t agree with the war.

And it seems to me, one point that’s very important here is that these wounded veterans are going to have enormous medical expenses for a long time. I think the American people would support a surtax or at least a voluntary surtax, if not a mandatory one, on upper income taxpayers, of a relatively small amount of money that would go entirely to a fund dedicated to paying for the costs of wounded veterans. This would constitute at least some measure of sacrifice on the home front for people who are making sacrifices abroad, and our troops are doing this.

Finally, we need to take a long look at national finances in this country. We have the long-term costs of this war, the long-term costs of national security; we have growing costs of Social Security, Medicare and Medicaid, a whole host of things, and we’re leaving burdens that the next generation and generations beyond are going to have to pay off.

And, you know, this goes back to the Washington quote about the theft from the future, if we don't exercise fiscal responsibility in the current environment.

So I think this is a bigger issue than the war; the war is not the only reason for our budget deficits. A lot of spending has taken place at home that shouldn't have. Some of the tax cuts during war have been unusually high and prolonged.

We need to make sure that Federal revenues and spending begin to converge. Given current policies, they are going to diverge very dramatically in the next decade and beyond. Thank you very much.

[The prepared statement of Dr. Robert Hormats appears in the Submissions for the Record on page 211.]

Vice Chair Maloney [presiding]. Thank you.

Dr. Beers.

**STATEMENT OF DR. RAND BEERS; PRESIDENT, NATIONAL
SECURITY NETWORK, WASHINGTON, DC**

Dr. Beers. Thank you very much, Congresswoman Maloney and all of you, for asking me to take a somewhat different tact from the other testimony today, and take a look at the strategic costs of the war.

Senator Brownback, you raised the questions of the costs of security, and I hope that we can engage in a dialog on that issue, because that's what I want to talk about, as well.

Iraq does not occur in a strategic vacuum; it is part and parcel of a much broader range of issues and security challenges that the United States faces.

I think it is important, as we think about Iraq, that we look at what those other challenges are, and whether or not we have been able to deal with them and meet them while we have been bogged down in Iraq.

I sat in the White House working on the National Security Council staff at the end of 2002 and the beginning of 2003, and the strategic environment that I saw at that time, included a number of the issues that are on the table today.

But I want to focus first on Al Qaeda. At that particular point in time, we had just experienced the Bali bombing, in which almost 200 people were killed by a bomb in that vacation resort, and we became very clearly aware that Al Qaeda had moved from being an organization, to becoming a movement, a movement that was global in nature, a movement that was capable of operating around the globe with deadly force.

At the same time in the fall of 2002, it was also clear that the number of incidents that were caused by the Taliban in Afghanistan, had begun to rise.

At the same time, it was also clear that the opium poppy, which had not been grown in Afghanistan for a year, was suddenly back, and, as we know, would continue to grow.

Last, Osama Bin Laden was still on the loose.

Now, if I was Bin Laden and I was sitting in a cave in Pakistan or Afghanistan or wherever I was at that particular point in time, what would I want, from a strategic viewpoint to have happen, that would allow me to continue to pursue my aims around the world?

Well clearly, the first thing I would want is for the United States to go away, to go someplace else and become involved. And if they went someplace else, what would I want them to do?

Well, I would want them to stay there. So we did, and so he looked at the strategic situation again.

Well, they're there, and how do I keep them there? I don't have a presence in Iraq. There was no Al Qaeda presence in Iraq before our invasion.

He sent some people there, in order to provoke the conflict further, in order to get others, who weren't even members of his organization, to become involved in that same conflict.

And then what would he do? He would want to publicize the fact that the United States was heavily involved, was seen as an occupier, and was involved in casualties that he could label as innocent civilians.

What was the result? The National Intelligence Estimate on Terrorism said that Al Qaeda has reconstituted along the Pakistan-Afghan border and is again capable of attacking the homeland. That's us; that's a strategic cost of our involvement in Iraq.

Let me do one more like that: You're Iran and you're sitting there, you have, one, cooperated with the United States in Afghanistan, publicly to create the Bonn Declaration and set up the new government in Afghanistan.

You have offered the United States, a terrorist that you have captured, and you are put on Axis of Evil. You then have a situation at the beginning of the war in which there is a chance for dialog, so that conflict can be avoided, and within the U.S. Government, there was a move to offer that dialog, in order to discuss whether or not the Al Qaeda members who were known to be in Iran, and known to be under the watch of the government, might be available to the United States, in return for our agreement to do something about their terrorists, terrorists who we also called terrorists, the Mujahaddin-i-Khalq, but we were too preoccupied, and, after all, we had listed them as the Axis of Evil, and that particular option was not pursued.

So after we invade, the first thing you're going to do in Teheran, is probably pray that something intervenes in order to leave you in a situation with a huge U.S. force next door, you are not the next victim of that military force.

And then what you do is, you think, are there any options that you have to play in Iraq? Of course, there are. A lot of the Shia leadership spent time in your country; you know them; you can work with them.

And what you do, of course, at the same time that we're invading is send your own operatives into Iraq in order to work with the Shia there, and in order to do what you can to make sure that the United States is unable to do anything to you.

And so what do we have today? We have a U.S. military that's strained. We have a limited capacity to be able to use force against Iran should we choose to do so, and we have ignored all of the opportunities for engagement with Iran, that might have ameliorated the situation in Iraq and the global challenges that we face from the Iranian nuclear program.

I want to end with those two points and just close and say, what happens when you rely on military power to demonstrate your strength, so that others will follow you and you do not win? What happens when you ask others to act consistently with the Geneva Convention and the International Convention on Torture, and then when the tragic situation at Abu Ghraib is revealed, you quibble about whether or not enhanced interrogation might be something that we wanted to reserve as an option in the global environment?

What happens when you seek help for Afghanistan or Darfur or elsewhere, and no one comes?

The strategic cost of the war in Iraq is not just our inability to deal with problems like Al Qaeda, Pakistan, Afghanistan, the Middle East peace process, and our strained military; it is also, and more importantly, the limitations on our ability to get others to work with us, to support us, to look at us as a role model in the world. Thank you.

[The prepared statement of Dr. Beers appears in the Submissions for the Record on page 216.]

Senator Chafee. Thank you, Mr. Beers. Let me apologize to both you and Dr. Hormats, that I was unable to hear the testimony. I did read what had been submitted.

Dr. Wallsten.

STATEMENT OF DR. SCOTT WALLSTEN; VICE PRESIDENT FOR RESEARCH AND SENIOR FELLOW, iGROWTHGLOBAL, WASHINGTON, DC

Dr. Wallsten. Mr. Chairman and Members of the Committee, thank you for inviting me to testify today on the costs of the war.

I estimate that the expected net present value of the total direct costs or microeconomic costs, as we refer to them, of the war are approximately \$1 trillion to the United States, and closer to \$2 trillion globally.

The real direct economic costs of the war include not only expenditures from the U.S. budget allocated for the war, but also injuries, lives lost, and lost productivity from reservists who cannot do their civilian jobs because they have been called up for service, and other costs, as well.

My co-author, Katrina Kosec, and I began this project in 2005, and have updated our numbers periodically since then. I have submitted the original 2005 paper, which explains our methodology in detail, to the Committee, and I would hope that it could be introduced into the record.

[The paper referred to, "The Economic Costs of the War in Iraq," appears in the Submissions for the Record on page 222.]

Dr. Wallsten. We have found that the total direct economic cost at any given point in time tends to exceed budget appropriations by about 20 to 25 percent.

As wealthy as our Nation is, our resources are limited and must be spent carefully. Other areas of policy attempt to explicitly take into consideration the full economic costs and benefits of Government actions.

President Ronald Reagan signed an Executive order requiring certain agencies to conduct a cost-benefit analysis for any proposed

major regulation, and to adopt it, quote “only upon a reasoned determination that the benefits of the regulation justify its costs.”

President Bill Clinton renewed that order, as did the current President. Now cost-benefit analysis has become an important and accepted, though certainly not the only, tool for evaluating many proposed policies.

But this approach has yet to be explicitly incorporated into decisions regarding defense and security. Admittedly, the current tools we have for evaluating costs and benefits are not perfectly suited for evaluating the costs of war, since they were developed for use in a different setting.

The tools are blunt and imprecise, meaning that the cost estimates all of us are presenting today are measured with error. That’s why Katrina and I included in our paper ranges of estimates, and also built an online estimator that allows people to change underlying assumptions to see how these affect the costs.

Nevertheless, this type of analysis can provide valuable information to help inform policymakers as to the best course of action going forward.

In addition, we supply these tools to other related areas like homeland security. The Office of Management and Budget estimated last year that major homeland security regulations imposed a cost of \$2.2 to \$4.1 billion a year on the economy.

But those rules were passed with no estimates of their expected benefits. Those costs may sound small compared to the cost of the war, but they are not. The net present value of those costs is close to \$100 billion.

Estimating the benefits of homeland security measures or of any military operation is difficult, because, as OMB acknowledges, they depend on the probability and severity of outcomes like terrorist attacks, which are difficult to quantify.

But just because expected costs and benefits are difficult to estimate doesn’t mean they don’t exist, and if you can’t estimate the benefits, you should still follow through on a policy only if you have good reason to believe that those benefits exceed the costs, and if you believe that it’s the best way to achieve those benefits.

Professor William Nordhaus of Yale was the first to do this exercise for the war in Iraq, and he did it before the war when it could have helped inform policy.

He acknowledged that there would be some benefits of a war; the world would be better off if Saddam Hussein were not in power. But Professor Nordhaus meticulously estimated ranges of the likely costs under different scenarios, and concluded that a war in Iraq could cost between \$100 billion and \$2 trillion.

And he further qualified the results by noting factors that he did not include, such as costs to other countries, or as he put it, quote, “fallout that comes from worldwide reaction against perceived American disregard for the lives and property of others.”

The point—aside from noting that Professor Nordhaus was far more insightful than any of us by doing this exercise in advance—is that even under tremendous uncertainty these tools can provide us with useful information to help inform decisions.

If Congress and the public had seriously considered Professor Nordhaus projected cost estimates, would we still have gone to

war? Perhaps some might have believed it was still worthwhile, but perhaps not.

We can't do anything about the costs we've already incurred; those resources are gone, but we do have some control over what happens next. The lesson, I believe, is that policymakers can use the tools of cost-benefit analysis to help evaluate whether proposals regarding what to do next in Iraq are likely to yield enough benefits to us and the world, and hopefully that additional information will lead to better decisions. Thank you.

[The prepared statement of Dr. Scott Wallsten appears in the Submissions for the Record on page 220.]

Chairman Schumer. Thank you, Dr. Wallsten. I want to thank all of our witnesses for their just outstanding testimony.

I have a few questions here, and we'll try to stick to the 5-minute limits with questions for everybody, including myself.

First, to Dr. Stiglitz, let me just ask you this: In your book, you state that if we consider the total macroeconomic costs of the war, the price tag for a continued presence in Iraq increases from approximately \$3 trillion up to \$5 trillion.

I was wondering if you could expand on how we here in Washington should consider those macroeconomic costs. They don't appear in our budgets, but they do affect our economy and constituents.

I mean, how should we change the way we look at things here, if at all?

Dr. Stiglitz. I think this goes back a little bit to what Scott was saying, that when you're making a decision, there are the direct budgetary costs that you're very aware of that go through your appropriation process, but there are costs to our society and to our economy that are not as obvious.

You look at these other costs, in effect, when you're discussing regulations; you're saying, is a safety regulation worth the costs that it's going to impose? In that case, both the benefits and the costs of the regulation are outside your budget, but you're making a public policy decision and making that judgment.

I think what all of us are saying, in a sense, is that you need to be aware of what those likely costs are going to be. As you look at those costs and say, OK, there may be benefits in the budgetary sense, as well as hard to quantify non-budgetary benefits that you weigh with the budgetary costs.

But in a war, the non-budgetary costs are so much greater that to ignore them is really wrong.

Chairman Schumer. Thank you. You spoke at length in your testimony about how you and your colleague, Linda Bilmes, faced difficulty in getting information from the Defense Department, the Department of Veterans Affairs, and you state repeatedly that you had to rely on Freedom of Information requests to get information.

Can you provide some more details about the specific types of information you had difficulty in obtaining and what can we do, so that the next researcher who comes along and validly wants this information can get it more easily?

Dr. Stiglitz. Probably the most dramatic and perhaps most upsetting data was the number of injuries. When the Department of

Defense releases the number of fatalities, they differentiate between whether the fatalities are hostile or non-hostile.

When it comes to the injuries, they only release the number of hostile injuries, and they get to choose whether a particular injury is hostile. For instance, if you have a convoy and the first vehicle in the convoy gets blown up, that's clearly hostile, but if the second vehicle runs into the first and somebody gets injured, is that just another automobile accident?

They may classify the injury in the second vehicle as not hostile. After all, he didn't actually get injured by an IED or some other weapon.

If a helicopter has to fly at night because it's too dangerous to fly in the day, and he crashes because he's flying at night, that's not hostile, but it would not have occurred had the guy been in his home in New York or Washington.

The Department of Defense has tried to make it difficult to access these non-hostile injury numbers, for the obvious reasons that not only do they not want the American people to feel that there is a greater cost of war than what we've all talked about, but they didn't even want them to know what those costs of the war are in the first place.

One of things I emphasized in my testimony was that there needs to be more systematic procedures to make available not just the budgetary numbers, but also the kinds of things like injuries. We are going to have to pay for those injuries in health care and disability benefits, whether they are hostile or not hostile.

Chairman Schumer. I understand it, and we're going to have to look at that, I think, as a Congress.

Final question to both Dr. Hormats and Dr. Beers: You both talked about—when we talk about the costs of the war, I think most people look at domestic needs because that's the thing that affects the most immediately, but we also have lots of foreign policy needs, which you two focused on.

Could you just—does focusing on the, our weak fiscal position—how does that weaken us in dealing with potential future crises, wherever they may occur? Could you each talk a bit about that?

Dr. Hormats. I'd like to make two points on that, one, to follow up one point that Rand made earlier. He stressed the importance of the global leadership or loss thereof, as a result of this.

One of the things that we can take away from this is that we would have done a lot better in paying for the war and prosecuting the war and in getting legitimacy for the war if we had had a coalition that was anything like the coalition that first George Bush put together in the first Gulf War.

That seems to me one of the lessons, coalition diplomacy in a modern war is critically important. There's a very interesting book about Eisenhower and Marshall called, "Partners in Command." They understood the importance of a successful coalition in winning World War II.

It's just as important today, as Iraq has demonstrated.

The second, in specific response to your question, Mr. Chairman, is that a country that is in a weak financial position has fewer resources to spend on any contingency.

It reduces the resilience of our country to deal with a national security threat, to deal with a pandemic at home, to deal with a terrorist act at home. The weaker we are fiscally and the more in debt we are to ourselves and to the rest of the world, the fewer resources we have to deal with future contingencies, with future wars or future emergencies of any sort.

Forty percent of the debt that has been incurred in this war, is being financed from abroad. You could say, well, that's fine, because it reduces the American people's contribution to the war effort, if one looks at it that way.

But the other part of it is, that makes us more vulnerable, if in fact, some terrible thing should happen here, that money may not be available to us. It's the first time since the Revolution that we have needed to borrow abroad to pay for a war. Then, we had to do it from France and the Netherlands.

This time, let's suppose, heaven forbid, there's an act of terrorism at a point in time where we have this current credit crisis, and we have a big budget deficit that is going to get bigger over the next 10 or 20 years. Because of the war and entitlements and various other things, we're more dependent for Capital on foreigners.

Suppose the economy is disrupted by a terrorist act? Then what happens? Then their confidence in our economy and their willingness to lend us money, deteriorates. The budget deficit skyrockets, because we have to pay for the response to that act of terrorism, in terms of recovery and retaliation, and the dollar goes down, interest rates go up.

The last point is this: One of the things—and Rand also pointed this out—in the book that I've written, I go back and look at a lot of what Bin Laden said.

One of his goals is to “bankrupt” the United States, as he's put it. He concluded that he had bankrupted the Soviet Union in Afghanistan. Their goal is specifically—specifically, they've said it time and time again—to cripple our economy.

And if they see us economically vulnerable because of big budget deficits and high dependence on foreign capital, and a credit crisis at home, that makes them even more emboldened to go after us, because they think they can not only disrupt the United States in a specific way, but really weaken the economy.

Chairman Schumer. Dr. Beers.

Dr. Beers. It's hard to follow that, because you took away several of the points that I was going to make.

[Laughter.]

Dr. Beers. But that's fine. Let just be very specific.

The dollars that are held by China and the dollars that are held by the oil sheiks in the Gulf mean that when our interest is that they should do something differently, our leverage to get them to do something differently is diminished, so, as the cost of the war increases and it is financed by the deficit, our ability to operate in specific leveraged situations is diminished when the holders of those dollars are the people whose behavior we want to change.

Chairman Schumer. Thank you both.

Congressman Paul.

Representative Paul. Thank you very much. I have two very brief comments. First, I think the Founders talked about building

coalitions too, and it was called a declaration of war and then the people would come together.

And I think that's one of our problems is that we don't develop that coalition.

But also, the holders of our dollars, yes, may have some leverage, but we also—you argue that we have leverage on them, but they have leverage on us, just as well, so I think that's a two-way street.

But I want to get back to the question of inflation, with Dr. Stiglitz and Dr. Hormats, about war and inflation, because there is obviously a relationship.

We live in an age where we have a lot of moral hazard, whether it's the building of the housing bubble or whether it's the promise that there will always be a bailout and a rescue. Ultimately, I see the biggest moral hazard as the lender of last resort.

And in many ways, this is what happens if we can't afford the war and we don't tax, and then we start borrowing, interest rates go up. We ask the Fed, you know, to keep interest rates low, and they can't do that other than by expanding the money supply, and that's when we start getting into trouble, because we devalue our currency.

And this is what I think our basic problem is because it's always out there. I've talked a lot about monetary policy over the year, and I have my ideas of what should be done.

But is there anything—do you sort of agree with what I'm saying, that this ultimate lender of last resort to finance war is a problem, and if it is, is there anything you could suggest as to how we could rein this in and not permit this endless creation of credit and deceitful way of financing war?

Because to me, it's so deceitful because it delays the inevitable and it hides the cost, and the innocent suffer.

I would just like to know if either one of you have a suggestion along those lines?

Dr. Stiglitz. I agree with you. What's so unusual about this war is, as you remarked, we haven't seen the inflation so far. Part of the reason is in the way that the war has imposed the cost on the economy, which is that it led to high oil prices.

We were spending lots of money, sending checks abroad to the oil exporters. Normally, spending that much money abroad would have weakened the economy, and it was, in fact, weakening the economy.

So, the Fed and the regulators took on the view, very myopically, let's keep the economy going, and the way to keep the economy going is flood it with liquidity and look the other way when you needed to strengthen regulations on the economy from the increased spending on oil. They did this to offset the deflationary pressure.

And the Fed kept it going, but the point is that there were bills that were going to have to be paid from those huge deficits. The weakness in the economy that we see today is directly related, I believe, to the war, but the other problem is the overhang of the national debt.

It's an overhang in which there's always the risk of trying to inflate that away.

Dr. Hormats. Since Joe won the Nobel Prize and I didn't, I basically agree with everything he said, but I'd just add one point.

And it's really not adding a point, it's just underscoring the point that Joe made, and that is that—and you touched on it, Congressman Paul, in what you said at the outset and just now.

The deferral of the costs here, makes it look at if the war is cheap, but it isn't cheap.

It makes it look to the current generation of taxpayers, like it's not very expensive because we don't suffer any inconvenience. We have not seen much inflation, the interest rate, in part, has been kept low by the Fed and by the foreign capital that's come in, also.

But when you look at the spending that's going to occur to replenish the military costs, to pay for the veterans, to do all the other things that are going to have to be done over the next several decades, and to deal with a number of other programs that also are competing for resources out there, then the cost to the overall economy becomes higher.

Then, what happens to our children? Our children pay higher taxes, or, if they don't pay higher taxes, they have to give up certain Government programs which we take for granted, or there is more borrowing.

All of those things will tend to weaken the economy down the road, and then it puts a lot of pressure on the monetary authorities to try to offset that with more and more monetary creation.

And the problem is this, in a economy people say, "well, we have a very sound economy," and in many ways the structure is very good—very entrepreneurial—we've got a lot of talented people, but we've built a lot of our growth over the last several years on debt—Government debt and individual debt.

Just to give you one number. Borrowing against homes, using your home as an ATM machine, in effect, between mid-2005 and mid-2006, Americans borrowed \$1 trillion against the value of their homes. We call it mortgage equity withdrawal.

These kinds of debt by the Government and by the American household are going to be paid back somewhere down the road. They're not free. That's the problem.

Chairman Schumer. Vice Chair Maloney.

Vice Chair Maloney. Thank you, Mr. Chairman.

Dr. Stiglitz, the Three Trillion Dollar War—your co-author has written an article in Foreign Policy entitled, "Iraq's 100-Year Mortgage." Is that about how long it will take us to pay off this war?

Dr. Stiglitz. The reality probably is it won't be paid off even in a hundred years. The fact is, just going back to what we've already been saying, the increase in national debt as a result of the war will be \$2 trillion, we estimate, by 2017. We have lots of other demands on our budget, and so the tendency will be just to roll it on and hope the Chinese or others are willing to finance the money that we have borrowed.

Let me put it another way. If we didn't finance it now, while we're fighting, through increased taxes, why do we expect that we will raise taxes next year to finance the war that we've just been through?

Vice Chair Maloney. Dr. Beers, this war was supposed to make us safer at home. Has it?

Dr. Beers. I think, based on the analysis—not of me, but a hundred foreign policy experts—the answer to that, overwhelmingly, is no. The strategic environment that we live in today has become more problematic than it was before we entered into Iraq, and as I said in my testimony, our ability to work with others has been diminished, and our attention to our security here at home, while it has improved, still has a very long way to go.

So it is hard to say that we are safer today than we were before our entry into Iraq.

Vice Chair Maloney. Thank you.

We've been called for a 5-minute vote, and I'm going to be leaving shortly. But I can read this in the record.

My last and final question to the panelists is, the Administration has suggested that it wants to maintain a long-term presence in Iraq, but just as before the war began, they are still refusing to give any estimates of what future costs of that presence might be. Our own Committee, the Joint Economic Committee report, estimated that the U.S. economy could incur up to \$1.9 trillion in additional economic costs over the next decade if we, quote, “stay the course” with our current troop commitment in Iraq, as compared to a more rapid withdrawal favored by many House and Senate Democrats.

Dr. Stiglitz, what are the true costs of staying the course in Iraq over the next decade? And Dr. Hormats, can you put this in a historical context for us? How would the length, loss of life, and wounded compare to past conflicts?

And Dr. Beers, can you explain the costs to our military and national security if we stayed the course in Iraq?

Thank you for really a very enlightened testimony today from all of you. Thank you so much.

Dr. Stiglitz. The analysis of what it will cost to stay for another decade really parallels the kind of analysis that we've done here. There's the upfront budgetary cost, the \$12 billion that we are spending a month. Obviously, that could grow if we increase our troop commitments.

Then there is the fact that there are lots of military costs hidden in the Defense Department budget, such as the depreciation of the equipment that has to be replaced. One of the reasons that the operational costs have gone from \$4 billion a month to \$12 billion a month is that we couldn't defer maintenance forever, and we are now paying for some of the maintenance that we deferred at the beginning of the war.

Then there are the costs of the people who are being injured, and these will go on for decades. The longer we are there, the more troops we send to Iraq, the higher the injury rate. And this war has had a ratio of injuries to fatalities of 15 to 1. It's a testimony to modern medicine, but it is a cost to the taxpayer, and our disability benefits do not really measure the loss to these individuals and to their families.

After the budgetary costs, you start looking at the cost to our economy and to our society, and the cost of the injuries, including the opportunity costs that you've been talking about. Finally, you start looking at the macroeconomic costs, the disturbance that it brings to our macroeconomy in a whole variety of ways, including

in the fact that we aren't investing in the infrastructure that we need. That reduces the productivity of our whole private sector. We aren't investing in the research that we ought to be, and that reduces future potential growth of our economy.

So yes, I think those numbers you're talking about are probably conservative.

Dr. Hormats. Just one more thought to add on, just as a little parenthetical note to the last question. The long-term costs of the war—I'll give you a number that's stuck in my mind.

The last war pension that was paid for the Revolution was paid in 1907, because it was paid to dependents of people who fought in the Revolution. So, these things last a very long time.

The second point—there's a notion in this war that the best defense is a good offense, and therefore if we fight in Iraq we won't have to deal with these terrorist issues on the home front. That is what has been troublesome in looking at this.

We have a lot of unmet needs at home—needs that are not being met on the national security front. You talked about our infrastructure. Our infrastructure has been neglected—our physical infrastructure, our public health service, training and equipment for police and firemen and women. These things are really important to dealing with what is going to be a long-term terrorist threat.

Whatever happens in Iraq, that terrorist threat is going to be there for America. If you don't spend the money at home to improve the public health service, to harden up and improve our infrastructures so that bridges don't fall down in Minneapolis—these are the kind of things, these affect our national security too. And yet we're really not addressing a lot of them.

Again, it's a question of priorities, a question of how you allocate resources. The longer we think a good offense is our best defense, the more we're going to neglect what we need to do at home, again for very legitimate national security purposes, so people don't fall through bridges or have dikes destroyed in New Orleans or elsewhere.

Chairman Schumer. Thank you, Dr. Hormats.

Sam Brownback has been very nice. The House has a voice. Congressmen Doggett and Hinchey are each going to ask one quick question. We'd ask the answer to be brief, and then we'll move on to Senator Brownback and Senator Klobuchar.

I'd ask you both to ask the questions seriatim, and then they can answer them together.

Representative Doggett. I'll ask mine because time has expired, and I'll ask my staff and the public to take note of your answer.

Yesterday, as a Member of the House Budget Committee, I questioned Secretary Gordon England in what seemed to me to be very bizarre testimony, that the war might go on for a very long time, but it's impossible to tell us what it will cost after a few months, because I was told we have an unpredictable foe.

As military historians, perhaps you're aware of a time when we haven't had an unpredictable foe, but I'm wondering if you could outline, for the record, any reasons why we can't get a reasonable estimate, for budget purposes, over the next several years as to the cost of this war, or whether this is just part of the pattern of du-

plicity that has characterized the entire handling of the cost of the war.

Thank you.

Chairman Schumer. I'll ask unanimous consent that each of the panelists submit that answer in writing, so that Congressman Doggett and Congressman Hinchey can make their votes. We'll do the same with Congressman Hinchey after he asks his question, can submit in writing as well.

Representative HINCHEY. Before I leave, I want to express my appreciation to all four of you. It's been very interesting and very informative, what you have had to say, and I deeply appreciate your being here, and I'm going to give close examination to your testimony and look at other things that you've written, including the book. So thank you very, very much.

The economic circumstances that we're confronting is just one of the reasons why we should be developing a very serious plan for the withdrawal of our military forces from Iraq over a specific period of time, which would take place very, very quickly. And those economic circumstances are becoming increasingly complex.

One of the things that the Administration says, of course, is that inflation is not really high. And if you look at the numbers they produce, then it's true: inflation is not really high.

But if you look at some other elements—the cost of oil and the cost of food, the cost of energy generally, but particularly the cost of oil and the cost of food—you see the inflation rate goes up much higher. And unless there is a global recession, then the likelihood is that those increases are going to continue, and they are going to continue even more rapidly, depending on the set of circumstances that we're confronting.

That, combined with the general decline in the economy that we're confronting, even though the stock market right now doesn't reflect that decline, nevertheless, there is a very serious decline for the vast majority of people. The cost of living for them has gone up; the ability for them to live is going down.

I think that we may be engaging in that situation of stagflation once again—declining economy, increasing cost of living. And I would appreciate it if you would give us your thoughts on that and what we might do, both to get us out of the situation there in the military context of Iraq as quickly and effectively as possible, and what we need to do to deal with the complexity of these economic circumstances that are going to prevail upon us for an extended period of time.

Again, Mr. Chairman, thank you very much for doing this hearing. And gentlemen, thank you very much for your contribution here. I deeply appreciate it.

Chairman Schumer. Those answers will be submitted in writing, and I'm sure Congressman Hinchey will review them carefully, knowing him as I do since 1974, when we were young assemblymen together.*

We now have two final questioners.

Chairman Bernanke is up in the Banking Committee. I'm supposed to question him. I'm the last one. I waited till the end. So

*The Information to be provided by witnesses was unavailable at press time.

I'm going to let Senator Klobuchar chair the hearing. Senator Brownback goes, then Senator Klobuchar.

I want to thank you gentlemen for your great testimony, and you've helped us move the debate forward. You really have. Thank you.

Senator Brownback.

Senator Brownback. Thank you, Mr. Chairman. Thank you, panelists. I appreciate your presentation.

I want to enter into the record a study done by the State Senate of New York, the Finance Committee, on the financial impact of the World Trade Center attack. And I'd ask unanimous consent, when Senator Klobuchar gets there, to enter this into the record, just on the cost of 9/11.

And they're saying here, and I don't know if anybody will dispute this, but they're saying here that the estimated 3-year cost of 9/11 was \$639.3 billion over 2001, 2002 and 2003. Does anybody dispute that number particularly?

[No response.]

Senator Brownback. Just note the panel, no particular disputing of that number.

Madam Chair, if I could, I'd ask unanimous consent that this study be placed in the record.

Senator Klobuchar [presiding]. It will be placed in the record. Thank you.

Senator Brownback. Thank you very much.

[The study, "Financial Impact of the World Trade Center Attack," appears in the Submissions for the Record on page 71.]

Senator Brownback. Do any of you have a longer estimate of the cost of 9/11 to our economy? Have any of you seen a number on the cost of 9/11 to our economy?

[No response.]

Senator Brownback. I guess the panel would reflect that there's nobody that has that. I've got a 3-year number here.

I would note Bin Laden put out a cost estimate to us of 9/11, and I may be missing his number by a few zeroes. But I think he said it cost him \$500,000. It cost us \$500 billion.

Dr. Hormats. Right.

Senator Brownback. If so, he's a better economist than he is a lot of things, because he's not far off what the New York Senate said in doing that.

Dr. Stiglitz, does your study—which I have not had a chance to review—include the Afghanistan war as well as the Iraq war?

Dr. Stiglitz. We try to break it out. We have both Afghanistan and the Iraq war, and then we divide it.

Senator Brownback. So it does have both of them in it?

Dr. Stiglitz. We identify them separately. The \$3 trillion is for the Iraq war itself.

Senator Brownback. What is your cost for the Afghanistan war?

Dr. Stiglitz. Roughly, the Afghanistan war is 25 percent of the operational cost and about 10 percent of the disability and veterans' costs, the health care costs.

Senator Brownback. Of \$3 trillion? Then you're saying somewhere below a trillion on total costs?

Dr. Stiglitz. Considerably, yes. Because the veterans costs are only about 10 percent, and the operational costs are 25 percent to Afghanistan, 75 percent to Iraq.

Senator Brownback. Are your policy recommendations the same for Afghanistan as they are for Iraq? I mean, you're looking at costs, and you're trying to put a cost analysis on this.

Dr. Stiglitz. Our basic recommendations are more on the policy, for instance, on how you fund the war, not through emergency appropriations. We would agree that that principle would apply to both the Afghanistan and Iraq war. We also address transparency, so that people know what the total costs will be, and the recommendations for both wars are exactly the same on that. Also, we must fully fund the future disability and health care costs for veterans from both wars, so that they aren't made subject to the future Congress' whims and so that we don't create another unfunded entitlement. Those kinds of recommendations are relevant for both Afghanistan and Iraq.

Senator Brownback. What about any sort of military action? This has been not a good investment, I guess is what your analysis is. Would the same analysis apply to Afghanistan on that, that this is the time to kind of—let's end this thing, because this hasn't been good for us economically?

Dr. Stiglitz. No. Let me try to emphasize.

Our analysis was focusing on the cost, and saying that in the end, people are going to have to make their own judgment of the benefits. Some people think there are benefits, some people don't.

Senator Brownback. That's the point I'm wanting to get at. Is your same analysis for Afghanistan the same as it is for Iraq?

Dr. Stiglitz. No, they're quite different, because of the sense of consensus on Afghanistan. For instance, NATO is in Afghanistan. The circumstances of the two wars are different; how we got into Afghanistan was related to the attack of 9/11. Iraq was not related to 9/11.

Senator Brownback. I just wanted to get your assumptions on this. Afghanistan does have higher security value, in your estimate, than Iraq has a higher security value in your estimate.

Dr. Stiglitz. We didn't actually do that kind of security analysis. Clearly, there are differences in the circumstances in Iraq and Afghanistan that could very well lead to a different conclusion.

Senator Brownback. I know I'm over my time, but I just want to be sure I'm clear on that.

You believe there is value in Afghanistan that's not in Iraq?

Dr. Stiglitz. That's right.

Senator Brownback. But you don't quantify that.

Dr. Stiglitz. That's right. We're only looking at the cost, and what we're saying is that anybody engaged in this war has to make a decision whether the benefits are worth those costs. It's very difficult to see the benefits in Iraq and very difficult to see what additional benefits we will gain by staying another 2 years in Iraq. That seems pretty clear.

In Afghanistan, we have a coalition. In Iraq, we've become a coalition of one. NATO is in Afghanistan, so it's a very different situation.

Senator Brownback. But you don't estimate, and I take it nobody on the panel does, the security value of Afghanistan, or the security value of Iraq, if any. Some of you would question whether there's a negative security value. You don't estimate that.

Madam Chair, I'll stay for another round, because I went way over my time. So I'll just wait till you're done to come back to that.

Senator Klobuchar [presiding]. Thank you very much.

Thank you to our panelists. This was, I thought, a very good hearing and helpful to all of us. People often don't want to go through these actual economic costs, but being a graduate of the University of Chicago Law School, this isn't surprising to me. I think it's been very helpful.

As I said, I hear my colleagues, really for the best of intentions, talk about the war as priceless, and talk about vague notions of treasure, and I think it very important that the American people understand exactly what we're talking about.

Dr. Hormats, you were talking about the cost of this war and the cost on the American family. And I was thinking back to in March of 2006, when the Washington Post published a piece on the typical American family and how they're doing right now.

They said that the typical American family had about \$3,800 in the bank. No one had a retirement account. There were no stocks, no bonds, very little equity in the house, and even making over \$43,000 a year, the average American family in 2006 couldn't manage to pay off a \$2,200 credit card balance.

This American family is far different than the families that we saw during World War II, or even the Vietnam War, when our economy was different, when the opportunities were there for these families to get jobs and kind of pull themselves out if they had some temporary credit trouble or money problems. And with the economy slowing, unemployment rising, and the housing market continuing to spiral downward, we can safely say that today's family is in a much worse and more precarious circumstance.

And I agree—if we are going to pay for this war, we all must sacrifice. But at the same time, many middle-class families are in financial ruins, with no safety net. They can barely hold on. I see this all the time in our State.

Aren't we too late to try to spread out the costs of this war? And how can we simultaneously address the need to pay for the war now, with the demands of a looming recession that sits really on the back of the typical American family?

Dr. Hormats. Your point is a very good one. We should have really done this several years ago if we were going to do it. Now, I think, the American family is sacrificing—is in dire straits in many cases. Look at the housing crisis, and look at the fact that people are behind in their credit cards or paying a lot of interest to borrow. We've borrowed a lot of money, and people are feeling very vulnerable.

My point on sacrifice was that it needn't have been through tax increases. It could have been, if people had wanted to hold taxes the same, through giving up certain domestic programs which were not needed and characteristically are cut when you go into war, nonessential domestic spending. That would have been fine. We didn't do that either.

That's my basic point. We could have done one or the other or both, but we didn't do any of them.

The point about the veterans is a point that Joe made, and I very much agree with and discussed in my testimony as well. And that is, someone's going to have to pay for them at some point, because they're going to need health care for a very long time, and it's going to be in the billions and billions of dollars—hundreds of billions, perhaps.

So the question then is, how do we best pay for it? It is sort of an unfunded moral liability—I wouldn't even use the word liability; moral obligation is a better word, unfunded moral obligation. And at some point, we have to figure out how we're going to pay for that.

Again, we can cut other programs to make room in the budget to pay these costs. We can borrow the money, which just raises the Federal debt beyond what it's already going to be, which is going to be quite substantial. Or we can find some way for upper-income people, maybe through a check on their tax form or through a mandatory tax, to pay. It's the first time they haven't ever had to do this.

And you're absolutely right. It may be too late. The reason I mentioned it, and Joe talked about it in his testimony, is it's a reality. We have a moral obligation, and the question is, how do we best fund it? I was providing one idea; it can be done out of general revenues, too, or it can be done by cutting spending. But somehow or another, we have a moral obligation to make sure they get the best health care. For many of them, it's going to be a lifetime of health care, and paying for it is an obligation. How do we do it?

Senator Klobuchar [presiding]. I think that's one of the most miscalculated repercussions from this war. When I was going around our State for the last 2 years, people would come up to me and they clearly had some mental health issues.

They said they'd served in the war. I didn't know if they were telling the truth.

Then I got to Washington and I saw these numbers, where the Pentagon had underestimated the number of people coming back from Iraq and Afghanistan that would need health care.

I think in 2005, four times as many people needed health care as they imagined. So it just wasn't budgeted for.

Dr. Hormats. Frequently these symptoms don't present for several years after a man or woman returns from the battlefield. So you really don't know what the long-term cost is going to be, particularly on psychological considerations.

Senator Klobuchar [presiding]. I think the problem we're struggling with is a lot of these things you're talking about that could help the middle class, that's struggling right now—you know, if we have to look at more unemployment insurance or those kinds of things. That's why I'm of the belief that we need to really talk about rolling back some of the tax cuts for the wealthiest to pay for things.

We won't go into the hedge fund issue, Dr. Hormats. But there are many ways we could consider paying for things that people haven't been willing to do. Dr. Stiglitz, do you want to add anything to this?

Dr. Stiglitz. I agree very much. The point is that already there have been 100,000 returning veterans diagnosed with serious psychological problems, and the numbers will be increasing. Over 263,000 have already gone to a VA hospital. What was so striking was that in 2005, 2006, the VA were still basing their appropriations requests for money on prewar numbers, as if there were going to be no disability payments, no people injured in this war, and this meant that there were not going to be the necessary resources available. Either you crowd out other veterans, or you don't give these veterans the benefits to which they're entitled, or both. You force the cost onto their families. But these costs don't go away. They're going to be there for decades.

One of the issues that we've been discussing is the issue of national security. When you think about national security, one of the questions is: As the world has changed a great deal in the last 15 years, are we spending this money on national security in the best way?

There's a quip that we're spending a lot of money on weapons that don't work against enemies that don't exist.

The fact is that we are spending close to one out of two defense dollars around the world. So the question is, where can we save money?

Thinking more about about how to spend on defense will allow us to spend less on it. The other point that was made is, there's been a lot of waste in the military, including in this war, because of inadequate accountability. The Department of Defense has not passed the kind of scrutiny that businesses must undergo.

Congress passed Sarbanes-Oxley to hold CFOs accountable for their corporations. But we are not holding officials in the Department of Defense accountable for their spending, and there are huge gaps. This is another place where you'll be able to get some funds to help pay for these entitlements.

Senator Klobuchar [presiding]. I have a few questions of Dr. Beers.

I'll wait for my final round here and let Senator Brownback go.

Senator Brownback. Thank you very much, Senator Klobuchar.

If Bin Laden says it costs us \$500 billion, and the New York Senate says it costs us \$600-some billion, it seems like if we haven't been attacked again since 9/11, there is some value to the economy that we haven't been attacked again since 9/11. Dr. Wallsten, would you agree with that?

Dr. Wallsten. Sure, there's value to the economy in that. The question is whether our presence in Iraq is part of that, and I'm not the one to speak on that question, I fear.

Senator Brownback. That's the whole point here, really.

There's clearly value to security. There's clearly value to the economy that we haven't been hit again since 9/11. I'm not saying why that has taken place, but clearly there is high, extraordinary value to that. Is that correct?

Dr. Wallsten. Yes. In fact, I think you and Joe are actually saying the same or very similar things. One of the goals from all of this is security, and the question is how best to achieve it. And are we spending our scarce resources in the most effective way for a

given amount of security? Once we ask that question clearly, then we can try to figure out the right answer.

Senator Brownback. It also seems like we ought to ask the right question there, too. Your analysis, or some of the analysis here would be, OK, the best security answer is for us to pull out of Iraq on some sort of basis right now, and that's the best answer because it cuts our costs and you believe it provides more security. Fair enough.

But isn't there also a realistic possibility that if we pull out of Iraq, that Iraq fails and becomes a terrorist state? And isn't there a reasonable possibility that if we pull out on a slow basis out of Iraq, maybe like we did in Vietnam, that Iraq fails and becomes a satellite of Iran?

Those would seem to be reasonable assumptions, possibilities even, to take place.

Now, I'm not saying that they're going to take place.

But if we're doing an economic analysis, one would take the extremes on either side of it and say, OK, let's say it's going to be a perfectly stable state when we pull out, and so here's what we're going to save by doing this. And there's also a reasonable assumption to say it's going to be a failed, terrorist state if we pull out on a slow basis, and there is a reasonable set of assumptions that we should do based on that.

It looks like to me that we're getting one side of this economic picture here. And if we're doing an economic analysis on this, that we ought to look at these assumptions.

I put that to you—and you guys are all smarter than I am. I readily admit that. I don't have any basis to think differently. But I met a business guy a few months ago. He was the president of a corporation. He said, you know, business people don't know anything—Dr. Hormats, I don't mean to say this to you at all.

Dr. Hormats. That's all right. I've heard it before.

Senator Brownback. But he says, all we're doing is really trying to plan for contingencies down the road, and we make our best guess at this, and that's the way we play the game. Sometimes we win, sometimes we lose.

And you know, that's what we're trying to do here. I don't like war. I don't want my nephew in Iraq or in Afghanistan. I want him home in Kansas.

But you're looking and, OK, I see the world this way.

You see the world that way. And so you've got a set of assumptions here.

I would hope maybe somebody has done the economic assumptions of what does it cost us if Iran takes over Iraq, or if Iraq becomes a terrorist state. There ought to be some economic assumptions based on that side of it, too, just to give kind of a, let's look at the full picture.

Or if you're going to have a security environment that's possibly less secure—now Dr. Beers might say it's going to be more secure. But there's also a reasonable prospect and there are military personnel who believe it's going to be less secure. What's that going to cost us?

So you really get kind of the full range of this, if we're going to do a true economic analysis. And that's where I have some prob-

lems with the hearing overall, frankly. I think we're making one set of assumptions that this is all bad, therefore this is the cost, when we're not looking at really what the full picture—Republican, Democrat, conservative, liberal. We've got a tough problem here, and we've got to figure it out.

I appreciate the economic analysis on it. I think that's good. That puts another picture on it. I just don't think it's complete, and that's what I would hope we could get in trying to make these sort of conclusions.

Senator Klobuchar [presiding]. We seem to have widespread interest in your question. Maybe we can start with Dr. Wallsten and go down.

Senator Brownback. I hope we can get some good answers and recommendations. Maybe you've got people for us to read on that, too.

Dr. Wallsten. I actually think that's a really good point, and why I framed my testimony in the context of cost-benefit analysis, because all of those tools were designed to be forward-looking and to try to incorporate the fact that we're always dealing with uncertainties.

To do something like this, you should get together people who are knowledgeable about the various probabilities involved, and what the likely costs and benefits of those are, and then you can try to come up with what's a sound decision.

Senator Schumer started off the hearing by saying that he believed that we would have to be there 5 years for a 50 percent chance of stability. If you believe that stability is worth something, you could use those numbers to begin some type of calculation, and then we would also know the costs of staying there for that time, and we could begin to see whether that was worthwhile.

I mean, there are lots of other things involved. But that's exactly why we set up this process, and why most regulatory agencies now have to go through that. Everything is always measured with error, but the future is uncertain, and the only way we can make good decisions is by putting together all of the information we have for our best guesses to put probability estimates on things. Then you have the results, and you then feed it into the decision process.

It can't be the only tool, certainly, but I think it's an important one.

Senator Brownback. Has anybody done that, that you know of; any economist done that?

Dr. Wallsten. Like I said, there were estimates, at least one, before the war, where he tried to. And one of the problems with doing this—and I don't want to make it sound easier than it is—is that we're dealing with, as you pointed out, events that can have very high costs but occur with very low probability. We're sort of not very well-equipped to handle that, and that makes it more difficult.

Then, the question again comes back to what Dr. Beers was saying: How do we best reduce those probabilities?

Dr. Beers. That's what I was going to add to this.

You're certainly correct in saying that there is another half, which is, what's the cost of scenarios that are unappealing to the United States as a counter to the cost of remaining in Iraq. But

when you do that, it seems to me you've got to take two points into consideration.

The first is the probability of those scenarios, because you've got to assign some value to whether or not you're likely to experience that. You can then, after you understand the value of that, then you can do that calculation and you can decide whether, against that probability, you want to pay that cost.

But the second thing you have to do, and that's what I was trying to say, is a decision to spend time and effort in Iraq means that you've made the decision not to devote time and effort to dealing with other foreign policy problems as well. And if you're going to go down that road, then you also have to look at the probability of things getting worse in other locations around the world, and the cost of dealing with that.

The one that you have been particularly concerned with is, what could happen with respect to Iran? And I think that's a very serious question, and what are the costs downstream if we're unable to change some of the actions that are happening in Iran that might affect American security in the future?

We have to weigh those and decide what we're prepared to do. Not all of it is in economic costs—what we're prepared to do in order to prevent Iran, for example, from acquiring weapons of mass destruction. Or what can we do that will reduce the likelihood that they will acquire weapons of mass destruction? And the answer to that may be diplomacy, not necessarily the use of force, or sanctions.

Senator Klobuchar [presiding]. Dr. Hormats.

Dr. Hormats. I think you've asked a very legitimate question, and it should be looked at along with a whole panoply of other issues that we've been describing. I would just like to make two basic points.

The position I'm taking is not that economic issues are or should be the determinative factor in whether we stay or go in Iraq, or what the mission level of our troops ought to be. That needs to be based primarily on national security issues, foreign policy issues, the questions of the future stability of Iraq, questions of the future stability of the Middle East, and the broader opportunity cost issues that Rand has just discussed.

My basic point is that in making these decisions, we should be looking at the resource costs, along with other implications of various outcomes. So I see this as one input, but it's been a neglected one.

In the outset of the war, when the decision was made, recognizing it was a war of choice, we didn't look at all the resource implications, both in terms of direct resource drains on our system and the broader, longer-term implications that have been discussed. We may have made the decision to go in anyway, but at least we should have weighed the cost more carefully, and in a more considered way.

The second question is, once we decided going to war was the right thing to do, or as we were considering whether or not it was a good thing to do, how do we pay for it in a responsible fashion? From the history of how we've paid for the wars in the past, other Administrations have concluded that it was not a wise thing to bor-

row the entire cost of the war. No Administration has ever concluded that.

So they've all debated, over a period of time, what portion of the war should be paid for by borrowing, and what portion through lower spending in other areas, and what portion through higher taxes. When you embark on a war of choice and even a war of necessity you still need to make those calculations. And we didn't do that in a thoughtful way.

Whether we should stay, what level our troop commitment ought to be, what its mission ought to be—that involves things other than economics, but economics should be a component. And as you say, the pluses and the minuses of failure and success have economic implications as well.

They should be weighed, I agree with that entirely, to have a thoughtful debate with an informed public.

But the public hasn't been informed, because the debate hasn't been a very open one. It's been a very closed one, and we need to do better in the future. That's my basic conclusion.

Senator Klobuchar [presiding]. Thank you.

Dr. Stiglitz.

Dr. Stiglitz. Briefly, three points. First, you're absolutely right that there are a lot of risks, and much of what we have been discussing concerns risk management. But one has to look at not just the risk here, in Iraq, but risk globally. We face global security risks, but is spending all of these resources in Iraq the best way to manage these global risks?

That brings me to the second question: How do you frame this particular decision about withdrawal from Iraq? The question is first, if we leave now versus if we leave, say, in 4 years, what will be the probability of that changing stability? Those are the kinds of judgments that will have to be made by security experts. It could be very little, it could be a great deal, both in the probability and the value.

But in making the judgment, you have to evaluate that change in the stability in light of the costs. It may be disastrous if we leave now, it may be disastrous if we leave in 4 years. It may be wonderful if we leave now or in 4 years. There are differences of view.

But we must ask, how much extra will it cost us to stay in Iraq for another 4 years? Up front, every month is costing us \$12 billion. That's up front. And then there are all the other costs that probably double that. And then there are costs to the global economy.

So you have to say, if you're going to stay another 4 years, is it worth that change in the probability of stability? That comes to the third point—given the opportunity costs, is another \$2 trillion worth that uncertain change in stability, given all the other problems we are facing, including in the security field?

Let me emphasize, it's not just the opportunity costs in terms of dollars, but the focus on the war. While we were focusing on weapons of mass destruction that did not exist in Iraq, another country joined the nuclear club—North Korea—because, arguably, we weren't focusing on it, arguably. So there are security costs of focusing on the wrong thing.

Senator Brownback. Maybe that can be your next Nobel Prize. But I would hope you could do a complete analysis on this, because

otherwise it just kind of looks partisan. Because there is value to security. You all agree with that. Certainly people from New York City know that there's value to this. I would just hope maybe you'd look at that.

You've been very patient. Thank you very much, Senator.

Senator Klobuchar [presiding]. Senator Brownback's my neighbor in the Hart Building, so.

I just want to explore this a little bit more with you, Dr. Beers. Senator Brownback's point seems to be, well, we need a fuller analysis. And I think what you've done today is incredibly helpful with showing the economic repercussions domestically, and he's talked about the fact that there's security issues that should be taken into account.

I wonder, Dr. Beers, if you could just elaborate a bit on—just talk about some of these issues with some of these other countries, with this global view from Kosovo to Pakistan, Kenya. I always use the example of Lebanon.

Maybe if we'd put just a fraction of the money from Iraq into Lebanon, we wouldn't have what we saw with Hezbollah and what happened with Israel, if we'd helped some of these fledgling democracies with just a fraction of the money that we spent in Iraq.

So could you talk about what you see as the opportunity costs and, because we were putting so much attention and focus on Iraq, what we could have done with these other countries?

Dr. Beers. Yes, and thank you for the opportunity to talk about that.

Let me do a couple of things with respect to Iraq, and then come back and do some work on a variety, but not exhaustive list, of what those other opportunities were.

With respect to Iraq, if the level of troops in Iraq remains 140,000, which is what the joint staff is saying is likely to be the case through the end of the surge and for an indefinite period after that—if the number remains at 140,000, it basically means that we cannot sustain an increase of U.S. forces in Afghanistan, despite the fact that the commander of U.S. Central Command believes that we need to do that, and the Secretary of Defense does as well.

If the level of troops in Iraq goes down, but not below 90,000, we cannot begin to reconstitute our military. We will not deal with any of the readiness problems, and we will still have to find ways to rob Peter to pay Paul to keep those troop levels in the field. It will mean that the dwell time—that is, the time that U.S. forces come home before they have to go out again—will continue to exceed the length of their tours. And so we will have the continued effect on America's military at roughly that level. If you go below that, you can begin to think about some of those savings.

But I think it's important to just think in rough terms that that's what the consequences are about the level of U.S. presence for any extended period of time.

I've talked about Bin Laden. Let me talk about Afghanistan. The fact that the United States has only been prepared to work in Afghanistan as a secondary theater has meant, one, that the government in Kabul has been unable to actually become the true government of Afghanistan. The Afghan security forces who could have been mentored by the United States and an increased NATO pres-

ence—because NATO would be more willing to be at higher levels in Afghanistan if their publics didn't conflate being in Afghanistan with being in Iraq, and I think that Secretary Gates has made that clear when he has sought to increase troop levels in Afghanistan from our NATO allies.

So it's both a question of what they could do on their own for security, but also what they could do in mentoring Afghan security forces so that they would be in a better position to take over those missions and our mission in Afghanistan. Our NATO mission in Afghanistan could then even begin to think about reducing, which we're not in a position to be able to do today, and are unlikely to be in a position to do at this point in time and for the foreseeable future.

With respect to Pakistan, our reliance on General Musharraf, who was seen as a reformer when he entered power, and throughout Prime Minister Sharif, who was regarded as an exceedingly corrupt leader, our dependence on General Musharraf, as he descended further, further and further into becoming an autocrat and reflective of some of the corruption that the army had been untainted with before Sharif was thrown out, has meant that we failed effectively to anticipate and deal with the burgeoning political crisis in Pakistan, and have remedies if you will to work with the people of Pakistan rather than just the Musharraf government.

So that, one, the instability that has resulted from terrorist attacks; but two, the instability that has resulted from civil society believing that they didn't have a role in the government, has left us with a situation in which we don't know where the political situation is going to go. The election was good. The talk of a coalition government between the two leading political parties is good. But the situation is still very problematic.

Lebanon—a wonderful event there when the Syrians were forced to leave Lebanon. No follow-up other than to cheer them on, leaving us in effect with a situation that then blew up later on when the Israelis went into Lebanon after Hezbollah and created an even more turbulent situation there. We, who have normally sought to end hostilities almost immediately when they have occurred in that region of the world—because the longer the hostilities have gone on, the more instability has resulted—were unwilling or unable to intervene with the Israelis and the government of Lebanon to try to stop those hostilities immediately.

The government of Turkey is now in a state of incursion, intervention or occupation in northern Iraq because we were inattentive to their needs and concerns about the PKK that existed in northern Iraq, because we were focused on Baghdad and Anbar and the security concerns and problems that we were facing down there, when we should have been working with our Turkish allies to keep their situation from getting out of control.

And then on to places like Kenya and Darfur and West Africa to Indonesia and the Philippines, and other places where Al Qaeda and the forces of instability are active and we are unable to devote the time, effort and cooperation with those governments—who, by and large, would be prepared to work with us if we had the time and effort and resources to be able to intervene in those; and, if we

were not in Iraq, have a reasonable expectation that others would help us in doing that.

Thank you.

Senator Klobuchar [presiding]. Thank you, Dr. Beers, for that thorough answer. I appreciate it.

One last question. We had a hearing a few weeks ago with this Committee on sovereign wealth fund investments.

And with our housing market crumbling and more and more of our U.S. companies turning to oil-rich countries, which continue to flourish as these oil prices rise, do you see any danger in the surge of foreign investment in terms of our national security?

Dr. Beers. The Committee on Foreign Investment in the United States was established particularly and specifically to look at those very issues. It seems to me that the activities of that committee—and Bob, you can talk to this one probably better than I can—are part and parcel of, I think, our security considerations about what is an appropriate investment in the United States from a security perspective, as well as from an economic perspective. And those kinds of discussions ought to be available in some kind of public fashion and, I would hope, in consultation with the Congress of the United States. Because they obviously have both an economic and a security effect.

But I want to give Bob the floor on that.

Senator Klobuchar [presiding.] Dr. Hormats.

Dr. Hormats. I think Rand's put it very well. Just let me add one point.

There's been concern expressed in some quarters, and your question reflects it, about sovereign wealth funds, and broader dependence on foreign capital. It's important to have a dialog with the American people, and certainly within the halls of this Congress, on this topic.

I think Americans don't fully understand how dependent this country has come to be on foreign capital. Now one can regard it as a good or a bad thing.

I'm not going to get into that at this point, because there are different people who perceive it differently.

I would make a more fundamental point—that it is a mathematical necessity for a country that has a very low savings rate—the household savings rate is very low; in some quarters it's been negative. The Government is borrowing, and it's going to borrow a lot more over the course of the next several decades.

A country with low savings rates that consumes a great deal, in part based on borrowing against homes or credit cards or whatever, and a country that has a huge appetite for imported oil—60 percent of our oil comes from abroad—is going to depend more and more on foreign capital to fuel our capitalist economy. If we don't generate the savings to invest in this country, then we will have to get the money from countries that have a higher savings rate. And those countries are mostly emerging market economies, and some oil countries, that have very high savings rates.

We have it fully within our capability of reducing this dependence on foreign capital for those who are concerned about it by raising our savings rate, not borrowing as much to consume, reducing our dependence on imported oil, and running tighter fiscal policy.

And I don't think that broad debate has really been engaged very much.

It's easy to look outside and say, there's this problem.

It's much more difficult to look internally and say, what can we do if we're concerned about this problem.

I would hope that this Committee, which is in a perfect position to address this issue, might do so at some point in the future, because it's a broad issue, and we're only going to get more dependent because our savings rate is low. We may borrow a little less now because of this housing crisis, but still we have a very chronically low savings rate.

Senator Klobuchar [presiding]. One last answer, Dr. Stiglitz.

Dr. Stiglitz. I agree with everything that's been said so far. I just want to add two points.

The Iraq war has contributed to the dependency, or to the nature of the problem, in two ways. One, because we financed the war entirely by deficits, it has meant that we've had to borrow more. And second, by driving up the price of oil, it's created a liquid source of funds outside the United States. We weren't saving and they had the money when we needed it.

It's an inevitable consequence of what had gone on before. But the second point I want to make is, a lot of the way the discussion has gone on about dealing with the sovereign wealth funds I find inadequate, in the following sense. The major discussion has focused on increasing transparency, asking the sovereign wealth funds: Will you act in a commercially sound way? And they say: Trust us, we'll be good.

It seems to me a little bit naive, on the one hand. And second, asking transparency of the sovereign wealth funds while we maintain non-transparency of hedge funds only encourages sovereign wealth funds to invest through hedge funds and offshore centers, because we don't know who owns a lot of the hedge funds.

If you're concerned about transparency, the issue has to be dealt with in a systemic way. You can't just pick out a little piece and say: We're going to make that transparent. If there are non-transparent parts of the financial system, they'll go through the non-transparent parts.

What is good about this recent debate is that it highlights our belief that we have an inadequate regulatory structure that is not up to the task of dealing with some of the risks that might be posed. But so far, the discussion has not addressed how we might really adequately regulate in an effective way.

Senator Klobuchar [presiding]. Thank you, Dr. Stiglitz.

I want to thank all our witnesses for your professional and thoughtful testimony. I also want to thank the people here for the hearing. I know this is a very emotional and heartfelt issue for so many, and I want to thank you for the respect that you showed all of our witnesses here. Because as you know, we talk about this a lot in terms of, as I do, the people we know and we see, and the families that have been touched by this war.

But I think it's very important, and this is why we have this hearing today, that we also step back and look at the actual costs. And I think we've heard a lot about, not just the obvious costs of going into war and the money that has been lost because of a lack

of accountability, but also on the debt and what's happening there, and the price of oil—as Mr. Beers has pointed out, our standing in the world and what that's done in terms of opportunity costs of helping with other countries.

So I appreciate this far-ranging discussion, and the willingness of our panelists to try to step in and put some price tags on something that people never really want to put a price tag on.

Thank you very much. The hearing is adjourned.

[Whereupon, at 12:25 p.m., the hearing in the above-entitled matter was adjourned.]

SUBMISSIONS FOR THE RECORD



JOINT ECONOMIC COMMITTEE
 SENATOR CHARLES E. SCHUMER, CHAIRMAN
 REPRESENTATIVE CAROLYN B. MALONEY, VICE CHAIR



PREPARED STATEMENT OF SENATOR CHARLES E. SCHUMER, CHAIRMAN

Good morning. I'd like to thank you for coming to our Joint Economic Committee hearing today on the costs of the war in Iraq. This is a contentious topic, so I will ask our audience at the outset to be respectful of the witnesses, their opinions, and the committee as we proceed today.

We have a very distinguished panel including:

Professor Joseph Stiglitz, a Nobel Laureate economist;
 Robert Hormats, a former National Security Council adviser under both Democratic and Republican Presidents and a co-Chairman at Goldman Sachs International;
 Rand Beers, the president of the National Security Network and also a former NSC adviser; and
 Scott Wallsten, an economist and formerly of the American Enterprise Institute.

I would like to take a few moments to talk about the war, its costs, and what I believe is a turning point in our argument against this war. Then I will recognize our members for opening statements and formally introduce our panel.

The case against this war has been building for a long time. Too many young American men and women have given their lives, or have suffered terrible, life-altering injuries, with little to show for their sacrifice. The American people are baffled by the lack of political progress, despite the good work of our troops. And now, Americans are trying to comprehend the eye-popping dollar figures that this war is costing our budget and our economy.

It is becoming clear to all Americans—Republicans, Democrats and Independents that by continuing to spend huge amounts in Iraq we are prevented from spending on important goals and vital needs here at home.

So the turning point is this: the lack of progress, particularly on the political front, continues. The tragic loss of life continues. But the cost of the war and the inability to use those funds to help us here at home and to properly go after the nexus of terror, which is to the east—in Pakistan and Iran—has become the clinching argument that we must, quickly and soon, change the course of this war in Iraq.

I went to Iraq over New Year's. I spent time with our soldiers. They're wonderful. They're awe-inspiring—from the private I met just out of a Queens high school who had enlisted 8 months previously and who had been in Iraq only 3 weeks, to the majors and colonels who had served 10 years in the Army or the Marines and had made the military their life's work. All of them see a greater good than just themselves. I spent time with General Petraeus and General Odierno. There's no doubt they are fine, intelligent, good people.

When I went to Iraq, I assured our soldiers, from the privates to the generals, that one good thing that would come out of this war is that the esteem in which we hold both the military and our soldiers would be greater than when the war started. This is far different from the Vietnam War, one of the more disgraceful times in America, when our soldiers were often vilified for serving their country.

But after leaving Iraq, I came to this conclusion. Even if we were to follow general Petraeus' game plan, which involves not just military success and security but winning the hearts and minds of the people, it would take us a minimum of 5 years and even then, have only about a 50 percent chance of success of bringing stability to Iraq—not democracy but just stability to large portions of the country.

That's not the military's fault and that's not America's fault. That's because of the age-old enmities within Iraq—Sunnis, Shiites, and Kurds—and then within the groups themselves—that make it very hard to create long-term stability without a permanent at-large structure of troops.

We have too many pressing national security and economic priorities that require the attention, energy and resources that we are spending on a policy in Iraq that has too high a risk of failure.

Our education system is declining. Our health care system doesn't cover too many people. We are paying \$3.30 for gas because we don't have an energy policy. And if your goals are primarily foreign policy, wouldn't our time and effort be better spent focusing on the dangerous triangle composed of Pakistan, Iran, and Afghanistan, not Iraq?

We must ask ourselves, is it worth spending trillions of dollars on such an uncertain and unpredictable outcome?

The cost of the war has become the 800 billion dollar gorilla in the room. The backbreaking costs of this war to American families, the Federal budget, and the entire economy are beyond measure in many ways, and it is becoming one of the first things after the loss of life that people think and talk about.

A report issued by the majority staff of this committee estimated that the total costs of the war will double what the Administration has spent directly on the war alone—\$1.3 trillion through 2008, and that is a conservative estimate.

According to budget and Iraq spending figures, for the amount the Bush Administration wants to spend PER DAY in Iraq, over \$430 million, we could:

- Enroll an additional 58,000 children in Head Start per year;
- Put an additional 8,900 police officers on the streets per year;
- Provide health insurance for 329,200 low-income children through CHIP per year;
- Hire another 10,700 Border patrol agents per year;
- Make college more affordable for 163,700 students through Pell Grants per year; and
- Help nearly 260,000 American families to keep their homes with foreclosure prevention counseling this year.

In the fiscal year 2008 budget, we put \$159 Billion into Iraq:

- That doubles our entire domestic transportation spending to fix roads and bridges of \$80 billion.
- It dwarfs all the funds we provide to the National Institutes of Health to discover cures for diseases like cancer and diabetes—\$29 billion.
- Iraq spending is seven times our spending to help young Americans get a college education—\$22 billion.
- And spending in Iraq is 30 times greater than what we set aside to ensure the health of every single American child—\$5 billion.

The costs are mountainous, and in this changing world where we have to fight to keep America No. 1, we cannot afford such costs—despite the great efforts that our soldiers are putting into Iraq.

I've read the testimony from Professor Stiglitz. And we are grateful to have him here before his new book comes out. His book's title speaks for itself—"The \$3 Trillion War."

I was dismayed to learn that Professor Stiglitz had trouble getting information from the government about what this war is costing us, particularly from the Pentagon and the Veterans Administration.

I plan to ask the Senator Levin, who chairs the Senate Armed Services Committee, to work with me to make sure this administration is transparent and forthcoming about the billions in taxpayers' money that we are spending going forward.

Professor Stiglitz estimates that conservatively, this war could cost \$3 Trillion for budget costs alone—and that is TRILLION with a "T." These estimates make our JEC estimates seem small. His higher estimates of the total economic costs dwarf all other estimates at up to 5 trillion.

So we desperately need a change of course in Iraq. We can't continue to police a civil war built on age-old enmities of the various factions in Iraq. We can't afford the costs, which are increasing exponentially according to expert economists. And we can't allow this skyrocketing spending in Iraq to displace other very real domestic and foreign policy priorities.

History will look upon this Iraq War in two ways. It will admire the bravery of our soldiers, from the privates to the generals; and it will be amazed at the mistakes made by this Administration in starting and continuing this war, for far too long.

CONGRESS OF THE UNITED STATES

**JOINT ECONOMIC COMMITTEE**

**Congressman Jim Saxton
Ranking Republican Member**

PREPARED STATEMENT OF REPRESENTATIVE JIM SAXTON, RANKING MINORITY

I would like to join in welcoming the witnesses appearing before the Joint Economic Committee this morning.

The Iraq War obviously has many dimensions including foreign policy, defense policy, and terrorism policy. While debate about past policies in Iraq will continue, the most important question facing policymakers is: What should U.S. policy in Iraq be now and in the future? Since the implementation of the surge strategy in Iraq, the military situation has improved dramatically, as noted by a variety of independent experts from the Brookings Institution to the American Enterprise Institute, and publications such as the *Washington Post*. A recent *Washington Post* editorial urged critics of the war to take the success of the surge into account in setting future policy.

However, another attempt to force a hasty retreat from Iraq is now underway, following the many failures earlier in this Congress. Now that the surge is proving successful, a quick exit from Iraq would be especially costly. The virtually immediate withdrawal advocated by some politicians is not militarily feasible, but even a premature withdrawal could produce immense costs.

For example, if the U.S. withdrew quickly, the biggest winners would include terrorists and the Iranian regime that is a designated state sponsor of terrorism. Iranian influence would further spread in Iraq, potentially expanding Iranian military influence in the Persian Gulf including the Strait of Hormuz, and leading to Iranian control of significant Iraqi oil resources. Iran has already threatened to cutoff Western oil supplies, and in such a situation would be well positioned to act on such a threat.

Consider also the scenario that a rapid U.S. pullout could lead to civil war in Iraq, drawing in surrounding nations and leading to a regional conflagration. This unfortunately is not a remote possibility but something that must be considered. The economic and potential military costs of this outcome to the U.S. and its allies would be enormous.

All wars impose costs in terms of life and treasure, and the Iraq War is no exception. These costs must be considered as the U.S. weighs its options in Iraq. We also must consider the fact that there have been no terrorist attacks such as 9/11 following the U.S. intervention in Afghanistan and Iraq that disrupted the Taliban and Al Qaida terrorist networks. The benefits of preventing a second or third attack on the scale of 9/11 are very high in both human and economic terms, and failure to do so would be very costly indeed.

In determining future policy, we have to consider whether the situation in Iraq is improving significantly as well as the costs and benefits of our various policy options. As economic costs and benefits are considered, it is important to keep in mind that estimates will range widely because they are necessarily based on questionable data, a variety of assumptions, and speculation about related events. As Dr. Wallsten has warned, "the data are not of high quality . . . and . . . each calculation requires several assumptions." He also has pointed out that even meticulous cost estimates "contain a great deal of error," and thus such analysis "cannot determine whether the benefits of the war exceed the costs." I would note that important elements of Dr. Wallsten's work are also incorporated into Dr. Stiglitz's research, which shares the same limitations.

In their 2005 paper, Dr. Wallsten and a coauthor acknowledge the "inherent imprecision" of war cost estimates but provide a significant "analytical framework for the policy debate." It is important to repeat their warning that this "inherent imprecision" makes it impossible to determine the relative costs and benefits of the Iraq War.

In closing, I would note an article in the *Washington Post* last week covers the new attack advertising on the Iraq War sponsored by the Democratic Senatorial Campaign Committee. I would like to think that the timing of this ad campaign, this hearing, and the Iraq pullout vote is a remarkable coincidence, but others may draw different conclusions.



JOINT ECONOMIC COMMITTEE
 SENATOR CHARLES E. SCHUMER, CHAIRMAN
 REPRESENTATIVE CAROLYN B. MALONEY, VICE CHAIR



PREPARED STATEMENT OF REPRESENTATIVE CAROLYN MALONEY, VICE CHAIR

Good morning. I would like to thank Chairman Schumer for holding this hearing to examine the economic costs of the Iraq war. I want to welcome our distinguished panel and thank them for testifying here today.

Over the past 5 years, the President has requested some \$665 billion from Congress to fund the war in Iraq. The more than \$180 billion that the President wants the government to spend on Iraq just this year, including interest on the war debt, totals almost half a billion dollars a day.

But the untold story—one every American needs to hear—is that the costs of this war go well beyond these budget numbers. At my request, last year the Joint Economic Committee prepared a report showing that if the President's 2008 funding request is approved, the full economic cost of the war will total \$1.3 trillion just by the end of the year. This figure includes the "hidden costs" of deficit financing, the future care of our wounded veterans, and disruption in oil markets. And if the war continues, the costs will only mount higher. In his new book, Dr. Stiglitz estimates that the total economic price tag for the war could reach \$3 trillion to \$5 trillion over the next decade if we remain in Iraq.

The numbers may feel abstract, but the costs are real. The burden of war debt handed down to our children is real—it's been called the Iraq 100-year mortgage. The lost opportunities to invest here at home in jobs, green technologies, roads and bridges, health care and education are real. And, the nearly 4,000 lives lost are real. We are all paying for the colossal costs of this war one way or another.

Last year alone, the President asked Congress to spend more on the Iraq war than the \$130 billion our nation spends annually on the entire American road and highway system. At a time when our levees and bridges are crumbling, we cannot afford to stop investing in our infrastructure. And the President has been squabbling with Congress about money for children's health care, when about 3 months' worth of Iraq war spending would have covered the entire 5-year Children's Health Insurance Program funding increase he vetoed last year.

The administration is reportedly negotiating for an indefinite U.S. troop presence in Iraq. We know we cannot afford the continued loss of life. The economic costs have also become unbearable. The JEC has estimated that the difference between "staying the course" with our current troop commitment in Iraq versus a more rapid draw down favored by many Congressional Democrats is about \$1.8 trillion in additional economic costs over the next decade.

That's above and beyond what we've already spent on the war, and it's money that will continue to be diverted from important national priorities.

A productive debate over the long-term economic impact of the war and its cost to future generations is long overdue. It's no surprise, however, that this is a debate the Bush administration would rather hide from.

OMB Director Nussle took issue with our JEC report last year. Chairman Schumer and I wrote to invite him to appear before this Committee to present the Administration's estimates of what the full economic costs of the Iraq war have been so far, and will be going forward. Not surprisingly, Director Nussle has not responded to our open invitation. I want to call on the Administration to produce their own estimates, as we and many of our witnesses have done, and appear before this committee to have a productive dialog about this critical issue facing our nation.

Mr. Chairman, thank you for holding this important hearing.

PREPARED STATEMENT OF REPRESENTATIVE RON PAUL

Mr. Chairman,

I thank you for calling a hearing on this very important topic. In recent months the undeclared war in Iraq seems not to have been on the minds of most Americans. News of the violence and deprivation which ordinary Iraqis are forced to deal with on a daily basis rarely makes it to the front pages. Instead, we read in the newspapers numerous slanted stories about the how the surge is succeeding and reducing violence. Never does anyone dare to discuss the costs of the war or its implications.

There are the direct costs of the war, the costs of maintaining bases, providing food, water, and supplies, which the administration vastly underestimated before embarking on their quest in Iraq. These costs run into the tens of billions of dollars per month, and I shudder to think what the total direct costs will add up to when we finally pull out.

Then there are the opportunity costs, those which decisionmakers in Washington almost never discuss. Imagine that the war in Iraq had never happened, and the hundreds of billions of dollars we have spent so far were still in the hands of taxpayers and businesses. How many jobs could have been created, how much money could have been saved, invested, and put to productive use?

Unfortunately, it appears too many policymakers in Washington still cling to the broken window fallacy, long since discredited by the 19th century French economist Frederic Bastiat, that destruction is a good thing because jobs are created to rebuild what is destroyed. This pernicious fallacy is unfortunately widespread in our society today because those in positions of power and influence only recognize what is seen, and ignore what is unseen.

Running a deficit of hundreds of billions of dollars per year in order to fund our misadventure is unsustainable. Eventually those debts must be repaid, but this country is in such poor financial shape that when our creditors come knocking, we will have little with which to pay them. Our imperial system of military bases set up in protectorate states around the world is completely dependent on the continuing willingness of foreigners to finance our deficits. When the credit dries up we will find ourselves in a dire situation. Americans will suffer under a combination of confiscatory taxation, double-digit inflation, and the sale of massive amounts of land and capital goods to our foreign creditors.

The continuation of the war in Iraq will end in disaster for this country. Parallels between the Roman empire and our own are numerous, although our decline and fall will happen far quicker than that of Rome. The current financial crisis has awakened some to the perils that await us, but solutions that address the root of the problem and seek to fix it are nowhere to be found. There must be a sea change in the attitudes and thinking of Americans and their leaders. The welfare-warfare state must be abolished, respect for private property and individual liberties restored, and we must return to the limited-government ideals of our Founding Fathers. Any other course will doom our nation to the dustbin of history.



PREPARED STATEMENT OF SENATOR SAM BROWNBACK

Thank you, Mr. Chairman. When the Committee released the majority staff report “War at Any Price? The Total Economic Costs of the War Beyond the Federal Budget”, Ranking Republican Member Saxton and I questioned much of the methodology and many of the assumptions made in the report.

Before I address those issues, I want express my appreciation for the fact that the Democratic staff of the Committee took the time to sit down with my staff yesterday afternoon to walk through the methodology and assumptions used in the report. One of our initial criticisms was that reports of this nature should include sufficient detail as to data and methods so that other researchers could replicate the results as well as raise questions about the analysis.

We appreciate knowing how the conclusions were reached. We continue to believe that the report’s methodology and assumptions are, at best, very controversial and debatable. Moreover, by making standard economic assumptions, over \$1 trillion of war costs estimated in the report vanish. With results this sensitive to reasonable changes in economic assumptions, it seems that use of the findings in this report to guide policy would be unwarranted.

As an example of questionable assumptions used in the report, let me note that the report asserts that war costs have been debt financed, and the portion borrowed domestically (60 percent) displaces private investments that would have generated a 7 percent real rate of return which, according to the analysis, seems to be riskless. It would have been more proper to do this evaluation using the risk adjusted rate of return—which, in real terms, would be on the order of maybe 3 percent. In any case, taking the report’s assumptions to heart, we are informed that there seem to be riskless private investment opportunities available that pay 7 percent real returns.

From the report, we also learn that effectively every dollar of government borrowing or tax revenue displaces around two dollars worth of social value. Perhaps we should take this to heart also and begin immediately to cut spending, taxes, and borrowing. Let us allow our private citizens to enjoy the 7 percent real returns that are evidently available to them all.

If the methods and assumptions used in the report are valid to analyze the “true costs” of military operations, those methods and assumptions should also be valid to analyze the “true costs” of many other government spending and taxation programs. The answers arrived at by employing the majority staff report’s methodology and assumptions could give rise to unease among several members of the committee, particularly on the other side of the aisle. Let me use the majority staff report’s approach to address some key questions:

1. Should the present Social Security system be scrapped in favor of a system of personal accounts? According to the report’s methodology, the answer is “yes.”

2. Should the U.S. resist domestic borrowing in favor of borrowing from foreigners? According to the report’s methodology, the answer is “yes.”

3. Do deficit financed tax cuts create a net benefit for the economy? Using the report’s methodology, the answer would be “yes.”

Let me also note that the report totally ignores economic savings and benefits that may have resulted from attacks or disruptions that may have been prevented by our efforts in Iraq and Afghanistan. Note that, according to some estimates, the economic costs to the U.S. associated with the tragic attacks on 9–11 amounted to loss of life, well over half a trillion dollars of economic activity, and millions of lost jobs. The loss of economic activity alone is more than the costs of direct spending in Iraq and Afghanistan to date. If our war efforts prevent another tragedy like 9–11, tremendous benefits are obtained.

We can debate extensively whether and how those unprovoked attacks might have been prevented. Some might argue that by allowing our Defense expenditures as a percent of GDP to fall by nearly 45 percent in the 1990’s from 5.4 percent of GDP to 3.0 percent left us exposed. That may or may not have been a contributing factor. It is clear, however, that the losses were real—real in human costs and real in economic costs. It necessarily follows that preventing future attacks provides benefits

both in economic and human terms. To dismiss out of hand or to ignore potential benefits is an improper approach when undertaking this type of analysis.

Mr. Chairman, I must remark for the record what a coincidence it is that this hearing's scheduling coincides so closely with the Democratic Senatorial Campaign Committee's new anti-Iraq advertising campaign against Senator McCain and incumbent Republican Senators up for re-election.

I look forward to the exchange of views between members of the committee and our witnesses. My staffs more detailed analysis of the problematic nature of the majority reports follows.



February 28, 2008

**DEMOCRAT JEC REPORT HINTS AT EXISTENCE OF A VALUE CREATION
MACHINE
OVER \$1 TRILLION OF ESTIMATED COSTS IN QUESTION**

Using dubious techniques to account for financing costs associated with war efforts, a recent Joint Economic Committee (JEC) Majority report arrives at estimates that overstate costs by as much as \$1.1 trillion.¹

The report released in November 2007 and titled "War at Any Price? The Total Economic Costs of the War Beyond the Federal Budget" contains questionable accounting of "opportunity costs" of funds borrowed by the Federal government for the wars in Iraq and Afghanistan.

Aside from highly debatable estimates of possible economic effects of the wars on the economy stemming from such things as increases in energy prices, the accounting for opportunity costs adds \$1.1 trillion to the budgetary costs associated with direct appropriations for the war. That opportunity cost accounting is controversial and, by making reasonable assumptions, the \$1.1 trillion of additional war costs computed in the JEC Majority's report vanish.

Understanding the Overstatement of War Opportunity Costs

To understand this overstatement, it is useful to review some elementary concepts, highlighted in italics in what follows.

Opportunity Cost—The opportunity cost of using a resource (a good, money, time, etc.) on one activity is the value of the next-most-highly-valued alternative use of that resource.

The JEC Majority's study counts as war costs the dollar value of direct appropriations for war spending. It then adds to that a (highly debatable) value of what could be earned if the government had not borrowed funds for war efforts and some of those funds were used in private investment opportunities to generate future returns. There is, possibly, according to the notion entertained in the study, a "hidden" opportunity

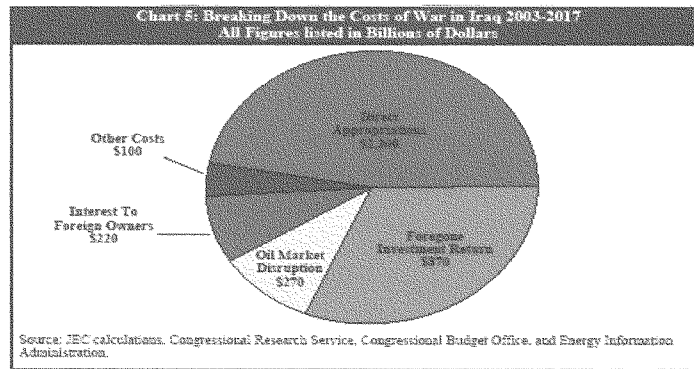
¹ Linda Bilmes and Joseph Stiglitz ("The Economic Cost of the Iraq War: An Appraisal Three Years after the Beginning of the Conflict," 2006 National Bureau of Economic Research Working Paper #12054) use similar techniques to accounting for war financing costs. Nobel Prize winning economist Gary Becker has referred to their techniques as "dubious."

Over \$1 Trillion of Estimated Costs in Question

cost to war spending associated with private investment that is “displaced” by use of currently borrowed funds to finance war spending.²

The magnitude of war costs in the Majority report’s war cost computation that arise because of displaced investment amounts to \$870 billion (“Foregone Investment Return”) plus \$220 billion (“Interest to Foreign Owners”) shown in Chart 5 of the report (reproduced below). That is, the costs associated with displaced investment amount to more than \$1 trillion.

When adding opportunity costs of the use of resources for the war (“Foregone Investment Returns” and “Interest to Foreign Owners”) to direct resource costs (“Direct Appropriations” in the Chart below), war costs are almost doubled relative to consideration of direct resource costs alone³



² In commenting on estimation of war costs in a recent paper by Bilmes and Stiglitz ((Bilmes, Linda and Joseph E. Stiglitz, 2006, “The Economic Cost of the Iraq War: An Appraisal Three Years after the Beginning of the Conflict.”), who account for financing costs associated with debt-financed war spending in much the same way as the accounting used in the JEC Majority report), Professor Gary S. Becker, 1992 Nobel Prize winner in Economic Sciences, writes that:

“They also have “conservative” estimates that include additional interest on government debt, but I do not understand why this should be counted since they already count military spending as a cost.”

In his discussion of war costs, economist William Nordhaus (William D. Nordhaus, 2002, “The Economic Consequences of a War with Iraq,” in *War with Iraq. Costs, Consequences, and Alternatives*, American Academy of Arts & Sciences, Committee on International Security Studies) writes that his estimates of costs “...omit interest costs, which are not appropriate economic costs as they reflect decisions about financing rather than costs.”

³ Interest payments associated with war financing that the JEC Majority’s report assumes are paid to “foreign owners” of debt are regarded entirely as an economic loss. The report does not allow for or analyze any possible exchange rate effects or any possible effects stemming from foreign direct investment or from international trade associated with the interest payments. Evidently, the resource value of interest paid to foreign holders of U.S. government debt simply disappears and is forever lost.

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On page 10 of the JEC Majority's report, we are told that "...the JEC estimates that Iraq-related borrowing between 2003 and 2017 will create an additional income loss of almost \$1.1 trillion in present value to U.S. citizens." In a footnote explaining where that \$1.1 trillion comes from, the report notes that "This is the present value of the lost returns to investment that did no [sic] take place due to the diversion of capital into Iraq war spending, as well as the present value of the post-tax returns to investments that were funded with foreign capital." To try to understand these estimates, we need to consider notions of present value, future value, and discounting.

Present Value (PV) and Future Value (FV): To account for differences in the value of \$1 today and the value of \$1 in some future period, attention must be paid to inflation and to what is often called the "time value of money." Here, for simplicity, we will abstract from inflation by assuming none, since inflation has little bearing on the highly questionable manner in which the JEC Majority accounts for war costs.⁴

The time value of money is simply a reference to interest rates. \$1 today is not the same as \$1 tomorrow. If the interest rate is, for example, 3%, then by taking \$1 today and investing it at a simple annual interest rate of 3%, you could get \$1.03 at the end of the year. So, \$1 today, given a market interest rate of 3%, is equivalent to \$1.03 at the end of the year. Alternatively stated, the future (in one year) value of \$1 is \$1.03 given a 3% interest rate. And, \$1.03 received a year from now is the same, when "discounted" back to the present, as having \$1 today. That is, the present value of \$1.03 received one year from now is \$1 given a 3% "discount rate" (which is the same as the interest rate).

More generally, if the annual simple interest rate available in markets is represented by r , then investment of \$1 (present value) today generates a gross return (future value) of $\$1 \times (1+r)$ at the end of the year. Alternatively, the present value of $\$1 \times (1+r)$ received at the end of the year is \$1 today.

These relations between present and future (one year ahead) values can be summarized by:

A PV of \$1 has a FV of $\$(1+r)$ when the interest rate is r .

A FV of \$1 has a PV of $\left(\frac{\$1}{(1+r)}\right)$ today when the interest rate is r .

Some Simple Truisms:

1. If you borrow and receive \$1 today, and promise to repay the principal along with interest in the future, then the present value (discounting at your borrowing rate) of

⁴ Except that when accounting for interest payments to foreign purchasers of government debt, the report seems to use *nominal interest rates* (i.e., unadjusted for inflation effects on purchasing power) while *real* (i.e., inflation adjusted) *interest rates* are used to account for interest payments and foregone investment effects associated with borrowing from domestic residents.

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your borrowing is \$1 (because the value of \$1 today is the same as $\$(1+r)$ in the future).

2. If the government borrows and receives \$1 today, and promises to repay the principal along with interest in the future, then the present value (discounted at the government's borrowing rate) of the borrowing is \$1.

Yet, according to the JEC Majority's calculation of present value, while number 2 is true, the *social* present value of the government borrowing \$1 today actually *exceeds* \$1. In their calculations, if the government borrows \$1, and promises to repay the principal along with interest in the future, the present value turns out to be *more than* \$1.

How does the JEC Majority magically turn \$1 of borrowed resources into more than \$1 of present social value? Have they discovered a money, wealth, and value creating machine? What's next: gold from water, a perpetual motion machine?

Unfortunately, the Majority's discovery of a wealth creating machine relies on discounting that Nobel Prize winning economist Gary Becker has labeled "dubious."

Suppose that you are considering the purchase of a candy bar that costs \$1 today using a dollar from your family's cookie jar. And suppose that you can borrow or lend money at a simple annual interest rate of 7%.

If you buy the candy bar, you pay the \$1 cost. But, you could have taken that \$1, lent it out (effectively making an investment) at 7%, and received \$1.07 at the end of the year. What is the present value of that foregone loan (investment opportunity)? Using an interest rate of 7%, the present value is $\$1 = \left(\frac{\$1.07}{(1+.07)} \right)$, which is exactly the amount it costs to buy a candy bar.

In that case, using \$1 to buy a candy bar involves foregoing a possible investment return that has a present value of \$1. Either way you look at it, whether valuing the candy bar at its direct cost (the current \$1 purchase price) or at its opportunity cost (the \$1 of present value, when discounting at 7%, foregone by not having made an investment), the cost of the candy bar is \$1.

But, under certain familial circumstances, the foregone investment opportunity would actually end up costing your family more than \$1 of present value.

How? What if your family discounts between today and future periods at a different rate than 7%, maybe 3%? According to opportunities available to your family in markets for borrowing and lending, interest rates are 7%.

Given your familial discount rate of 3%, your family is willing to give up 1 unit of a resource today in exchange for 1.03 units at the end of the year. Anything more than 1.03 would increase family happiness. Anything less will lead to family sadness.

Joint Economic Committee Senate Republicans Senator Sam Brownback, Senior Republican Senator

Over \$1 Trillion of Estimated Costs in Question

Equivalently, your family is willing to give up 1.03 units of resources at the end of the year in exchange for receiving 1 unit today. Any future sacrifice less than 1.03 units at year's end would increase family happiness. Anything more will lead to family sadness.

Note that if you discount \$1.07 at the end of one year using a 7% discount rate, the present value of \$1.07 in one year is \$1 today. If you discount \$1.07 at the end of one year using anything less than a 7% discount rate, you get a present value above \$1. If you discount at your familial discount rate of 3% the \$1.07 that you could earn at the end of the year by foregoing the candy bar purchase and, instead, making a loan, then the present value to your family of what you have foregone is around $\$1.04 = \left(\frac{\$1.07}{(1+.03)} \right)$.

From your family's point of view, buying a \$1 candy bar today actually costs more than \$1. You spent \$1, but you also displace an opportunity to have used that \$1 to make a loan which would have generated a return with present family value of around \$1.04. Netting out the \$1 that you spent on the candy bar, you have foregone providing your family with an extra \$.04 of value, leading to a total effective candy bar cost of \$1.04. Thus, using a JEC Majority-style method of discounting, a \$1 candy bar purchase that you make today actually costs your family \$1.04 of value.

In the JEC Majority's analysis, the social rate of discount is 3% while returns available in private investment opportunities are 7%. An expenditure by government of \$1 today (financed by debt or taxes) will displace a private opportunity to have used that \$1 to generate \$1.07 at the end of the year, the present social value of which (discounting at the social 3% rate of return) is around $\$1.04 = \left(\frac{\$1.07}{(1+.03)} \right)^5$.

When you consider that the JEC Majority report is looking at hundreds of billions of dollars of direct appropriations in their analysis, and foregone returns are compounded over many years, it is easy to see how over \$1 trillion of social value is displaced using their social discounting scheme and assumptions about riskless returns available on private investments.

⁵ The JEC Majority report actually assumes that debt-financed spending of \$1 today will generate a total loss of \$.40, paid to foreign owners of debt, and, for the \$.60 assumed to be borrowed domestically, the discounted (using a 3% rate) value of a foregone stream of net displaced private investment returns that would accrue at a rate of 7% (also discounted using a 3% rate) on that \$.60. Calculating costs in this war (allowing a division between foreign and domestic debt, with differential cost effects) still leads to a \$1 of current government spending generating *more than* \$1 of loss of current social value.

Over \$1 Trillion of Estimated Costs in Question

Government Borrowing in Capital Market Equilibrium

According to the JEC Majority's report, government can borrow at a rate of 3% (based on an observed average of market real yields on government debt). But that borrowing displaces private investment, for which a 7% return is available (based on an average of observed *risky* real yields on private investments).⁶ The 7% returns cannot be taken to be risk-adjusted or riskless rates of return, unless there is some unspecified large market failure or capital markets are out of equilibrium over very long periods of time. If 7% risk-adjusted rates existed on private investments while government debt only promises a rate of return of around 3%, then no one would be purchasing the government debt.

In capital market equilibrium with efficient markets, the risk-adjusted borrowing rate of the government equals the risk-adjusted rate on private investments. If not, and if the rate available on private investments exceeds the rate paid by the government, then investors would shun government debt (driving its price down and interest rate up) and flock to private investment opportunities (driving their prices up and returns down) until an equilibrium exists at which the risk-adjusted government borrowing rate equals that on private investment.

So, How does the JEC Majority Come Up With The Present Value of \$1 of Government Borrowing Actually Representing More Than \$1 of Present Social Value?

The answer comes from assuming that the private-sector rate of return is 7%, that private-sector investment is displaced by government borrowing, and that foregone future private returns (accruing at a 7% rate) should be discounted back to the present at a "social rate of time preference," or discount rate, of 3% (not 7%).⁷

The JEC Majority's methodology is borrowed from work by William Cline (William R. Cline, June 1992, *The Economics of Global Warming*, Institute for International Economics) on analyses of global warming, for which, according to the JEC Majority's report: "There is substantial agreement that this approach is theoretically correct..."

It is debatable how substantial that agreement is, but it is interesting to note that Cline identifies that his method "...would seem the most appropriate for *benefit-cost analysis of global warming (italics added)*." Such analysis involves discounting of benefits and costs of pollution abatement, where benefits and costs can accrue at highly uneven and differential rates across time and where the relevant span of attention is on the order of

⁶ The government borrowing rate is assumed, for simplicity, to be the riskless rate. To the extent that government borrowing involves risk, government debt would trade at a risk premium relative to the underlying riskless rate.

⁷ The approach used in the report converts lost investment into consumption equivalents using a "shadow cost of capital approach." While use of shadow pricing involves many questionable assumptions, the main consequence is to increase the measure of opportunity cost constructed in the JEC Majority's report and, consequently, amplify the report's estimate of war costs that arise from the questionable opportunity cost calculations.

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hundreds or thousands of years. The analysis in the JEC Majority's report, however, involves no possibility of benefits associated with war expenditures, and therefore is not a benefit-cost analysis. Moreover, the relevant horizon in the Majority's report is 15 years at most, not hundreds of years for which Cline has developed his arguments.

Why use 7% as the private-sector investment return and 3% as the social rate of time preference? The JEC Majority's report refers to certain suggestions made by the Office of Management and Budget (OMB) for use in cost-benefit analysis. In defense of the analysis performed in the JEC Majority's report, Rep. Maloney and Sen. Schumer have appealed to OMB Circular No. A-94.⁸ That Circular provides "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs." The JEC Majority's report *does not*, however, follow many of the guidelines set out in Circular A-94:

- The Circular applies to *Benefit-Cost Analysis* (including "Cost-Effectiveness" analysis, which also involves consideration of benefits). The JEC Majority's report calculates costs only, however.
- The Circular identifies, with respect to use of one component of the JEC Majority's analysis, called a "shadow price of capital" approach, that: "To use this method accurately, the analyst must be able to compute how the benefits and costs of a program or project affect the allocation of private consumption and investment. OMB concurrence is required if this method is used in place of the base case discount rate." There was no concurrence between OMB and the JEC Majority, and the JEC Majority's report simply *assumes* that all interest costs associated with war financing derived from domestic sources displace investment.
- The Circular identifies that sensitivity analysis should be performed to determine how sensitive analytical outcomes are to changes in assumptions. The JEC Majority's report performs no sensitivity analysis.
- The Circular identifies that, in performing a benefit-cost analysis: "The analysis should include a statement of the assumptions, the rationale behind them, and a review of their strengths and weaknesses. Key data and results, such as year-by-year estimates of benefits and costs, should be reported to promote independent analysis and review." The JEC Majority's report falls far short on this front. Assumptions are not made clear and little rationale is offered for many of them, let alone discussion of strengths and weaknesses. Key data are not provided, inhibiting independent analysis and review.

⁸ See press release at:

http://maloney.house.gov/index.php?option=com_content&task=view&id=1515&Itemid=61

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Some Perhaps Unpleasant (for the JEC Majority) Implications of the JEC Majority's Analysis

- The U.S. government currently borrows from the Social Security "Trust Funds" to use funds for general government spending. According to the Office of the Chief Actuary of the Social Security System, the effective interest rate for the Old-Age and Survivor's Insurance the Disability Insurance Trust Fund, combined, was 5.25% in 2007. This means that last year, the government borrowed from the Trust Funds at a rate of 5.25%. Subtracting off 2.9% average consumer price inflation during 2007 gives a real, or inflation-adjusted, return of roughly 2.25%.
 - By JEC Majority calculus, Trustees of the Social Security System should be ordered to stop lending to the Federal government and, instead, invest payroll tax revenue at the available real opportunity rate of 7%, well above the 2.25% currently earned by lending to the government. Then, the Social Security system can forego the 2.25% paid by the government on funds borrowed from the Trust Funds, capture that 7% return available on private investments, and increase resources available to retirees.
 - Social value is being foregone by lending payroll tax revenue to the general government rather than allowing it to earn interest in private investment opportunities.
 - Proposals similar to this, which called for allowance of personal retirement accounts where taxpayers could ask that some of their payroll taxes be diverted away from the traditional Social Security system and toward private investments, were deemed to be a "risky scheme" by prominent Democrats. To the contrary, according to the JEC Majority report, such a "risky scheme" is precisely the seemingly riskless alternative available when considering how to use funds that the government borrows for the war effort.
- The JEC Majority's analysis suggests that it could be social-value-enhancing for government to borrow as many dollars as possible at rates below 7%, lend them in the private sector at 7% (the opportunity rate of return assumed by the JEC Majority), and end up with positive net current social value.
 - Yet even Cline, who developed the "methodology" used in the JEC Majority's report, identifies that "...it is by no means clear that a government investment fund could find capital investment projects that would yield the relatively high real rates of return typically supposed for private capital." According to Cline, if a government fund "...invested through financial intermediaries, it would earn no more on a risk-compensated basis than the long-term government bond rate, a return

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much closer to the SRTP [social rate of time preference] than to the rate of return on private capital investment.”

- o Exactly! On a risk adjusted basis, the appropriate discount rate to use for government borrowing *and* for any displaced investment returns associated with that borrowing is a risk-adjusted safe rate of return like the 3% rate used in the JEC Majority’s report to perform social discounting. The risky 7% should *not* be considered the relevant available opportunity return.
- According to the JEC Majority’s report, every marginal dollar borrowed by the U.S. government should be borrowed from abroad. Given the report’s assumptions, interest payments associated with borrowing from abroad “...flow out of the country and constitute an economic cost.” Evidently, those payments simply disappear and do not displace private capital. By contrast, interest payments associated with borrowing domestically displaces private investment leading to “true economic costs” to society that end up being a multiple of the amount of interest payments. Thus, we lose less paying interest to foreign holders of our debt than domestic holders.
- According to JEC Majority calculus, every debt-financed government undertaking has a “true,” or total-economic, cost of roughly \$2. The recent economic stimulus package, for example, scored by the Congressional Budget Office at around \$152 billion, has a true economic cost of around \$304 billion.
 - o For every dollar of proposed additional real government spending, it should now be noted that the true social cost is two dollars of value.
- Taxes on savings should immediately be reduced. This follows from the assumed existence of private investment opportunities that exist in the JEC Majority report which provide risk-adjusted returns of 7%. Since those returns are above the social rate of discount, society is saving too little. We need much more savings to drive the private rates of return down. To accomplish this socially valuable goal, it would be socially desirable to encourage more savings by cutting taxes on savings.
- Government should cut taxes and increase debt, thereby creating additional social value. By cutting taxes on domestic income, there will be a dollar-for-dollar increase in the amount of resources available for private investment, which can earn a 7% return. For each dollar of additional debt, there will be a displacement of only \$.60 of private capital investment. The other \$.40 is funded, according to the JEC Majority report’s assumptions, by foreign holders of U.S. government debt. That \$.40 is lost, but does not displace domestic capital investment.

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- The net result of a \$1 debt-financed tax cut can be calculated as follows. From the tax cut, we get \$1 of added private investment and, from the debt financing, we get a displacement of \$.60 of such private investment, for a net gain of \$.40 of private investment that earns 7% returns. That \$.40 of investment will return, discounting future 7% returns at the social rate of discount of 3%, more than \$.40 of current social present value. Netting out the \$.40 loss present value associated with the foreign investment still leaves us with a gain in current social present value.



Financial Impact of the World Trade Center Attack



Prepared for the New York State Senate Finance Committee

Senator Joseph L. Bruno
Majority Leader and President Pro Tem

Senator Ronald B. Stafford
Chairman, Finance Committee

January 2002

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EXECUTIVE SUMMARY

INTRODUCTION

The degree of damage from the September 11 terrorist attacks on the World Trade Center is unprecedented in the United States. Damage will total at least twice that of the most expensive previous U.S. disaster (Hurricane Andrew in 1992 cost an estimated \$25 billion), and some analysts estimate the total at more than three times greater. Approximately 30% of all the commercial space available in lower Manhattan was destroyed or damaged. And this does not count the additional damage done to the City's infrastructure in Lower Manhattan, to residential properties located there, and to the small business community of retail and personal services that existed to support the financial services firms located there.

This report focuses on the immediate impact of September 11, both to the City and the State of New York. We assess the impact on economic activity for both, as well as the impact on the State's tax revenues. Our focus is on determining the employment impact, particularly on the number of jobs that have left New York State or are likely to leave in the nearby future. During the fourth quarter of 2001 New York State lost an estimated 100,000 jobs. Our analysis centers on the financial services sector in this regard. We also consider the impact to the important tourist and travel sectors of both the City and the State. Using the DRI•WEFA econometric models of New York City and New York State, we estimate the total impact on employment and incomes—this encompasses the direct impacts, the secondary effects they imply, as well as the effects from the national economic recession which has clearly accelerated in the wake of September 11. This preliminary analysis is based on the DRI•WEFA macroeconomic forecast of November 2001, and it will be updated in February 2002.

Our estimates of the reduction of New York State taxes by more than \$3.5 billion over the first 18 months following the attack flow from these estimates. When added to the \$2.5 billion baseline gap projected by the Governor in his last Executive Budget, the State could be facing a \$6.0 billion budget gap. The reduction in personal bonus income and in financial sector profits will have a key impact on the outlook for tax revenues during the next few years. Again, although these reductions were in the cards prior to the attack, the outlook for them has deteriorated since. Finally, we have reviewed the expected impact of the attack on rental income, considering the relocation of firms formerly housed in the WTC environment, the changes in rents they are paying in their new locations, as well as the relocation of some former WTC tenants outside of New York State.

NEW YORK STATE: ESTIMATED TAXPAYER REVENUE IMPACT OF SEPTEMBER 11
State Fiscal Years

	2001-2002	2002-2003	Cumulative Total
Loss of Taxpayer Revenue (Billions)	\$1 112	\$2.421	\$3 533

The Baseline outlook for our analysis was that existing immediately prior to September 11. Thus, the Baseline contains our view of the economic slowdown that existed at that point. In focusing on the impact of September 11, this report documents the additional changes to the outlook precipitated by the terrorist attack itself as well as our revision to our economic

outlook during that period for the U.S., New York State, and New York City. The following charts summarize these impacts.

UNITED STATES: ESTIMATED ECONOMIC IMPACT OF SEPTEMBER 11

	2001	2002	2003	Cumulative Total
Loss of GDP (Billions.)	\$40.8	\$318.3	\$280.2	\$639.3
Loss of Income (Billions)	\$28.1	\$182.4	\$213.7	\$424.2
Loss of Jobs (Millions)	0.3	1.4	2.0	

NEW YORK STATE: ESTIMATED ECONOMIC IMPACT OF SEPTEMBER 11

	2001	2002	2003	Cumulative Total
Loss of Income (Billions)	\$1,971	\$9,101	\$10,885	\$21,957
Loss of Jobs (000)	24.0	78.2	77.5	

NEW YORK CITY: ESTIMATED ECONOMIC IMPACT OF SEPTEMBER 11

	2001	2002	2003	Cumulative Total
Loss of Income (Billions)	\$1,396	\$8,710	\$5,039	\$15,145
Loss of Jobs (000)	17.0	70.0	57.1	

IMPACT ON THE NATIONAL ECONOMY

During the months prior to the attack, the U.S. economy continued to grow slowly, primarily due to the continued enthusiasm of the consumer. Businesses had long since thrown in the towel and it appeared that manufacturing was in a recession. Nonresidential fixed investment had declined at double-digit rates since the first quarter of 2001, and inventory accumulation had turned negative beginning in the first quarter of the year. Despite sharp declines in the measures of consumer confidence, personal consumption continued to grow. After a 4.8% increase in 2000, real personal consumption was on its way to an estimated 3.0% increase for 2001. At the same time, residential investment continued to hold its own. Housing starts in the second quarter totaled an annual rate of 1.621 million units, over 2% above its year earlier level. Through August, the Federal Reserve had cut short-term interest rates seven times for a total of 350 basis points, and DRI•WEFA felt that the economy was on track for a soft landing centered in the third quarter of the year.

The September 11 attack changed all this. Across the U.S., economic activity ground to a halt in the week of the attack, and as the dust settled, it was clear that consumers were in no mood for immediate spending. Retail sales dropped by 1.8% in September, and light vehicle sales fell to an annual rate of 15.8 million units, the lowest monthly sales rate in almost three years. With consumption weakening, business further reduced its investment plans, and it now appears that we are facing a recession that will last through the winter. Real GDP declined by an annual rate of 1.1% in the third quarter, and we expect declines in the 1.6-2.1% range through the first quarter of 2002. For all of 2002, GDP is now expected to decline by \$318.3 billion compared with our pre-September 11th forecast.

We expect the recession to last just over a year, with growth resuming in the second quarter of 2002. As recessions go, it will be a mild one, with a 0.8% peak-to-trough

decline, well below the average postwar recession decline of 2.3%. The recovery will be led by an end to inventory liquidation, with assistance from stepped-up federal spending and monetary stimulus.

The runoff of real nonfarm inventories over the past three quarters is as severe as in any postwar recession. Through the third quarter, inventories are down 10% from the pre-liquidation peak. Before the liquidation ends in the second quarter of 2002, we anticipate that the decumulation will reach 14%—a post-war recession record. By early in 2002, business' ability to fill orders out of inventory will be severely curtailed, forcing manufacturers to add a few additional hours to the weekly production schedule. Income will begin to recover, and as it is spent, more workers will eventually be needed and employment will accelerate.

Even before this, there could be some rehiring in the tourist industry. As jobs and incomes permit, consumers are resuming their normal routines, eating out, going to sporting events, and returning to the skies to travel. In October, real spending on airline travel erased half the September slide, while spending on spectator admissions more than recovered the September loss, as did spending on hotels and motels (business travel still remains down, however, and will until the economy recovers). This will also help buoy the recovery through the winter and into spring.

Consumption as early as October indicated that consumers were not entirely ready to give up the ghost. Spending on durable goods soared a record 13.7% (not annualized) as consumers raced to take advantage of the 0% interest rate financing on light vehicles. Although much of this spending borrowed from purchases that would have otherwise occurred later in 2001 and in early 2002, some of it represented new purchases by buyers unable to resist the sharp drop in financing charges associated with a new vehicle purchase.

We expect that, except for light vehicle spending, consumer spending in the fourth quarter will be flat. Consumer confidence remains relatively high, but declining employment growth and a sharp reduction in year-end bonuses will hold back consumption spending through the holidays and during the early part of 2002. Fortunately, most households hold the bulk of their wealth in their homes. House prices have softened modestly, but still hold up well, as has new home construction and sales. Even so, foreclosures are on the rise and we expect them to continue to increase—a consequence of the easy mortgage terms over the recent several years. Still, housing should remain relatively strong throughout this recession.

Most of the nation's economic weakness centers on business investment. Equipment spending has fallen for five consecutive quarters—something which has not occurred since 1982—and is likely to continue to fall for an additional two quarters at least. The demise of the dot-coms, an excess of communications infrastructure, and general overcapacity in manufacturing industries worldwide have eliminated most incentives to invest until later next year. Between falling investment and sluggish consumer spending, manufacturing activity continues to weaken. This decline in factory output, which has fallen for 14 of the past 16 months, is the steepest since the 1982 recession. By early next year, however, we anticipate that additional production will be necessary to meet even a sluggish order flow as manufacturing inventories run down.

After-tax corporate profits peaked in the fourth quarter of 2000 and have declined steadily since. In our Baseline outlook, profits declined by 14.3% in 2001, but recovered by 6.2% in 2002. With the recession explicitly defined in our Baseline outlook, profits are expected to decline in 2001 by 16.7% and show a further 2.6% next year. The current profit outlook is determined especially by the outlook for manufacturing and financial services. High-tech activity had generated solid profit growth for both businesses during the second half of the 1990s, and both have been adversely affected by the high-tech slowdown. Both sectors will benefit as the recession concludes in the spring of 2002, and profits are expected to

increase once again during the year (although, as noted, not by enough to pull the annual average back above the 2001 level).

Federal spending will also give next year's economy a boost—the 2002 budget contains a huge amount of fiscal stimulus. At the same time the Federal Reserve is still pumping liquidity into the system. At 1.75%, the federal funds target is the lowest in 40 years, and the real rate is close to zero.

The following table details the extent of the attack's impact on the U.S. economy. Compared with our Baseline forecast completed in early September, our Current forecast indicates that GDP will decline in the fourth quarter by \$146.9 billion. That shortfall slides further to a difference of \$318.3 billion for calendar 2002, and to \$280.2 billion in 2003. Although this is a mild recession by historical standards, it has a significant economic impact on our nation's economy:

- Nonagricultural employment declines by 900,000 jobs in the fourth quarter of 2001 and by 2003 are down by two million jobs from what they otherwise would have been.
- Wage and Salary growth is only 1.1% in the fourth quarter of 2001, less than one-quarter of the 4.5% rate forecast in the Baseline outlook. In 2002, wage and salary growth in the Current forecast is 2.6%, less than one-half that in the Baseline. Total personal income growth in the Current forecast follows a similar path, lagging well behind the Baseline outlook.
- The Current forecast for real personal consumption manages only bare-bones growth of 0.2% in the fourth quarter of 2001, and grows in 2002 at a rate that is about one-half its pace in the Baseline forecast. Consumption growth begins to recover in 2003, relative to the Baseline.
- For its part, business remain squeamish about further investment. As a consequence, total investment expenditures drop by 12.5% in 2001Q4 in the Current forecast, down from a decline of 3.3% in the Baseline forecast. Next year, the Current forecast decline is 5.3% relative to a drop of just 0.8% in the Baseline.
- Real inventory accumulation continues through the fourth quarter of 2001 for a drop of 36.1 billion constant dollars. In the Baseline forecast we had anticipated a very modest increase of \$3.4 billion. In the Current outlook, inventory accumulation does not resume until the second half of 2002.
- Demand from net trade also deteriorates with sharp declines in export growth in the Current outlook relative to the Baseline.

IMPACT ON THE NEW YORK CITY ECONOMY

The New York City economy had fared reasonably well until September 11, despite the softening national economy. Retail trade sector employment had been particularly robust, up 5.3% year over year in the second quarter following a 4.5% rise in the first quarter. Total nonagricultural employment growth was strong in the early part of the year—up a solid 2.0% in April. But mixed in with this strength were increasing signs of weakness: tourism and general consumer spending was cooling, creating a deceleration in service-sector growth. The bear stock market brought the recent year's growth in the finance sector to a screeching halt. The year-on-year employment comparisons in the private service-producing sectors (telecommunications and public utilities, trade, finance, and services, which account for about three-quarters of the City's employment), had been steadily declining during the year. By August, year-on-year nonagricultural employment growth had slowed to a 1.0% gain.

However, the terrorist attack on September 11 had an immediate impact on employment in the City. As shown in the following chart, employment declined by over 70,000 in the fourth quarter of 2001 and 2002 is expected to average a similar decline.

TOTAL REDUCTION IN EMPLOYMENT FROM SEPTEMBER 11—NEW YORK CITY

Thousands

Sector	2001Q4	2002	2003
Construction, Mining	1.28	1.46	0.98
Financial, Insurance, Real Estate	31.85	31.89	31.86
Government	0.07	1.40	2.75
Manufacturing	3.05	4.04	2.82
Services	14.57	15.39	9.72
Trans., Telecom., Public Utilities	5.07	1.44	0.97
Trade	15.33	14.38	8.01
Total Non Agricultural	70.95	70.00	57.10

By late last summer, the City's phenomenal real estate boom was slowing, and markets were returning to some semblance of equilibrium. The extraordinarily high cost of local real estate combined with the slowing national economy drove housing starts down from their sky-high levels during the last half of 2000. Consequently, employment growth in the construction sector moderated from double-digit employment gains in 2000 to still healthy job increases of 5.2% and 4.0% in July and August, respectively. The vacancy rate for office space in Manhattan remained only 5.1%, despite the addition of over seven million square feet of office space freed up by closing and downsizing dot-coms. Large contiguous blocks of space remained scarce. On balance, however, the City remained less affected by the national downturn than most other metros prior to September 11.

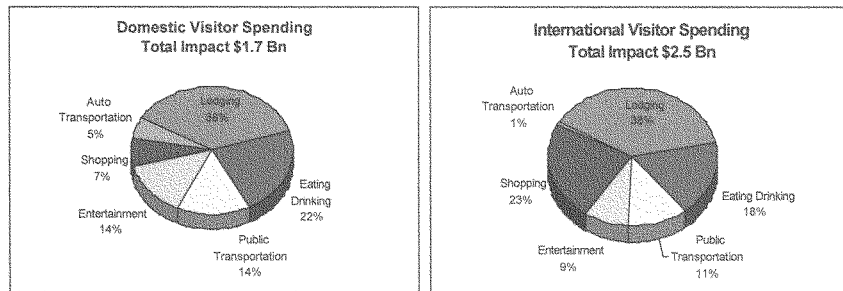
The post-attack forecast, however, presages a sharp decline for New York in the coming months, especially during the fourth quarter of this year and in 2002. DRI•WEFA estimates that the City will lose 71,200 jobs during 2002 compared to our pre-September 11 expectation. The job losses are both direct and indirect, as a result of the September 11 events. In addition, the loss in personal income is quantified at \$8.7 billion, a reduction of 2.2% from the Baseline. Wages and salaries will also lose a projected \$4.9 billion, a 1.8% decline. The difference between the two is largely accounted for the drops in proprietor's income and in property income, both of which are sharply affected by the impact.

The immediate economic consequences to the City from the attacks come in three ways:

- First, an estimated 31.8 thousand jobs formerly housed in the WTC that have been relocated out of state.
- Second, a sharp fall in tourist and business travel to the City in the wake of the attacks. In the fourth quarter of 2001, an estimated 27.5 thousand City jobs will be lost in the industries that cater to tourists and business travelers: hotels, restaurants, air transport, tourist attractions, and the retail industry. This will be a relatively short-lived impact; by 2003 we anticipate that most of these jobs will be regained as tourists and business travelers return. The total estimated reduction in tourist spending through 2003 is over four billion dollars (see chart below).
- Third, an additional drop in employment in the retail and service sectors located in Lower Manhattan that catered primarily to the financial sector. An estimated 126.5 thousand jobs needed to be relocated after the attacks, and most of them have left Lower Manhattan, at least temporarily. These departures mean lost customers to thousands of local restaurants and other service firms located there.

In the longer term, the key risk for the City is that the loss of financial sector employment from Lower Manhattan could accelerate as firms relocate elsewhere. While a relocation out-of-state would be most harmful, even a relocation of workers to other areas in the City could slow the redevelopment of Lower Manhattan. The City and State must work diligently to assure that this does not occur.

DISTRIBUTION OF VISITOR SPENDING
Cumulative Impact from 2001Q4 through 2003



Assuming that the redevelopment of Lower Manhattan proceeds apace, the good news for the City economy is that the downturn will be fairly short-lived. The most severe impact of the terrorist attacks will be felt in the fourth quarter, and in 2002. Employment in the City will trough in the fourth quarter when it is estimated to decline by 5.8% at an annual rate, followed by a slow recovery in 2002. Although employment for 2002 will remain 0.3% below the 2001 average, by the fourth quarter of the year it is forecast to be 1.2% higher than 2001Q4. A recovery by the national economy during the second half of next year will help, and the tourism sector, responsible for much of the immediate drop in City employment after September 11, will regain its momentum. Consumer spending appears to remain remarkably resilient; we expect both the retail sector and housing starts to rebound

by the fourth quarter of 2002. Expenditures to clean up and rebuild Lower Manhattan will also contribute to the City's economy.

IMPACT ON THE NEW YORK CITY ECONOMY
(Percent Change at an Annual Rate Unless Indicated)

	2001:1	2001:2	2001:3	2001:4	2002:1	2002:2	2002:3	2002:4	2003:1	2003:2	2003:3	2003:4	2001	2002	2003
Nonagricultural Employment (000)															
Baseline	4315.9	4333.1	4324.2	4332.4	4355.7	4361.6	4370.9	4381.3	4392.2	4405.2	4417.7	4430.2	4326.4	4367.4	4411.3
Current	4315.9	4333.1	4326.1	4262.4	4285.7	4293.0	4295.6	4315.4	4334.0	4347.6	4359.6	4375.5	4309.4	4297.4	4354.2
Unemployment Rate (%)															
Baseline	4.9	4.9	6.1	6.0	6.1	6.0	6.1	6.1	6.1	6.2	6.2	6.3	5.5	6.1	6.2
Current	4.9	4.9	6.1	6.5	6.8	6.9	6.7	6.5	6.4	6.4	6.3	6.3	5.6	6.7	6.4
Personal Income															
Baseline	6.0	5.8	6.7	4.3	6.9	2.9	5.9	4.4	3.8	4.2	4.8	4.6	5.7	5.3	4.4
Current	6.0	5.8	4.7	-4.5	6.2	6.1	5.2	6.2	6.4	4.7	3.9	4.5	4.8	3.8	5.4
Wages and Salaries															
Baseline	7.2	5.7	8.4	5.2	7.2	2.1	7.1	4.9	3.7	4.5	5.4	5.0	6.9	5.7	4.7
Current	7.2	5.7	7.6	-5.4	8.9	6.2	5.5	6.8	7.2	3.4	3.8	4.0	6.0	4.7	5.5
Housing Starts (000)															
Baseline	16.5	19.6	14.1	14.0	14.0	13.8	13.8	13.9	13.9	13.9	13.9	14.0	16.0	13.9	13.9
Current	16.5	19.6	11.7	10.9	10.5	11.6	11.5	11.8	12.2	12.4	12.3	12.4	14.7	11.4	12.3

The Baseline forecast was completed in September, 2001, prior to the WTC attacks. The Current forecast was completed in November.

IMPACT ON THE NEW YORK STATE ECONOMY

As documented by State economic statistics, the State's economy will undergo a reaction to the attacks similar to that of the City, but more subdued. To some extent, the State statistics will hide the dichotomy between the impact of the shock to the City and to Upstate New York. The City accounts for just under 50% of the State's employment, and much of the weakness associated with the attack will be centered in New York City. The major direct impact on the State will result from a decline of an estimated 19,400 jobs related to the drop in tourism and business travel in Upstate New York in 2001Q4 (i.e., jobs in addition to those lost in the City for this reason). However, Upstate tourism will recover more rapidly than in the City, and the impact on Upstate employment is more limited as a result. Even in early 2002, Upstate tourism is beginning to return towards pre-attack levels.

As indicated in the following chart, total State employment declined by an estimated 100,000 jobs in the fourth quarter of 2001, and it is anticipated that employment for all of 2002 will remain over 78,000 below the pre-attack estimate.

TOTAL REDUCTION IN EMPLOYMENT FROM SEPTEMBER 11—NEW YORK STATE

Thousands

Sector	2001Q4	2002	2003
Construction, Mining	0.25	1.60	2.37
Financial, Insurance, Real Estate	31.85	31.89	31.86
Government	0.09	1.91	3.32
Manufacturing	4.10	4.64	5.07
Services	32.53	10.98	12.31
Trans., Telecom, Public Utilities	6.67	2.90	2.88
Trade	24.34	24.31	19.68
Total Non Agricultural	99.83	78.20	77.50

Only about a third of the almost 100,000 jobs lost to New York State following the attack are a direct result of the attack itself. As the following table shows, an estimated 32,000 jobs left New York State as City businesses directly affected by the attack relocated employees out of the State. The additional 68,000 jobs lost by the state came about because of declines in business activity in other sectors that sold directly to WTC businesses or their employees (such as restaurants and retail establishments in Lower Manhattan), or due to the secondary impact of the attack on the State's economy.

ESTIMATED DIRECT EMPLOYMENT IMPACTS BY SECTOR

Sector	Total Jobs Directly Impacted ¹		Jobs Leaving NY ²	
	Number	Share (%)	Number	Share (%)
Architectural Services	271	0.2%	90	0.3%
Business Services	6,068	4.8%	586	1.8%
Communications	1,218	1.0%	212	0.7%
Computer Services	2,330	1.8%	139	0.4%
Educational Services	277	0.2%	-	0.0%
Financial	92,997	73.5%	28,722	90.2%
Insurance	14,219	11.2%	1,558	4.9%
Legal Services	5,999	4.7%	-	0.0%
Manufacturing	554	0.4%	-	0.0%
Personal Services	751	0.6%	-	0.0%
Retail Trade	150	0.1%	-	0.0%
Social Services	975	0.8%	-	0.0%
Transportation	692	0.5%	542	1.7%
Total	126,502	100.0%	31,849	100.0%

¹ Jobs relocated from Lower Manhattan due to terrorist attack.

² Jobs relocated out of New York State.

Apart from tourism, the economic story Upstate is driven by the ongoing weakness in Manufacturing. Even during the boom years from 1995 to 2000, the State's manufacturing employment losses averaged 1.5% annually. With production falling this year, manufacturing employment is forecast to decline by 3.4%, followed by a further drop of 2.4% in 2002. Although the DRI•WEFA forecast calls for a slight 0.8% increase in 2003, we anticipate that the sector will continue to lose employment at an average pace of 1-2% through the decade.

IMPACT ON THE NEW YORK STATE ECONOMY
(Percent Change at an Annual Rate Unless Indicated)

	2001.1	2001.2	2001.3	2001.4	2002.1	2002.2	2002.3	2002.4	2003.1	2003.2	2003.3	2003.4	2001	2002	2003
Gross State Product															
Baseline	4.5	6.4	3.0	3.9	5.9	5.5	5.0	5.5	5.2	5.6	5.3	5.9	5.2	5.0	5.4
Current	4.5	6.4	3.0	-3.7	6.9	5.3	4.8	5.6	5.4	5.6	5.3	6.0	4.7	3.7	5.4
Real Gross State Product															
Baseline	1.2	4.1	1.7	1.7	3.4	3.2	2.8	3.3	2.6	3.4	2.8	3.6	2.9	2.8	3.0
Current	1.2	4.1	1.8	-5.8	4.3	3.0	2.7	3.4	2.8	3.4	2.8	3.6	2.4	1.5	3.1
Nonagricultural Employment (000)															
Baseline	8717.5	8732.6	8706.0	8671.7	8678.1	8676.0	8684.3	8724.5	8755.8	8792.0	8813.1	8851.6	8706.9	8690.7	8803.1
Current	8717.5	8732.6	8708.1	8573.5	8605.4	8598.7	8602.0	8643.7	8678.6	8714.3	8735.5	8773.9	8682.9	8612.5	8725.6
Unemployment Rate (%)															
Baseline	4.2	4.3	4.8	5.2	5.7	5.8	5.7	5.5	5.4	5.4	5.2	5.2	4.6	5.7	5.3
Current	4.2	4.3	4.8	5.6	6.0	6.2	6.0	5.8	5.7	5.7	5.5	5.5	4.7	6.0	5.6
Personal Income															
Baseline	9.4	4.5	2.3	4.0	4.3	5.9	4.4	7.3	5.5	5.7	3.0	4.7	5.6	4.5	5.4
Current	9.4	4.5	3.1	-2.2	5.1	5.5	3.9	7.2	5.4	5.6	2.9	4.7	5.3	3.5	5.2
Wages and Salaries															
Baseline	10.2	4.3	2.6	2.6	7.0	5.2	4.3	6.7	6.7	3.8	3.4	4.2	6.1	4.8	5.2
Current	10.2	4.3	2.7	-2.2	7.8	4.7	3.7	6.5	6.5	3.5	3.2	4.1	5.7	3.8	4.9
Retail Sales (% chya)															
Baseline	1.4	2.7	3.7	5.9	21.5	4.3	4.5	5.6	6.2	6.2	5.7	4.7	3.5	8.5	5.7
Current	1.4	2.7	4.0	4.1	19.7	2.6	2.2	5.6	5.9	6.0	5.7	4.6	3.1	7.1	5.5
Housing Starts (000)															
Baseline	36.3	33.7	33.3	31.9	31.4	32.7	32.0	32.3	33.3	33.3	33.3	33.2	33.8	32.1	33.3
Current	36.3	33.7	33.3	31.7	30.9	31.9	30.9	31.0	32.0	31.9	32.0	31.9	33.8	31.1	32.0

The Baseline forecast was completed in September, 2001, prior to the WTC attacks. The Current forecast was completed in November.

In total, the State will lose almost 100,000 jobs in the fourth quarter of 2001 due to the attacks, and this differential will recover to about 78,000 in both 2002 and 2003. The job losses will translate into drops in retail sales and personal income for the State. Retail sales in the State will decline by about 1.7% in both 2002 and 2003 as a result of the attacks, and the drop in personal income will be about 1.4% in both years from our pre-attack expectations.

The Upstate economy has lagged the City's growth in recent years, and there is little to suggest that this situation will change. Consequently, this puts even more importance on the need for New York to do everything it can to bring about economic recovery from the attacks.

IMPACT ON NEW YORK STATE TAXES

As a consequence of the reduction in economic activity and employment in New York State, we estimate that, on a preliminary basis, State taxes will decline by over \$1.1 billion in SFY2002, followed by a drop of \$2.4 billion in SFY2003. Our assumption that, on net, the 32 thousand jobs already lost to relocation out of New York State following the attack do not return, implies that the State's tax base has been reduced, and through SFY2004 at least, revenues continue to lag what we had anticipated prior to September 11.

**PRELIMINARY ESTIMATE OF STATE TAX REVENUE
REDUCTIONS FOLLOWING THE TERRORIST ATTACK**
(*\$ Millions*)

	SFY2002	SFY2003
Personal Income Tax	\$927.9	\$2,038.9
Withholding	479.8	1,124.4
Estimated Payments	434.6	719.5
Final Returns	13.5	195.0
User Taxes and Fees	52.1	116.2
Business Taxes	131.7	265.7
Total	\$1,111.7	\$2,420.8

CONCLUSIONS AND RECOMMENDATIONS

NEW YORK STATE HAS A BIG STAKE IN THE CITY'S ECONOMIC RECOVERY

New York City has been an important part of growth in New York State for a number of years. From 1995 to 2000, nonagricultural employment in New York State rose by an average of 1.8% per year. In the City, however, employment grew by an average of 2.2% annually. Employment growth in the Upstate economy consequently was only 1.4% per year on average during that period. If it proves difficult for the City to get back on its feet in the wake of the attacks, growth in the State's future tax base will down-shift sharply. Although this difference of 0.4 points may seem small, it will accumulate up to significant differences in tax revenues over a decade.

THE STATE'S TAX BASE HAS ALREADY TAKEN A PERMANENT HIT

State nonagricultural employment in the fourth quarter of 2001 will decline by an estimated 99.8 thousand jobs as a result of the attack and over 70% of these losses will occur in New York City. To date, an estimated 31.8 thousand jobs have left New York temporarily as a result of the attacks. Even with a steady economic recovery in the City, some of these job losses will become permanent. The City will have to work hard to regain the growth trajectory we expected for it prior to the attacks.

NEW YORK MUST WORK TO RETAIN ITS FINANCIAL SECTOR

The financial service sector is important to New York, for the State as well as the City, where it accounts for 13% of total employment (compared to only 6% nationally). This imbalance gains added urgency now. Although individual firms have relocated to New Jersey in recent years, the flow was more of a trickle because New York City clearly retained its title as the financial center of the country, and large financial firms perceived value in being represented there. With the destruction of the World Trade Center, however, the floodgates could open if New York is not careful.

One lesson that business took away from the attack is the risk of concentrating operations, and failing to maintain adequate backup and operational redundancy. This implies additional geographical dispersion by financial-sector firms as they regroup for the future. Add to that the current unavailability of space in Lower Manhattan, the distasteful elements of the cleanup there, and ongoing efforts by New Jersey to lure firms across the Hudson

River, and you have a scenario where many more financial service jobs could find their way to New Jersey in the months to come.

New York needs to convince business leaders that there is a future for them in Manhattan, and continue to move rapidly enough in planning for and constructing this future so as to encourage them to remain committed to the City. Such an effort implies the need for enthusiastic leadership and cooperation among both public and private sector leaders.

NEW YORK SHOULD ACT NOW TO REBUILD TOURISM AND TRAVEL

In addition to the financial sector jobs lost in September, many more jobs disappeared when the tourists did. We believe that 27,500 City jobs were eliminated during the fourth quarter of 2001 in hotels, restaurants, retail, and other sectors directly due to the drop in tourism. The State lost an additional 19,000 jobs from these sectors.

In one sense, tourism should be the easiest part of the disrupted economy to rebuild. Few of the attractions that draw tourists to New York were affected by the attacks, although some remain closed. Assuming no further terrorist incidents, tourists will return to New York, but the City and State should be aggressive in encouraging this. Tourists provide an important part of the vibrancy that is New York City, and they are extremely important to the retail trade there, not to mention hotels and restaurants. Potential tourists need to understand that the City is mostly back to normal, and that their safety can be reasonably guaranteed. City and State officials should lead a revitalized partnership with the airlines, travel professionals, and the tour guide industry to make this happen.

NEW YORK NEEDS TO BUILD A 21ST CENTURY INFRASTRUCTURE FOR LOWER MANHATTAN

A critical part of rebuilding Lower Manhattan will be to attend to infrastructure problems in the wake of the attacks. Transportation, communications, and power services to the area were severely compromised by the attack, and much of the immediate work will entail just getting the area back up and running with a basic level of service.

Even beyond that, however, New York should plan for future growth. With the destruction of the PATH station beneath the WTC complex for example, the City has the opportunity to rethink public transportation to Lower Manhattan. By one estimate, about 40% of the WTC employees commuted from New Jersey prior to September 11. If the City is serious about holding on to its financial service firms and their employees, easing the commute of these workers would be an excellent step to help encourage employers to remain in the City. At the same time, enhanced access from Midtown and the other boroughs could also be reconsidered as part of the rebuilding. Such an effort suggests that New York should devise ways to build cooperation among the several transportation authorities with interests in the redevelopment.

With regard to telecommunications and electrical power, the attack highlighted the reliance of the WTC and much of Lower Manhattan on just a few service facilities. Verizon, the incumbent local exchange carrier, served the area through one local switching facility which sustained significant damage in the attack. Con Edison lost two substations located beneath the WTC, and sustained damage to other substations that supplied power to Lower Manhattan. As these organizations repair and replace these capabilities, New York should encourage them to provide a level of redundancy so that any future shocks to their systems serving the area could more easily be managed. Again, this sort of assurance should encourage business leaders in their decisions regarding locating in Lower Manhattan.

NEW YORK SHOULD WORK TO ENHANCE PUBLIC SECURITY

With two major terrorist attacks in eight years, New York City needs to recognize that future terrorist activities could also be targeted at the City. Residents, employees, and tourists all need to feel a reasonable level of safety when they travel to the City. Indeed, without this basic level of security, all of the City's efforts to retain firms and to attract tourists could fall short. Although no security measures can ensure complete safety at all times, the City has been reasonably successful over the years in maintaining control over the criminal element, and it should expand its efforts to enhance this control over potential terrorism as well. This may entail closer collaboration with federal and state authorities than in the past.

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After the site cleanup is complete (a task estimated to take up to a year), New York City faces the difficult task of rebuilding and restoring lower Manhattan. It is clear that this cannot be a mere reduplication of the World Trade Center. After September 11, it is problematic that the business community and its employees would ever consider occupying a new set of twin towers, and it is not certain the public will allow such a restoration to take place. As the City moves ahead to develop plans for the area's future, it must accept the reality that the new lower Manhattan area will not be like the old. In particular, there is a risk that the base of financial services employment previously located in the area cannot be restored there.

Taking a broader view, restoring the vibrant, mixed-use neighborhood that existed in lower Manhattan prior to the attacks will be difficult under the best of circumstances. It is easy to forget that it took decades for this neighborhood to develop. The completion of the WTC initially flooded the area with excess commercial space, and rents suffered as a result. It took almost a decade for it to be fully leased, and much longer for Lower Manhattan's Class A vacancy rates to fall to the level of those in Midtown. Not until the openings of high-end Battery Park City residences escalated in recent years did Lower Manhattan begin to develop the balance to help turn it into a functioning, around-the-clock neighborhood. The more recent construction of hotels and museums contributed further. The time it took to get to this point (about the past 30 years) points to the difficulty of recreating such a neighborhood environment now.

IMPACT ON EMPLOYMENT

By any measure, the physical and economic devastation wrought by the September 11 attack has no historical peacetime precedent in the United States. There are presently a number of efforts underway to catalog the physical damage on New York City, as well as to estimate the direct and indirect general economic and employment effects of the attack. For the purposes of estimating the shock to the City and State economies, and to State tax revenues, quantifying the immediate and direct employment effects is critical. As such, DRI•WEFA has carefully surveyed the existing data and analyses in order to provide as complete and thorough a picture as possible, with a particular emphasis on the number of jobs that are relocating from New York State. Our methodology and results of this analysis are explained in this chapter.

DIRECT EMPLOYMENT IMPACT

To date, the best available published information on the direct employment impacts of the attack has come from the commercial real estate industry. Several real estate services firms and brokerage companies have developed initiatives to track tenant movements from Ground Zero, as firms seek to relocate and return their businesses to normal operation. Of these, DRI•WEFA has determined that data provided by TenantWise.com, an Internet real estate services and advisory firm based in downtown Manhattan, appears to be the most complete and accurate for estimating employment impacts.

Shortly after the attack, TenantWise.com began to systematically survey tenants in 15 large properties—those in the World Trade Center, the World Financial Center, and in other adjacent large properties in downtown Manhattan that were heavily damaged. Within these 15 properties, TenantWise.com identified a total of 187 non-governmental tenants that leased space in excess of 10,000 square feet (using real estate industry norms, this corresponds to firms employing at least 40 people). These 15 buildings constitute a total of 31.9 million square feet (msf) of office space. Of this total, six buildings—the entire 13.4 msf World Trade Center complex—were completely destroyed. The remaining nine buildings, accounting for over 18.5 msf of space, were heavily damaged and not able to support immediate re-occupancy. We denote these 15 properties our “core sample” and use it to derive our job migration estimates. We also supplement the TenantWise.com information with data provided by other sources. An annotated list of the buildings physically destroyed or damaged by the attack is shown in the chapter “Physical Impact of September 11.” Buildings in the core sample are also identified there.

The methodology for deriving job migration estimates is relatively straightforward. For each of the 187 tenants in the core sample, TenantWise.com initiated a series of ongoing surveys of their relocation plans, along with estimates of the number of jobs affected by the relocation. For each tenant in the core sample, the pre-September 11 space is first recorded, along with an estimate of the pre-September 11 job count. Each firm is then asked to report on its specific relocation plans, including their destination, the destination square footage, and an estimate of their destination job count. The primary industry of each firm is also recorded. Destinations include both a geographic location, including ‘Midtown’, ‘Downtown’, ‘New Jersey’, ‘Elsewhere (out of state)’ or ‘Not Available’, along with whether the firm was relocated to new space or backfilling existing space that the company currently leases. Using these survey results, along with estimates of job migration for firms not included in the TenantWise.com sample (i.e., firms with under 10,000 square feet of

space) we have been able to estimate the *direct* or *primary* employment impact of the attack.

For the core sample of 15 buildings directly surveyed by TenantWise.com, the stratification of job migration by destination and building status is shown in the following table. Slightly more than 84,000 jobs covering the 187 tenants were impacted by the attack. Nearly 33,000 of these jobs came from the six destroyed World Trade Center buildings.

SUMMARY OF TENANT JOB RELOCATION SURVEY OF CORE SAMPLE

Destination	Building Status		Total
	Damaged	Destroyed	
Downtown	25,608	732	26,340
Downtown Backfill	2,830	707	3,537
Midtown	5,528	8,909	14,437
Midtown Backfill	467	11,074	11,541
New Jersey	2,224	2,640	4,864
New Jersey Backfill	8,289	1,930	10,219
Relocate Elsewhere	1,617	2,385	4,002
N/A	4,520	4,598	9,117
Grand Total	51,083	32,974	84,058

Source: TenantWise.com. These totals are for only the "core sample" of 15 building tenants directly surveyed by TenantWise.com.

These job migration counts are used as the basis for our total employment estimates. The estimates do not reflect the relocations of smaller tenants, nor that some of the tenants that reported a destination as 'N/A' will in fact move their jobs out of New York State. At this stage it is critical to note that our primary concern is estimating *out-of-state* job movements. Jobs moved out of state represent an immediate, direct, and potentially severe negative impact on the tax base. Firms that choose to migrate to another part of New York City (or State) can be considered tax-revenue neutral. In addition, it is critical to provide a break out by *industry* for out-of-state job movements. Different industries have distinct wage, salary, and compensation schedules, and as such have different effects on tax collections.

To calculate more complete job impact estimates, we first stratified the TenantWise.com data by major industry. Within each industry, we calculated the number of jobs confirmed to be moving out of New York State. We then calculate the share of confirmed jobs moving out-of-state relative to each industry's total jobs (after removing the "N/A" firms). This proportion is the percentage of jobs known to be leaving New York State. We next make the assumption that for each industry, the eventual destination of jobs represented by firms reporting a destination of "N/A" is the same as those for broader sample. By repeating this calculation for each industry sector in the core sample, we derived a broader estimate of how many jobs for the 187 non-governmental tenants are migrating out of New York State.

We next need to augment this calculation by estimating the job migration patterns for each industry for smaller tenants not included in the TenantWise.com survey (those leasing under 10,000 square feet). This estimate is developed by approximating the number of small tenants in the core sample based on their space requirements. As noted above, the core sample of 15 properties totals 31.9 msf of space. The 187 large tenants collectively occupy 21.2 msf, or 66.4% of the total space in the sample. The remaining 10.7 msf is assumed to be occupied by small tenants (less an allowance for government space). Using the real estate industry convention that an office worker on average requires 250 square feet of

space, a total of 42,400 jobs in the 15 core sample buildings are estimated to be from small tenants. Since no specific tenant-by-tenant data is available for these firms, we assume that the distribution industries and the percentage of out-of-state job migration is the identical to the large tenant sample. Finally we sum the large tenant and small tenant job estimates by industry to determine our final job impact estimates. The results are shown below.

ESTIMATED DIRECT EMPLOYMENT IMPACTS BY SECTOR

Sector	Total Jobs Directly Impacted		Jobs Leaving NY	
	Number	Share (%)	Number	Share (%)
Architectural Services	271	0.2%	90	0.3%
Business Services	6,068	4.8%	586	1.8%
Communications	1,218	1.0%	212	0.7%
Computer Services	2,330	1.8%	139	0.4%
Educational Services	277	0.2%	-	0.0%
Financial	92,997	73.5%	28,722	90.2%
Insurance	14,219	11.2%	1,558	4.9%
Legal Services	5,999	4.7%	-	0.0%
Manufacturing	554	0.4%	-	0.0%
Personal Services	751	0.6%	-	0.0%
Retail Trade	150	0.1%	-	0.0%
Social Services	975	0.8%	-	0.0%
Transportation	692	0.5%	542	1.7%
Total	126,502	100.0%	31,849	100.0%

Based upon our calculations, nearly 32,000 jobs have migrated out of New York State as a direct result of the September 11 attack. In total, over 126,000 were impacted—this is equivalent to the entire employment base of a small city.

It is no surprise that the financial and finance-related companies were hardest hit by the September 11 attack. Financial firms accounted for over 73% of the direct job impact; if insurance companies are factored in, then the proportion rises to nearly 88%. If we consider the proportion of financial jobs estimated to be leaving New York State, the statistics become more alarming. Over 90% of the jobs leaving New York come from the financial sector. Adding insurance companies to this total raises the proportion to over 95%. Fortunately, several of the other industries hard hit by the attack, including Business Services and Legal Services, have not reported significant out-of-state relocations. In part this is due to the fact that these are support industries for the Financial Services sector, and proximity to concentration of financial firms in the City is critical. With the out-of-state migration of notable numbers of financial jobs, however, there will likely be a reduced incentive for these firms to expand their New York-based staffs.

Finally, while the estimates provide an assessment of the immediate job impacts of the attack, we need to make some further assumptions about how much of this employment is likely to migrate back into New York State. For the purposes of this study, we have assumed that negligible numbers of the jobs that moved out-of-state will return within the next three years. At first glance, this seems a conservative estimate, but our reasoning is as follows:

- First, the energy, communications, and transportation infrastructure necessary for these many of these firms to return to their pre-September 11 locations will not be in place soon, possibly for years to come.
- Second, concerns on behalf of many former Downtown Manhattan firms that they need to decentralize their operations away from that area.
- Third, there are a number of disincentives for firms that moved from downtown Manhattan to New Jersey locations to return. These include the costs of moving and resettlement, along with the repeated disruptions to employee commutes, many of whom already live in New Jersey.
- Fourth, there is anecdotal evidence that firms have used this forced relocation as an opportunity to engage in cost cutting and consolidations, and will not have an immediate need to return to the higher-cost environment of New York City.
- Fifth, some of the relocations to New Jersey will be linked to incentives to stay offered by that state.
- Sixth, as noted below, the likelihood of further departures from New York City is not insignificant, and any returns may be counterbalanced by additional departures.

Knowing the number of jobs that have immediately left the City is relatively easy, but is very difficult ascertain how many jobs on net may actually eventually leave. We have taken a middle road by assuming that further departures and returns cancel each other out on net.

FUTURE RELOCATIONS?

That assumption aside, a key concern for New York City and State must be whether the exit of financial sector employment from the City could continue or even accelerate. Even before the attacks, office rents in downtown Manhattan had soared, forcing many of the City's largest financial service firms to look for less-expensive accommodations in neighboring New Jersey. Earlier this year, Chase Manhattan signed long-term leases for 1.1 million square feet in the Newport Office Center, planning to move more than 2,000 employees across the Hudson River. Merrill Lynch plans to double the size of its Jersey City work force (currently 2,000) when it finishes another office tower next to its 42-story building in the Colgate Center. Other City-based financial services companies that have moved or plan to move operations across the river include Goldman Sachs, PaineWebber, U.S. Trust, and American Express. Many of these companies will benefit from tax abatements from New Jersey.

An important advantage of a Jersey City location, however, may be the relative ease of constructing build-to-suit developments with the latest telecommunications and computer technology. Construction costs and development regulations are far less onerous in Jersey City than in Manhattan, where new building projects and renovations take much longer to complete.

Since the attacks, the list of major lower Manhattan employers seeking to release space there has lengthened, and now includes such notables as Citygroup, Goldman Sachs,

American Express, and Dow Jones. By one count, over 3.5 million square feet of Downtown Manhattan space has been offered by these and other firms.¹

To be sure, the economy is motivating a portion of this—not every firm on the list has designs to leave New York. However, the City has to be careful not to lose more of its financial services employment. The sector is a critically important driver to the City's economy. Finance, insurance, and real estate (the so-called FIRE sector) contribute almost 13% of the metro area's jobs, compared with just under 6% nationally, and the proportion is estimated at 46% for the eight ZIP codes that constitute Lower Manhattan. Many of these jobs tend to be relatively high-paying positions, with very positive contributions to the State's personal income tax base. Finally, FIRE-sector employees support a large base of business in the City's retail, restaurant, and personal services sectors. In the same way, there are a large number of business service firms—dedicated print shops, advertising firms, temporary help suppliers, and the like—located in Lower Manhattan to serve the financial sector. These jobs would follow any outflow of FIRE-sector employment from the City.

TOTAL EMPLOYMENT IMPACT

Despite the risk of further relocations from New York, in this study DRI•WEFA has made no assumptions that additional jobs would continue to be relocated from New York in the coming years. Our estimates of total employment impact from September 11 thus flow from three sources of job loss to the City and the State:

- First, the direct impact on employment by affected firms detailed above. As noted there, we estimate that 31.8 thousand jobs are relocated out of New York State, and we are assuming that on balance, none of these return through 2004.
- Second, the decline in tourist visits to New York City and State results in a reduction of 27 thousand jobs to the City in 2001Q4, and an additional reduction in over 19 thousand jobs located in Upstate New York in that quarter. In this case, we do assume that many of these job losses are temporary, and that most of them return as tourist activity revives through 2002-04. See the "Impact on Travel, Tourism, and Business Travel" chapter for details.
- Finally, there is an additional impact on job losses for the City and the State resulting from the general decline in the national economy which accelerated in the weeks following the attacks. See the Executive Summary for details on our assumptions as to this decline for the national, state, and city economies. This decline gives rise to a set of secondary job reductions for New York City and New York State. We have utilized our econometric models of the U.S., New York State, and New York City in estimating these impacts.

Based on these assumptions, DRI•WEFA believes that New York City will face a loss of an additional 71 thousand jobs during the fourth quarter of 2001 compared to our expectation prior to September 11—a decline of 1.6% from the employment base existing prior to then. For the State, the estimated additional loss in jobs totals almost 100 thousand—a decline of 1.1%.

¹ Newmark & Company Real Estate, Inc., *A City Challenged*, Fall/Winter 2001.

TOTAL REDUCTION IN EMPLOYMENT FROM SEPTEMBER 11—NEW YORK CITY*Thousands*

Sector	2001Q4	2002	2003
Construction, Mining	1.28	1.46	0.98
Financial, Insurance, Real Estate	31.85	31.89	31.86
Government	0.07	1.40	2.75
Manufacturing	3.05	4.04	2.82
Services	14.57	15.39	9.72
Trans., Telecom., Public Utilities	5.07	1.44	0.97
Trade	15.33	14.38	8.01
Total Non Agricultural	70.95	70.00	57.10

In the City, financial sector jobs lost account for 45% of the total jobs lost in 2001Q4, while the remainder come primarily from the impact on tourism and business travel. The decline in tourist visits to the City affects an estimated 27.5 thousand jobs in that quarter, jobs primarily centered in retail and wholesale trade, restaurant, hotel, and air transportation. In addition, indirect impacts reduce employment in construction and manufacturing.

While the employment impact on the financial sector is virtually the same at the state level, there is significantly more impact from the reduced number of tourists and business travelers. Of the total drop in nonagricultural employment in 2001Q4, the direct impact from the decline in tourism and business travel accounts for a total of almost 47 thousand (this includes the 27.5 thousand jobs eliminated in New York City).

TOTAL REDUCTION IN EMPLOYMENT FROM SEPTEMBER 11—NEW YORK STATE*Thousands*

Sector	2001Q4	2002	2003
Construction, Mining	0.25	1.60	2.37
Financial, Insurance, Real Estate	31.85	31.89	31.86
Government	0.09	1.91	3.32
Manufacturing	4.10	4.64	5.07
Services	32.53	10.98	12.31
Trans., Telecom., Public Utilities	6.67	2.90	2.88
Trade	24.34	24.31	19.68
Total Non Agricultural	99.83	78.20	77.50

While we have assumed that the financial sector jobs lost from the State do not return during this period, employment related to tourism comes back rapidly as tourism and business travel recovers. Employment in the tourist-related sectors begins to increase once again, both in 2002 and 2003, reducing the total non agricultural reductions shown in the two preceding tables.

IMPACT ON INCOME—SPECIAL CONSIDERATIONS

The employment drops in the City and the State resulting from the attacks will translate into drops in personal and other types of income, especially during the current quarter and in 2002. Because of the importance of financial services in the City economy, however, and due to the fact that the September 11 attacks resulted in the destruction of the WTC buildings, there are several special considerations that must be recognized in making this translation:

- Wages in the financial sector are higher than average.
- Large bonus payments are an important part of total compensation in the financial sector.
- Rental payments have been disrupted by the building destruction and damage around the WTC, and the subsequent relocation of business there to other locations.
- In addition, the collapse in the stock market during the past year has led to a large cyclical downturn in financial-sector profits, capital-gains realizations, and exercise of stock options, all of which have implications for personal income.

BONUSES & OTHER PERSONAL INCOME

FINANCIAL SECTOR BONUS PAYMENTS

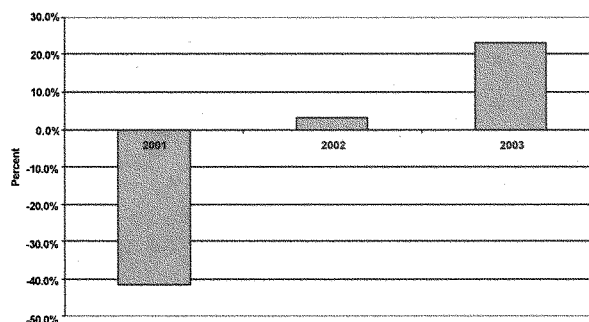
In recent years, companies have moved increasingly towards tying employee compensation to measures of performance and profitability. This has long been true among the financial sector that represents a significant part of both the New York City and State economies. The New York Division of the Budget estimates that in 1998, 25% of total employee compensation in the State was distributed through bonuses, and half of these were paid by the securities industry. In that industry, bonuses represented an estimated 40% of total compensation. This extraordinary compensation translates both into direct income tax revenue for the State, as well as a strong economic stimulus through consumer spending. In addition, individuals earning bonuses tend to be high income employees, with large portions of their income subject to taxation at the highest marginal rates.

The stunning bull market in recent years propelled bonus payments to a record level in 2000. The falling stock market this year has limited sector profits, however, and bonus payments will likewise decline. With many revenue sources to the securities industry falling throughout most of 2001, bonuses are expected to decline by 42% in 2001². The industry will begin to recover later next year, but we anticipate that industry profits will only slightly exceed those of 2001. Bonus payments will follow these profitability trends, growing by a mere 3% before bouncing back by an estimated 23.0% in 2003 to about \$23 billion.

² In this section, the discussion of annual numbers refer to the "bonus year." Most annual bonuses are paid at the end of a calendar year or the beginning of the following year. A bonus year is composed of the last three quarters of the calendar year and the first quarter of the next year. For example, profits earned in the calendar year 2000 determined bonuses paid in the bonus year of 2000, which consists of 2000Q2-Q4 and 2001Q1.

The large drop this year is no surprise, and was in the cards even before September 11. In a survey conducted by the Securities Industry Association (SIA) in August 2001, 58.1% of responding firms expected bonus payments to be slightly to significantly lower in 2001. Disruptions caused by the terrorist attacks will only serve to add to the industry's woes. However, both the industry and the economy should be solidly in recovery mode by next fall and in 2004.

Security Industry Bonus Payments Growth



Note: Years shown are "bonus years" ending in the first quarter of the following year. See footnote 2

CAPITAL GAINS REALIZATIONS

With the bull market, the amount of income generated in New York State from capital gains realizations has grown tremendously over the last decade. Capital gains income rose from \$9.5 billion in 1992 to an estimated \$55 billion in 2000³. In the booming stock market environment of the 1990s, this source of income grew much faster than other categories. As a consequence, the share of capital gains income in New York State's reported adjusted gross income has tripled over this period.

This year's decline in stock prices will bring an end to this trend, at least temporarily, and the income earned from capital gains is expected to decline by 20% in 2001—the first annual decline since 1994. Stock prices are forecasted to regain a growth trend by the end of 2002, and capital gain income growth should resume the following year.

³ New York Division of the Budget, 2000-01 Executive Budget, Appendix II, Part II—Explanation of Receipt Estimates, 2000.

Tax Year	Reported NYS Capital Gains (Millions)	% Change
1992	\$9,457	
1993	13,365	41.3%
1994	12,032	-10.0%
1995	14,086	17.1%
1996	22,441	59.3%
1997	31,563	40.6%
1998	40,246	27.5%
1999	49,311	22.5%
2000	55,478	12.5%
2001	44,369	-20.0%
2002	44,134	-0.5%
2003	47,739	8.2%

Source: New York State Division of the Budget, DRI•WEFA.

EXERCISE OF EMPLOYEE STOCK OPTIONS

Employee stock options are another form of compensation that has become much more predominant in recent years, particularly with the increase in high-tech, entrepreneurial activities. This trend has revealed itself by an increase in personal income or capital gains, depending on the nature of the options granted. Although relevant data is scarce, recent studies indicate that the extra income earned from exercising stock options is estimated to have increased by 166% from 1997 to 2000.

The financial industry, which generates a large percentage of New York's personal income, is also apt to use employee stock options as part of its compensation scheme. A Bureau of Labor Statistics pilot study found that while on average 1.7% of employees received stock options in 1999, in the financial sector, 33.9% of employees were granted options⁴.

While it is difficult to assess the magnitude to which taxable income earned from exercising stock options will decline during the next few years, that it will decline is unquestioned. The strike price of an option is typically fixed two to three years before an option may be exercised. This means that many stock options that could be exercised over the next few years had their conversion prices set during the strong bull market of 1999 and 2000. With the S&P 500 Index down over 14% in the past year, and the NASDAQ down over twice that, the value of many of these options is eliminated. The amount of income generated from stock option exercise will be very limited in 2001 and 2002; not until 2003 when a sustained market increase is again underway, is income generated from this source likely to begin to increase again. Even so, it is not likely approach its peaks of the late 1990s for some time to come.

⁴ U.S. Department of Labor, Bureau of Labor Statistics, "Pilot Survey on the Incidence of Stock Options in Private Industry in 1999," October 11, 2000.

IMPACT ON OTHER INCOMES

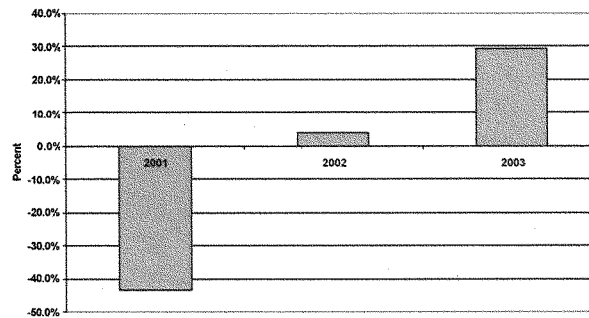
FINANCIAL SECTOR PROFITS

Due to the relatively high wages paid by the financial sector, it is one of the most important industries in New York City, accounting for an estimated 33% of the City's output last year (including insurance and real estate). In addition, this sector generates significant employment in its supporting industries and in the consumer spending undertaken in the City by its employees. The sector is also very important tax revenue generator to New York State through both income tax paid by financial sector employees, and the corporate franchise tax paid by financial firms.

The main sources of the securities industry income are commissions, underwriting initial public offerings (IPOs) and secondary stock issues, managing mergers and acquisition activity, and underwriting bonds. All of this activity is very cyclical, increasing in bull markets and declining in bear markets.

After one of the longest bull markets in history, the stock market started to decline late in 2000. Although as a whole, 2000 was a very successful year for the industry, the growth rate of securities industry profits had begun to decline towards the end of the year. As equity prices continued their descent in 2001, trading volumes declined, the amount and value of initial and secondary offerings fell, and as a result, the profit of the securities industry waned. Industry profits reported for the first two quarters of 2001 were already nearly 50% lower than that of a year earlier. With equity prices falling even further in the rest of 2001, we expect that profits for the entire year will also be about half of that earned in 2000. This weakness will continue into the beginning of 2002, but will pick up by the end of the year, such that a small increase is expected over the year as a whole. By 2003, rising trading volumes and IPO activity will help boost industry profitability again, although the overall level of industry profits that year will not reach the peak level achieved in 2000.

Security Industry Profits Growth



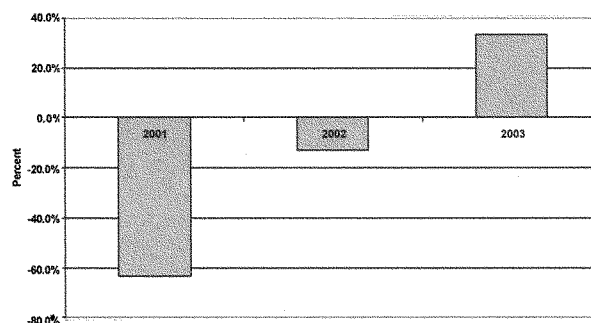
IPOS

The remarkable rise in the number and value of initial public offerings (IPOs) over the past few years has been a big contributor to security industry income. In 2000, over \$100 billion

in IPOs were sold, over two and one-half the value just five years earlier. However, as the business environment and market sentiment soured in 2001, the flood of IPOs slowed sharply. One impact of the September 11 attacks was to bring IPO activity virtually to a halt that month. Only 14 IPOs were done in the third quarter, down from 139 in the year-earlier period.

While IPO activity rebounded in October, it is likely that several years will elapse before IPO activity approaches its 2000 level. For 2001 as a whole, the value of IPOs is estimated to total little more than a third of its value in 2000, a decline of 63% from \$100 billion to \$36.6 billion. In 2002, the value of IPOs is expected to fall another 12.5% unless the stock market and economy recover more rapidly than anticipated. IPO activity should increase in 2003 as growing economic activity contributes to a recovery of corporate profits which will boost stock market values. The value of IPOs are expected to increase by 33% in that year.

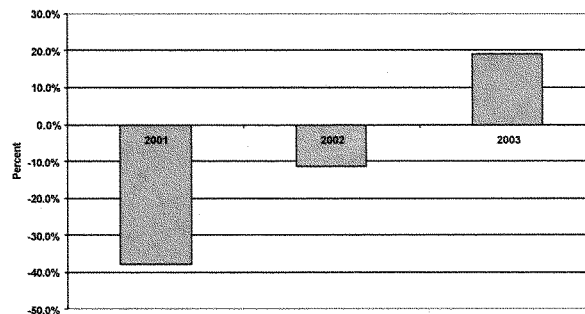
Growth in Value of Initial Public Offerings



SECONDARY ISSUES

Securities firms also earn significant revenues from secondary stock issues. This activity is influenced by much the same forces that impact IPOs, the volatility of the industry's business in secondary issues is not as great as that of IPOs. The value of secondary stock options is forecast to fall by 38% in 2001, somewhat less than the forecast drop in the value of IPOs for the year.

Growth in Value of Secondary Offerings



RENTAL INCOME

DIRECT IMPACT ON RENTAL INCOME

An important side-effect of the relocation of tenants from Ground Zero to other locations is the impact on rental income. DRI•WEFA estimates that rental income in New York State paid by these firms will be reduced by \$341 million per year as a consequence. This estimate is only for those large core tenants forced to relocate from the Ground Zero area because their location was destroyed or severely damaged. This amount represents 40% of the estimated total \$847 million paid in annual rents by these firms prior to September 11.

Rents paid by the former tenants of the WTC and other currently uninhabitable buildings in the area have ended, to be replaced by new rental payments made by these tenants in their new locations—whether within New York State or not. Using data provided by TenantWise.com (our primary source of tenant relocation data), supplemented by real estate market rental information provided by several leading New York-based real estate companies, we have estimated the aggregate direct change in rental income as a result of the September 11 attack.

Based upon the core sample of 15 affected properties and 179 of the 187 non-governmental tenants surveyed by TenantWise.com, we estimated the annual lease payments for each tenant on a building-by-building basis, as of September 11, and compared that to an estimated annual lease payment for each tenant in their post-September 11 location. Because there is enormous variation in rental rates and other lease factors on a tenant-by-tenant basis, and because much of this information is confidential to the tenants and landlords affected, our estimates depend closely upon currently market rental information for various New York City office sub-markets and building quality categories (Class A versus Class B). Additionally, our analysis only covers so-called "base rent" estimates. Other important costs associated with relocation including tenant improvements, moving costs, lease downtime, tax, insurance, and utilities costs, and escalations in the base rental rate are not factored into our estimates.

As noted in the section on employment impacts, firms relocating after September 11 have selected one of three options:

- > Lease new space elsewhere within New York State. Most of this new space is in Midtown Manhattan. Comparable Midtown space is generally more expensive than the vacated downtown space, however, in some cases, firms are contracting for less space than they formerly occupied in Lower Manhattan.
- > Backfill into existing leased space located primarily in New York City. In this case, the backfilling firm is simply filling space they already lease. In this case, rental income formerly paid in the WTC pre-September 11 location is generally lost.
- > Lease space outside of New York State. Generally, space in this category is located in New Jersey; in a few instances, firms relocated to Connecticut. In this case, the rental income moves from New York State.

The following table classifies the change in estimated rental income by firms relocating within New York State, firms relocating out of New York State, and firms that have closed. By our calculations, a total of \$341 million dollars in rental income is lost from the New York State tax base as a result of the direct impact of tenant migrations from Ground Zero. To date, the rental income lost from companies in our core sample that are confirmed to be closing New York operations is modest, just over \$3.1 million. Annual losses due to out-of-state migrations total an estimated \$140.5 million. The largest share of annual rental loss, almost \$198 million, derives from firms remaining in New York City. This total reflects both firms that are backfilling space and firms that are leasing new space at different rental rates after September 11. The preponderance of companies that are backfilling space they currently lease in other parts of New York City accounts for much of this decline.

ESTIMATED DIRECT REDUCTION IN ANNUAL RENTAL INCOME	
<i>Firms Forced to Relocate from Damaged & Destroyed Properties</i>	
Destination	Reduction In Annual Rent Payments
Firms Closed	\$3,168,159
Firms Relocated Out-of-State	\$140,481,761
Firms Relocated within New York State	\$197,753,367
Total	\$341,403,287

TOTAL IMPACT ON PROPERTY INCOME

The above estimate of the direct impact does not include the impact on rents paid by affected residents in the area or any secondary impacts on rental income paid by other area firms that may eventually close or relocate as a consequence of shifting business needs in lower Manhattan. It also does not reflect the relocation plans of firms that leased under 10,000 square feet prior to September 11, nor does it include any estimates for firms located in Upstate New York.

The DRI•WEFA economic model of New York State provides estimates of the total impact on property income including indirect effects of the attack. Our simulation of this model after September 11 takes into consideration not only the direct effects of the attacks on the World Trade Towers, but the indirect economic impact as the State's economy adjusts to the changes wrought by the attacks within the context of the ensuing national recession. In all, we estimate that total property income will fall by an average of \$1,650 million annually during 2002-3, a reduction of about 1.2% of total property income that we had forecast prior to the attack.

If we presume there is no change in tenant relocation behavior, it appears that New York State will lose a minimum of just over \$1 billion in taxable lease income over the next three years from the direct impact of the attack, and a total (direct plus indirect) of approximately \$5 billion in property income during that period relative to our expectations prior to September 11.

IMPACT ON TRAVEL & TOURISM

Apart from financial services, the travel and tourism industry is most affected by the September 11 attacks. The devastating impact on travel and tourism has been global, but the epicenter of these reverberations is, without question, New York City. A popular tourist destination for both international and domestic travelers, New York City has seen sharp declines in this business as travelers, afraid of being caught in the middle of possible future terrorist activity, have opted to vacation elsewhere or to stay home altogether this fall. Assuming no further terrorist attacks, this fear will gradually wane; however, it could be several years before New York City's tourism activity will truly get back to pre-September 11 levels of normalcy.

The importance of tourism to the City's economy derives from the number of jobs directly or indirectly dependent on it. Jobs not only in the industries that primarily serve the tourist—hotels, car rentals, tour operators, and the like—but industries such as restaurants and retail trade also heavily rely on tourist business. 56% of the City's employees work in the service or trade sectors, and tourists are very important to the demand for a huge proportion of these workers.

Fortunately for New York, the tourist sector is one which is readily available to rebuilding. Few of its popular tourist attractions were physically diminished by the attacks, although some remain closed, and access to the downtown area remains difficult. Nevertheless, most of the City's shopping, museums, and historical sites remain intact, and the City retains the necessary infrastructure to host an ongoing volume of visitors. The biggest challenge is convincing potential visitors, both in the U.S. and abroad, that the City is safe. Although overcoming this obstacle will not be easy, the City economy stands to gain for every uncertain tourist it is able to lure back. DRI•WEFA believes that a strong effort to restore the enthusiasm of tourists should be an important immediate goal as the City seeks to move forward. Gains here will accrue broadly to the City as a whole, helping to recovery the vitality that has always been so much of what New York represents.

NEW YORK CITY

Last year 37.4 million people visited New York City for business or leisure and spent almost \$17 billion in the City. Two-thirds of visitors to New York City arrive for leisure purposes with the remaining coming for business. It is estimated that travel and tourism in New York City generated \$882 million in State tax revenues last year and provided direct employment for 146,000 persons.⁵

The effects of reduced visitor spending touch many different sectors of the State economy. First, providers of goods and services to the visitor are affected. These include hotels, restaurants, taxis, retail trade, tour operators, and entertainment. However, the impact is also felt by secondary providers of goods and services to these companies. Therefore, losses have been also felt by sanitation services, laundry, advertising, wholesale trade and other intermediate suppliers to the tourism sector.

The impact has been most severely felt in the international visitor market which comprised 42% of all visitor spending while accounting for only 18% of all visits. International visitors spend, on average, two and one-half times more than their domestic counterparts. This spending is particularly concentrated in shopping with foreign visitors accounting for 70% of retail visitor spending last year. The impact on international visits will continue to be high

⁵ Travel Industry Association, TEIM Model

as international travelers substitute intra-regional for long-haul travel. As a result European and Asian travelers have shunned the United States in favor of closer and perceivably safer destinations.

The domestic travel market has also been significantly affected, but the effects were initially moderated by three factors. The first is the resilience of drive/train origin markets. Approximately three quarters of New York City's domestic visitors reside within driving distance of the City, and early indicators point to substitution of these modes of transport for air travel. The second factor was the short-term influx of rescue and relief workers as well as victims' family and friends. The third has been the rescheduling of trade shows from September into October. Each of these factors created an temporary boost to lodging and other spending in October. As these last two factors have subsided, the outlook for domestic travel to NYC has deteriorated.

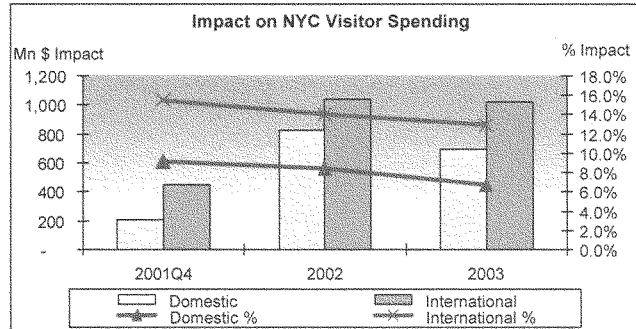
City promotional agencies such as NYC & Company have responded with promotional efforts such as "Paint the Town Red White & Blue." This promotion offers discounted packages to visitors, including lodging, a Broadway show, meals and parking discounts. They have been joined by the airlines, hotels, and major retailers who are now promoting low-price shopping trips in NYC to residents of other northeast cities prior to the holidays. Such promotions will help stave off more dramatic losses through the relatively slow winter months.

COMPARISON OF BASELINE (PRE-9/11) AND CURRENT (POST-9/11) OUTLOOK FOR VISITOR SPENDING
New York City, \$ Million

	2001Q4	2001	2002	2003
Baseline				
Domestic	2,292	9,506	9,800	10,388
International	1,943	6,840	7,416	7,935
Total	4,234	16,346	17,216	18,323
Current				
Domestic	2,082	9,099	8,971	9,689
International	1,495	6,188	6,374	6,909
Total	3,577	15,287	15,345	16,598
Loss				
Domestic	210	407	829	699
International	448	652	1,042	1,026
Total	658	1,059	1,871	1,725
Percentage Loss				
Domestic	9.2%	4.3%	8.5%	6.7%
International	23.0%	9.5%	14.1%	12.9%
Total	15.5%	6.5%	10.9%	9.4%

Although business travel to New York City will not be as severely affected as leisure travel by the attacks themselves, business travel budgets are directly related to corporate profitability, currently very weak for most industries. Consequently, the City can expect only modest help from business travelers in the months to come.

2001 was already set to experience contraction in its travel and tourism-related sectors. After strong growth of 9% in 2000, visitor spending was expected to decline about 4% this year. Hotel room nights were down around 6% year-to-date through August and attraction attendance was down approximately 4%. The losses were primarily felt in business travel and international visits.



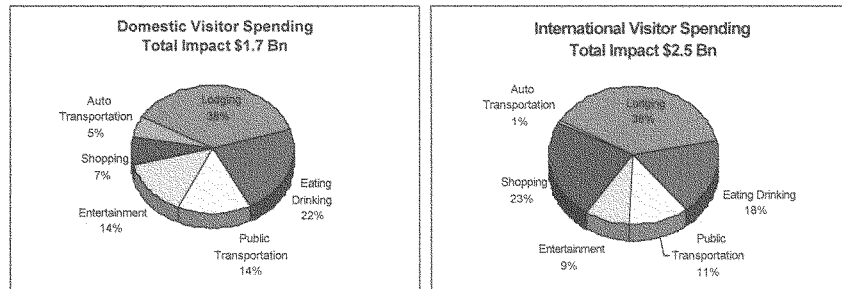
The impact on visitor spending in the fourth quarter of 2001 alone will tally \$658 million. The impact on international spending will be twice that of domestic visitor spending. Over 20% of previously expected international visitor spending will be foregone in the final three months of 2001. Nearly 10% of anticipated domestic traveler spending in New York City will be lost in the amount of \$210 million. The most dramatic effects were felt in the final three weeks of September. If one includes this period of the crisis, the impact on visitor spending climbs to \$1 billion for the year 2001.

The outlook for travel and tourism in 2002 and 2003 incorporates two key drivers. The first driver is the residual effects of the terror attacks on the perception of safety. The second driver is the U.S. recession brought on, in part, by the events of September 11. Therefore the largest impact is felt in 2002 as both of these drivers weigh-in heavily in the first half of the year. The U.S. domestic travel market is not expected to recover until the second half of 2002 as the economy regains its foothold. The international travel market will recoup some of its dramatic losses in the second half of the year as well. However, a slowing global economy and the traveler's natural aversion to risk will keep this market from fully recovering for some years to come.

The impact on visitor spending will tally \$1.9 billion next year and \$1.7 billion in 2003. Each of these years is successfully better than the period before it on a percentage impact basis. The loss in 2002 is equivalent to 10.9% of expected spending compared with 23% in the final quarter of 2001. Then, in 2003 the impact falls to 9.4% of the Baseline (pre-9/11) outlook as growth accelerates.

The impacts on particular sectors of the economy vary with the distribution of spending for domestic and international visitors. For both domestic and international visitors, lodging comprises the largest portion of spending. The most notable difference between the profiles of the two types of visitors is the more significant weight given to shopping for international visitors. International visitors spend 23% of their budget on shopping compared with only

7% for domestic visitors. Given the disproportionate impact on international visitors, the relative impact on the City's retail sector is greater than average.



Cumulative impact measured from 2001Q4 through 2003

Occupancy rates at New York hotels have consistently risen since the week of September 11. The rate hit its low point in mid-September with 45% of rooms occupied and the first week of November registered 78%. However, the impact is more severe than occupancy rates reveal for several reasons.

- First, beyond the destruction of the Marriott WTC, three other hotels in downtown Manhattan suffered severe damage. Thus post-September 11 occupancy rates calculations are based on a reduced supply of rooms.
- Second, hotels have significantly slashed room rates to help stimulate demand. The average daily rate (ADR) for New York City was down 21% in September and 30% in October, year-over-year. The ADR in October was \$184, compared to \$269 one year earlier. Consequently, hotel revenues have plummeted more rapidly than occupancy.
- Third, the October data reflect the effects of rescheduled as well as regularly-scheduled trade shows in addition to relief and rescue workers. It is widely expected that the numbers for November will be even more dismal.

As a result, PKF Consulting's forecast for 2001 revenue per available room (RevPAR) is \$150 for 2001 and \$125 for 2002. This compares with a RevPAR of \$201 in 2000. So far, an estimated 6,000 New York City hotel employees have been laid off and hours for remaining workers have been cut substantially.

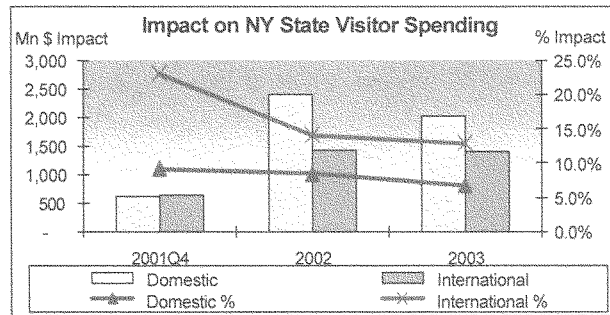
Restaurants have experienced large a drop-off in sales, approaching 50% in the second half of September. The New York State Restaurant Association has estimated that 12% of the workforce has already been laid off in New York City. Over thirty restaurants have been permanently closed with an additional 40 closed temporarily.

Broadway and the theater industry have sustained a cumulative loss in ticket sales of \$15 million from September 11-November 4. More substantial losses have been staved off by marketing to closer markets within New York City and the tri-state area. However, advance ticket sales have not picked up. Museums have also realized declines in attendance as group travel has fallen dramatically. Attendance from September 11-October 15 at the major New York City museums (including the Bronx Zoo) fell 40% short of the same period last year.

NEW YORK STATE IMPACT

The travel and tourism sector directly employed 468,000 New York State residents last year and generated State tax revenue of \$1.6 billion. Visitor spending in New York State registered over \$39.5 billion in 2000. Domestic expenditures were \$29.2 billion, or 73% of total tourist-related spending in the State. New York has the fourth-highest traveler expenditure by domestic visitors and the third-highest for international visitors.

New York City makes up 43% of all visitor spending in the State with 70% of all international visitors and 33% of all domestic visitors. Although the data are not as current for the State as for the City, it can be assumed that the impact on New York State travel and tourism mirror those on the City for each particular origin market (i.e. international and domestic). However, New York State has a much lower percentage of international visitors and the effects on the State are not as dramatic as for the City.



The most severe impact is naturally seen in the fourth quarter of 2001 with a loss of \$1.3 billion, a 13.2% decline from the pre-September 11 Baseline visitor spending forecast. This compares with a 15.5% decline expected for New York City. Recovery will begin to take hold in the second half of 2002 but not quickly enough to reverse the effects of a \$3.8 billion (9.9% of the baseline) cut in spending by travelers. Visitor spending will grow by a healthy 8.0% in 2003, but will still remain 8.4% behind the pre-September 11 outlook. Full recovery—particularly for international visitors—is not expected until 2005.

BASELINE (PRE-9/11) AND CURRENT (POST-9/11) OUTLOOK FOR VISITOR SPENDING
New York State, \$ Million

	2001Q4	2001	2002	2003
Baseline				
Domestic	6,849	28,407	28,407	30,112
International	2,778	9,783	10,076	10,782
Total	9,627	38,190	38,483	40,893
Current				
Domestic	6,221	27,190	26,005	28,086
International	2,138	8,851	8,660	9,388
Total	8,359	36,041	34,666	37,474
Loss				
Domestic	628	1,217	2,402	2,026
International	640	932	1,416	1,394
Total	1,268	2,149	3,818	3,420
Percentage Loss				
Domestic	9.2%	4.3%	8.5%	6.7%
International	23.0%	9.5%	14.1%	12.9%
Total	13.2%	5.6%	9.9%	8.4%

The distribution of traveler spending in New York State reveals those sectors most vulnerable to current and future declines. Of the major spending categories, *Lodging*, *Other Transportation* (primarily air travel), and *Food* (primarily restaurants and bars) top the list.

DISTRIBUTION OF VISITOR SPENDING IMPACT ON NEW YORK STATE
\$ Millions

	Auto Transportation	Other Transportation	Lodging	Food	Recreation	Shopping	Total
2001Q4	109	305	353	262	88	151	1,268
2002	327	919	1,062	790	266	454	3,818
2003	293	823	951	707	238	407	3,420
% Impact	9%	24%	28%	21%	7%	12%	100%

It is critical to note that the effects of September 11 on airport/airline revenue and employment are significant for New York State. When examining the size of air-related expenditure, including air tickets and airport spending, New York ranks third among all states, registering \$6.2 billion last year.

AIRLINE AND AIRPORT REVENUE, 2000—TOP 5 STATES

State	Air-related Expenditure, \$ Millions
California	14,710.3
Florida	6,959.0
New York	6,182.4
Texas	5,360.7
Illinois	5,106.5

Source: Travel Industry Association, TEIM, DRI-WEFA estimates based on 1999 data

The airline sector has been hit extremely hard nationally, with across the board capacity cuts of 20% and current load factors well below average. Load factors were already low before the attacks. Now, approximately 85% of companies anticipate continued cutbacks in travel spending by an average of 35%. After the fourth quarter of this year, the economy is as much to blame as terrorism. We expect some capacity to be restored as 2002 begins.

Air-related expenditures comprise 15% of total traveler spending in New York State and will struggle to recover over the next two years. Based on visitor declines, the impact on the State's air travel sector will tally \$200 million in the fourth quarter alone. The losses will reach \$600 million and \$530 million in 2002 and 2003, respectively. Approximately 3,000 workers have already been laid off in the transportation industry.

IMPACT ON STATE TAX RECEIPTS

Taken together, the economic disruptions from the terrorist attacks to New York and the further weakness in the national economic outlook that resulted will have a significant impact on New York State tax revenues during the next several fiscal years. DRI•WEFA's preliminary estimate of this impact totals a reduction of \$1,111.7 million in SFY2002, increasing to a reduction of \$2,730 million by SFY 2004, when compared to our expectation prior to the attacks.

**PRELIMINARY ESTIMATE OF STATE TAX REVENUE
REDUCTIONS FOLLOWING THE TERRORIST ATTACK**
(*\$ Millions*)

	SFY2002	SFY2003	SFY2004
Personal Income Tax	\$927.9	\$2,038.9	\$2,322.3
Withholding	479.8	1,124.4	1,339.2
Estimated Payments	434.6	719.5	760.1
Final Returns	13.5	195.0	223.0
User Taxes and Fees	52.1	116.2	133.8
Business Taxes	131.7	265.7	274.2
Total	\$1,111.7	\$2,420.8	\$2,730.3

Although the national recession was underway months prior to the attack, the state's economic prospects weakened after September 11. Our preliminary estimates take into account the elements of economic weakness directly associated with the attack as well as secondary impacts coming from the resulting reduction in DRI•WEFA's economic outlook by early November. The following lists show the major elements that impact our estimate on State tax revenues, categorizing them as to their source—either directly from the terrorist attack or the further slowing in the national economy outlook that it caused.

KEY ELEMENTS AFFECTING STATE TAX REVENUE COMPARISON

**Elements Resulting Directly From
September 11 Attack:**

- Relocation of jobs from WTC site out of NY State.
- Immediate impact on worker productivity in days following the attack.
- Decline in rental incomes paid as WTC firms relocated.
- Decline in tourism and business travel to NY City and State.
- Decline in sales at Lower Manhattan trade establishments.

**Elements Resulting from Indirect
Economic Weakness:**

- Further reduction in financial sector income and bonuses paid to employees.
- Further reduction in capital gains realizations and exercise of stock options.
- Further reduction in general economic activity in New York City and State.

It is important to understand that the elements shown in the second column had already affected the pre-September 11 Baseline used in calculating the impact on State tax

revenues. By then, the stock market had been declining for a year, and it was clear that bonus payments, financial sector income, capital gains realizations, and the exercise of stock options would fall sharply in 2002. Economic growth had slowed to near-zero and the manufacturing sector had seen a sharp downshift in activity. Following the attack, stock prices dropped further when the markets reopened, and although much of that decline was subsequently recovered, DRI•WEFA expects that stock prices will lag behind our pre-September 11 Baseline through much of next year. Our outlook for the overall economy is similar. Consequently, there is a *further* drop in economic activity related primarily to September 11 which is reflected in the tax revenue impacts presented here.

All told (including both direct and indirect impacts from September 11), DRI•WEFA estimates that New York State's real gross state product will decline by about 1.7% relative to our expectation prior to the attack. Not surprisingly, the drop is largest in the financial-services sector (including finance, insurance, and real estate), whose contribution to gross state product drops by over 4%. The following elements are particularly important contributors to the preliminary tax reductions that we forecast for the State over the coming years.

EMPLOYMENT LOSSES

RELOCATION OF JOBS FROM NEW YORK STATE

Over 80% of our preliminary estimate of the impact on tax revenues flows through a reduction in Personal Income Taxes (PIT). This is due to the relative importance of the PIT to the State, and the relatively high wage earners directly affected by the terrorist attack. Over 73% of the employment directly affected by the attack was in the financial services industry, and if insurance companies are included, then the proportion rises to nearly 88%. Generally speaking, these are relatively high-paying jobs that made up an important part of the State's personal income tax base.

The State's tax base is most directly affected by those jobs relocated from the WTC out of New York State. When we consider just these jobs, the proportion in the financial sector is even higher. Over 90% of the estimated 32 thousand jobs leaving New York are in the financial sector, and if insurance is included, the proportion rises to over 95%. In considering the impact on the PIT, it is clear that most of the jobs immediately lost to New York State are those which, from the standpoint of tax revenues, it least wanted to lose. Not only has the State lost 32 thousand relatively high-paying jobs following the attack, but these also contributed very high levels of gross state product on average. Consequently, the loss of these jobs disproportionately affected both personal income and corporate profits, and the state taxes to be paid on these incomes.

OTHER EMPLOYMENT LOSSES

Beyond the jobs directly affected by the attacks, DRI•WEFA estimates that a total of over 71,000 jobs will be lost following the attacks in 2002 as the direct job and income impacts ripple through the City's economy. For the most part, these losses are in other non-financial sectors, notably retail and wholesale trade, and services. Many of these losses are related to the decline in tourist and business travel that has occurred, and others were in the businesses that serviced the financial-sector firms and their employees in Lower Manhattan. Although many of these jobs will eventually return, we do assume that about 30 thousand jobs have been permanently displaced from New York, and this will have a lasting effect on State tax revenues.

DECLINE IN TOURISM AND BUSINESS TRAVEL

Although the immediate impact of the disaster was on the financial sector located in Lower Manhattan, it is the State's travel and tourism loss that accounts for the largest direct job loss in the short-run. Travel and tourism sector directly employed 468,000 New York State residents last year, and generated State tax revenue of an estimated \$1.6 billion. DRI•WEFA estimates that almost 47 thousand jobs in this sector were lost in the fourth quarter of 2001. These jobs were clustered in hotels and restaurants, museums and other tourist attractions, air transportation, and wholesale and retail trade. Of the 47 thousand jobs lost in the State, 27 thousand are located within New York City.

The good news is that many of these jobs will return in time. In our Current forecast, the initial fourth-quarter drop in tourism and travel-related employment eases significantly in 2002. For the year as a whole, the employment drop relative to our Baseline is less than 20 thousand, and we expect this to fall further to about six thousand jobs in 2003, relative to the Baseline. Business travel will recover along with the economy, particularly during the second half of 2002 and in 2003. At the same time, tourists will also return as they shed their fears of air travel and crowds. In this report, we have recommended that the City and State take the recovery of tourism seriously by developing an enthusiastic policy of promotion along with steps to enhance tourist security. Given such a program, our analysis suggests that while the travel-related impact is significant in the short-run, it has good recovery prospects over the next few years.

RETAIL SPENDING

This recovery in tourism will be equally important for the State's user taxes and fees. Visitor spending in New York State totaled over \$39.5 billion in 2000; we expect this total to decline to an estimated \$34.7 billion in 2002. Most of this spending is subject to sales and other user taxes. The recovery of New York City tourism will help reduce the lasting impact of September 11 on these taxes.

In total, DRI•WEFA estimates a \$3.4 billion hit to retail sales in New York State in 2002, a 1.7% drop compared with our Baseline outlook. In addition to the reduction in tourist spending (especially by foreign tourists, who spend more than two and one-half times on shopping compared with their domestic counterparts), this reduction is accounted for by employees relocated out of New York State, who take most of their retail spending with them, as well as the effects of the decline in general employment and economic activity in the State subsequent to September 11. Additionally, the State's retail sales will suffer to the extent that residents of New York City's out-of-state suburbs continue to be reluctant to come into the city to shop.

RENTAL INCOME

Our preliminary tax impact also includes a reduction of \$132 million in business taxes in 2002 which doubles to \$266 million in 2003. A key component of this decline is a reduction in rental income paid as former WTC tenants relocate. Approximately one-fourth of the jobs relocated from the WTC have moved out of state. But even more importantly, many former WTC tenants have taken up residence in properties they already owned or leased (so-called "backfilling"). We estimate that a total of \$341 million in rental income will be lost annually as a consequence of all these relocations. This reduction will be accompanied by a drop in profits earned by the real-estate sector which makes up an important piece of our estimated decline in business taxes.

PHYSICAL IMPACT OF SEPTEMBER 11 ATTACK

PHYSICAL IMPACT AND DAMAGE ASSESSMENT

The extent of the physical damage created by the September 11 attack is unprecedented during peacetime in the United States. The only recent events arguably comparable in scope are significant natural disasters: Hurricane Andrew in South Dade County Florida in 1992, and the Northridge earthquake in Southern California in 1994. Until the September 11 attack, these events ranked as the two most expensive disasters in U.S. history, costing an estimated \$25 billion and \$20 billion, respectively. With preliminary assessments of total damage in the September 11 attacks on New York running as high as \$60-\$70 billion, the City clearly faces an extraordinary challenge.

A number of simultaneous efforts are presently underway to assess and catalog the full physical extent of the attack on New York. These assessments vary widely for several reasons:

- Much of the impact area continues to be relatively inaccessible, inhibiting on-site damage inspection.
- The complexity of the damage requires extensive engineering efforts to accurately determine the extent of the damage.
- The damage is widespread and its assessment requires the cooperation of affected businesses.
- The degree of damage is broad, ranging from complete destruction to structural damage to façade damage, and the definitions and classifications used vary among assessors.
- Additional façade damage may be precipitated by the freeze-thaw cycle this winter.

In New York City, commercial structures bore the brunt of the physical damage from the attack, though telecommunications, utilities, and transportation infrastructure was also affected greatly as were numerous residential structures in the vicinity of ground zero. Using a variety of independent, survey-based estimates of the impact area, we tentatively conclude that 31 buildings were directly affected by the attack, centered on the six buildings making up the World Trade Center. These 31 properties, which suffered varying degrees of damage ranging from complete destruction to only minor window and façade breakage, collectively account for over 37.2 million square feet of office space.

By any measure these buildings comprise a sizable proportion of downtown Manhattan—by some estimates over 60% of the downtown submarket's Class-A office space—and a fairly sizable proportion of the overall New York office market as well. An annotated listing of these properties, as well as a map detailing the impact area, are shown in the following Table.

However, tenants were not forced to vacate each of these 31 buildings. For the purposes of developing estimates on the impact on employment, we consider a sub-sample of 15 properties carefully tracked via survey by TenantWise.com (and corroborated by other independent information sources). These are designated our "core sample." These 15 buildings constitute properties that were destroyed or severely damaged to the extent that existing tenants were forced to make relocation decisions. These properties total 31.9

million square feet and housed over 650 tenants prior to the attack. The buildings making up this sub-sample are shaded in the Table.

LOWER MANHATTAN BUILDINGS DESTROYED AND DAMAGED

Property Address	Size (square feet)	Status	Damage Assessment	Projected Re-opening
1 World Trade Center	4,761,416	Destroyed		
2 World Trade Center	4,761,416	Destroyed		
4 World Trade Center	576,000	Destroyed		
5 World Trade Center	783,520	Destroyed		
6 World Trade Center	537,693	Destroyed		
7 World Trade Center	2,000,000	Destroyed		
1 Liberty Plaza	2,121,437	Damaged	Building is structurally sound. Some façade and window damage	October-2001
140 Broadway	1,200,000	Damaged		
1 World Financial Center	1,461,365	Damaged	Glass and façade damage	November-2001
2 World Financial Center	2,591,244	Damaged	Glass and façade damage	
3 World Financial Center	2,263,855	Damaged	SE corner is structurally damaged	October-2002
4 World Financial Center	2,083,555	Damaged	Glass and façade damage	November-2001
1 Bankers Trust Plaza (30 Liberty)	1,415,086	Damaged		
101 Barclay Street	1,226,000	Damaged		
22 Cortlandt	668,110	Damaged	Severe window damage, falling glass	March-2002
90 Church	1,126,260	Damaged	Building is safe; renovation underway	April-2002
99 Church	336,000	Damaged		
100 Church	1,030,000	Damaged		November-2002
111/115 Broadway	418,000	Damaged		
75 Park Place	564,145	Damaged		November-2001
140 West	1,171,540	Damaged		
30 West Broadway	381,000	Damaged	Structural columns broken	
195 Broadway	875,000	Damaged		
24-26 Cortlandt	25,000	Damaged		
106 Liberty	18,000	Damaged		
110 Liberty	6,000	Damaged		
130 Liberty	1,415,086	Damaged	Dangling steel pieces and debris from 10th floor	
130 Cedar	135,000	Damaged		
90 West	350,000	Damaged	Major façade damage, no occupancy	
114 Liberty	69,000	Damaged		
195 Broadway	875,000	Damaged		
Total	37,245,728			

The 15 buildings in the shaded section constitute our "core sample" used to track the impact on employment

Aside from the damage to buildings, communications and utilities infrastructures in the World Trade Center area were also greatly affected. Verizon and AT&T reported heavy damage to five major telecommunications switching stations and a substantial amount of commercial networking equipment, including the destruction of 36 miles of communications cabling and 300,000 telephone lines. Con Ed lost two major electrical substations, and the lower Manhattan local distribution system was damaged to the extent that one substation will need to be rebuilt by next summer to avoid severe power outages as demand peaks then. Con Ed also reported the loss of 33 miles of electrical cable.

The public transportation system in the area was also devastated. The Port Authority Trans-Hudson (PATH) commuter line to New Jersey was rendered virtually unusable when the trade towers collapsed on top of the WTC PATH station, while the WTA and Transit Authority report that the Number 1 and Number 9 subway lines were severely disrupted. Adequate public transportation access to lower Manhattan will be an important element of rebuilding the environment for future business in the area.

MAJOR EMPLOYERS AFFECTED

The individual firms that suffered the largest share of the impact include some of the best know names in financial services. The following table shows the 30 largest firms by job count, based upon estimates of their employment prior to September 11. This table is based upon available data from TenantWise.com, which actively tracks all of the 187 non-governmental tenants in the core sample of properties occupying more than 10,000 square feet of space.

Financial firms, led by major investment houses, dominate this list. They include Merrill Lynch, Bankers Trust/Deutsche Bank, Bank of New York, American Express, Salomon Smith Barney, Lehman Brothers, Morgan Stanley, and CIBC World Markets. Indeed, Merrill Lynch alone accounted for nearly 10% of the impacted jobs in our core sample—all of which have left New York State. Collectively, the Top 30 firms represent over 63,200 jobs—or nearly three-quarters of all the affected large firm employment. Of this, over 18,700 jobs are confirmed to be leaving New York State, a significant number of which are high paying positions. Overall, we estimate that a full 30% of the jobs from the Top 30 firms have departed New York State, or will soon do so.

Of the Top 30 companies, significant non-financial firms include the law firm of Cleary, Gottlieb, Steen, & Hamilton (1,120 jobs), Moody's Investor Services and Dow Jones & Co. (business services firms with a combined 1,842 jobs), and Verizon Communications (622 jobs). None of these firms are reported to be leaving New York State.

**TOP 30 COMPANIES IMPACTED BY SEPTEMBER 11 ATTACK
RANKED BY EMPLOYMENT**

Rank	Company	Sector	Total Employment	Percent of Total	Leaving NY	Percent Leaving NY
1	Merrill Lynch	Financial	8,334	9.8%	8,334	100%
2	Bankers Trust/Deutsche Bank	Financial	6,756	8.0%	-	0%
3	Bank of New York	Financial	6,205	7.3%	-	0%
4	American Express	Financial	5,218	6.1%	3,021	58%
5	Salomon Smith Barney	Financial	4,812	5.7%	3,208	67%
6	Lehman Bros	Financial	4,123	4.9%	-	0%
7	Morgan Stanley	Financial	3,360	4.0%	1,120	33%
8	CIBC World Markets	Financial	2,000	2.4%	250	13%
9	Empire Health Choice	Insurance	1,844	2.2%	231	13%
10	Brown Brothers Harriman	Financial	1,720	2.0%	-	0%
11	Merrill Lynch & Co Inc.	Financial	1,680	2.0%	-	0%
12	Marsh USA	Financial	1,444	1.7%	-	0%
13	Guy Carpenter	Insurance	1,280	1.5%	-	0%
14	Cleary Gottlieb Steen & Hamilton	Legal Services	1,120	1.3%	-	0%
15	Moody's Investor Services	Business Services	1,072	1.3%	-	0%
16	Goldman Sachs & Co.	Financial	1,040	1.2%	-	0%
17	Fiduciary Trust Company International	Financial	981	1.2%	-	0%
18	Cantor Fitzgerald Securities	Financial	980	1.2%	653	67%
19	Oppenheimer Funds, Inc.	Financial	924	1.1%	231	25%
20	Brown & Wood, L.L.P.	Financial	892	1.1%	112	13%
21	AON Corporation	Financial	877	1.0%	110	13%
22	Bank of Nova Scotia	Financial	840	1.0%	-	0%
23	Gruntal & Co	Financial	807	1.0%	-	0%
24	Fidelity Investments National Financial Services Corp.	Financial	772	0.9%	-	0%
25	Dow Jones & Co.	Business Services	770	0.9%	257	33%
26	Fuji Bank	Financial	732	0.9%	732	100%
27	Credit Suisse First Boston	Financial	717	0.8%	-	0%
28	Royal Bank of Canada	Financial	657	0.8%	328	50%
29	Nasdaq	Financial	644	0.8%	161	25%
30	Verizon Communications	Communications	622	0.7%	-	0%
Top 30 Totals			63,223	74.5%	18,747	30%

PHYSICAL COSTS

The costs of cleaning up Lower Manhattan following the September 11 attacks will encompass a broad variety of activities. Expenses will include the cost to remove the debris, victim assistance and support services, infrastructure repair, and spending to enhance security. Early estimates compiled in September and October by the New York State Division of the Budget, the New York City Mayor's Office, and the New York City Office of the Comptroller indicate the cost of basic rescue, recovery, and rebuilding of Lower Manhattan to be \$32.0 billion, \$33.8 billion, and \$51.8 billion, respectively (see following table). Obviously, these totals can only be a very rough first cut at estimating the actual

costs of cleanup. Additional detail regarding physical cost estimates are provided in the Appendix.

ESTIMATED PHYSICAL COSTS OF THE WORLD TRADE CENTER ATTACK*
(Billions)

	Governor	Mayor	NYC Comptroller
Rebuilding WTC and Lower Manhattan	\$11.8	\$11.8	\$31.2
World Trade Center and Hotel Space Replacement	8.3	8.3	6.7
Equipment, Lost Inventory and Renovation	2.4	2.4	11.5
Other Buildings, Structural Remediation	1.1	1.1	13.0
New York City Infrastructure	\$7.9	\$7.4	\$7.4
Metropolitan Transportation Authority (MTA)	3.7	4.1	3.0
Port Authority	2.5	2.4	2.4
Utility and Other Infrastructure Costs	1.7	0.9	2.0
Emergency Response	\$14.1	\$12.9	\$13.2
Emergency Construction Costs (debris removal etc.)	5.0	7.0	6.0
NYC Emergency Protective Measures (city agency costs)	5.1	5.2	7.2
Other (including State agency costs)	4.0	0.7	0.0
GRAND TOTAL	\$33.8	\$32.0	\$51.8

*The NYC Comptroller estimates that \$17 billion of the property loss/damage is covered by insurance. This figure does not include health, life, earnings, or other insurance which may also be available.

COMPENSATION

New York is not without financial help. Considering federal disaster aid, private insurance payments, and charitable contributions, most of the immediate costs of the disaster to the City and its citizens will be covered. The large federal budget surplus has made it easy for Washington to pitch in with substantial financial aid, not only to the City but even to some of the industries most directly affected by the disaster. Also, because most of the damage was to large business properties and operations, insurance will cover a good deal of the private costs of the attack.

Both the political and popular will to help the City and its residents is strong and enduring—a consequence of the horrific nature of the attack and its consequences. This is especially reflected in the unprecedented amount of private charitable contributions made since the attack to support its victims (over one billion dollars by the end of November). As detailed below, New York City, its workers, and its residents are likely to find the help they need in meeting the immediate costs associated with the disaster. However, many of these payments will take time to come, and there is a role for the local and federal governments in ensuring that assistance is available to those whose damage claims take time to resolve.

INSURANCE CLAIM PAYMENTS

The scale of the disastrous attacks in New York dwarf that of the previous largest insurance loss, that from Hurricane Andrew in South Dade County Florida in 1992. The attacks are far reaching in breadth of insurance lines affected, as well as being the first catastrophic event for life insurance and workers' compensation insurance. Estimates of total insurance claims to survivors, property owners, businesses, and airlines vary widely, in a range of \$30 billion to as high as \$70 billion. Consensus estimates, though, fall within a range of \$35 billion to \$55 billion. These insurance claims will offset a large portion of the financial loss borne by those affected, and to the extent that lower Manhattan is repaired and rebuilt, and that its former tenants return, much of these claims will be spent in New York.

Despite the tremendous demands placed on the insurance industry, companies have indicated their willingness and ability to meet the claims stemming from this tragedy. By mid-November, \$16.6 billion in claims had already been received, with \$16 billion of this coming from commercial property damage claims. This means that one-half to one-third of total claims are already in the process of being evaluated and on their way towards being settled.

Despite this progress, a number of claims will take time to evaluate, and some of these will require a court decision to finalize. This can take years—some of the claims from the 1993 bombing of the WTC are unresolved to this day—and in these situations, local and federal governments must be sure to make resources available to claimants facing cash-flow deficits while their claims are under consideration.

In addition to the insurance claims that will be paid to victims' families and affected businesses, there are several other sources of compensation. In many cases, claimants are also entitled to receive aid from the federal government and many special charities. In estimating payments to be made by insurance companies and other sources below, we have netted out estimated payments from other sources so as not to double-count the level of compensation that may be received.

SUMMARY OF ESTIMATED INSURANCE PAYMENTS

Type of Insurance	Estimated Payments
Life Insurance	\$4 - \$6 billion
Commercial Property	> \$17 billion
Personal Property (Contents)	\$2 - \$3 billion
Automobiles	\$90 million
Airline Liability	\$6 billion
Aircraft Insurance (Broad Hull Coverage)	\$434 million
Workers' Compensation	\$1.3 - \$4 billion
Business Interruption Insurance	\$5 - \$18 billion
TOTAL	\$36 - >\$54 billion

LIFE INSURANCE

While the lives lost on September 11 are the most incalculable loss of all, life insurance claims will be among the smallest of the various lines of insurance. These payments are also among the most easily estimable. At the end of November, the Mayor's office was estimating 2,936 New York Fatalities. Most insurance experts expect claims ranging from \$3 billion to \$4 billion, although the National Association of Insurance Commissioners (NAIC) estimates only \$900 million, an estimate that seems low considering that many victims were highly-paid workers of financial firms that offered favorably-priced life insurance benefits to their employees.

In the interest of expediting these claims, Governor Pataki signed an Executive Order to expedite the issuing of death certificates, as did the New Jersey Supreme Court. Even so, many life insurance companies are waiving the requirement for a death certificate, relying instead on sworn affidavits, employer statements, and confirmation from insurance agents. Payments to victims' families may therefore be processed and paid more quickly. However, it is difficult to judge how much of the total life claims may benefit New York State. By one estimate, approximately 40% of World Trade Center employees lived in New Jersey.⁶ Additionally, it is likely that some number of other employees lived in New York only because of their jobs, and that their survivors are likely leave the State in the months to come. By this reckoning, it is possible that perhaps half of the personal life claims paid will not ultimately accrue to New York State residents.

It is quite likely that the life insurance industry will experience an increase in demand in the aftermath of this tragedy, as more people reevaluate their life insurance needs. Indeed, many insurance companies already report a sharp increase in life insurance inquiries, especially among age groups that have traditionally been smaller purchasers. Because the insurance industry is relatively important to New York—the State accounts for almost 10% of total insurance sector employment—the State's economy and tax revenues may ultimately benefit from this additional business.

PROPERTY AND CASUALTY

In terms of dollar value, commercial property owners will receive the largest insurance payments. Estimates for total commercial property claims is beyond \$17 billion; damage to the World Trade Center alone is estimated at \$5.5 billion. Most of this money should be spent in New York State assuming that real estate owners rebuild and repair their facilities.

⁶ J.W. Hughes and J. J. Seneca, eds., *Sitar-Rutgers Regional Report*, November 2001, p. 2.

The business and personal non-building property that was lost is estimated to be in the range of \$2 to \$3 billion. By mid-November, \$550 million in personal property claims had already been filed. In addition to the contents that were located in buildings, an estimated 3000 cars were destroyed or damaged in New York City. Total insurance payments for these automobiles are estimated at \$90 million, with \$40 million already claimed by mid-November.

The airline industry has two types of insurance. The liability and bodily insurance, for which the government has already legislated a cap of \$1.5 billion per plane, differs from the insurance for the airplane itself. This broad hull coverage is expected to generate insurance claims of \$434 million, based on the replacement costs of Boeing 757 and 767 airplanes.

Commercial property owners and businesses are also expected to review their need for insurance coverage, and to increase demand for coverage. The extent to which this will increase demand for the insurance industry is questionable, though. Many insurance companies are considering the exclusion of terrorist attack coverage from future policies, limiting the amount of coverage they will offer, and raising property rates sharply (see below).

WORKERS' COMPENSATION

While smaller than many of the other types of insurance claims, never before has an event prompted such a large amount of workers' compensation claims. Practically all of the 3,900 victims and the 8,000 injured in New York City were employed within the State. Estimated insurance claims are within a range of \$1.3 billion to \$4 billion.

BUSINESS INTERRUPTION

An estimate of the total claims that will be paid under business-interruption policies is the most difficult to make. Not only is the extent to which business-interruption policies were in force unknown, but the types of coverage varied notably as well. Businesses that were forced to close because of physical destruction, damage, or the elimination of access to their location, are eligible to collect under business interruption insurance if they had purchased it. Other types of business disruptions, however, may not be eligible. Many area businesses reopened in the weeks following the tragedy, but experienced lost business because customers will be unable or unwilling to come back. The eligibility of claims for this type of business loss is more difficult to assess. Likewise, business-interruption claims due to event cancellation are not straightforward. For these reasons, estimates of business-interruption insurance payments in New York range from \$5 billion to \$18 billion.

INSURANCE PREMIUM INCREASES

The enormous payments that insurance companies are required to make in the aftermath of the attack gave rise to initial fears that the industry could be financially vulnerable. However, industry leaders have reassured investors and clients that, overall, their finances are sound and they will be able to fulfill their obligations. Moreover, the industry will benefit from a spate of premium hikes in the aftermath of September 11. Insurance company stock prices collapsed in the week following the attack, but have since recovered as premiums began to rise sharply, particularly for property and casualty lines.

After ten years of intense price competition had held insurance premium prices nearly constant, premiums began rising in early 2001 by an average of about 15%. However, after Sept. 11, premium price increases have jumped far higher. Rate increases will vary,

with the highest increases expected for workers' compensation (an estimated 20%) and commercial property (30-50%). High-rise buildings in Manhattan potentially face insurance premium hikes as high as 100%, as does coverage for geographically concentrated buildings.

With an estimated 70% of commercial insurance policies up for renewal between September 11 and the end of the year, the effect of these price increases will be far-reaching. These premium price increases are expected to boost profits in insurance companies by perhaps 20-25% in 2002. Additionally, many insurance companies are limiting their future liability of property coverage or specifically excluding terrorist activities from their policies. Although these restrictions may eventually be lifted under a new federal government option to cover the costs associated with any future terrorist activities, there is no question that all business will face significantly higher premium increases at their next policy renewal.

With a significant concentration of insurance business located in New York State, rising industry prosperity will benefit the State's economy as well as prospects for its future tax receipts. New York State accounts for almost 10% of total insurance sector employment. This is the highest proportion than all but one other state. Increased income generated by the sector in 2002 and beyond may provide some respite from the State's costs associated with the September 11 attacks.

FEDERAL AID

The U.S. Congress quickly established a special fund of \$15 billion in federal aid that will be paid to the families of victims of the terrorist attacks. Federal programs already in place provide for the families of uniformed victims, and these payments were also increased. Families of fire fighters and police will receive a one-time, tax-free payment of \$250,000, as well as a monthly stipend to help with college expenses. This is in addition to other government aid such as the New York City policies and the New York Memorial Scholarship for surviving dependents' college tuition.

A few days after the attacks, President Bush promised that New York City would receive \$20 billion in federal aid, part of a \$40 billion plan for emergency defense spending. As of late November, the City had received \$3.2 billion, with another \$6 billion waiting to be transferred by the end of the year. Following additional lobbying to increase this amount, an additional \$1.75 billion is scheduled will be sent to the City this year, bringing federal aid in 2001 to \$11 billion. The rest of the \$20 billion promised will be paid in 2002. Several lobbies continue to push for additional federal aid.

Two industries suffered immediately from the brunt of the attacks: airlines and insurance. The federal government agreed to aid to the airlines industry, which incurred heavy costs and lost revenue when the air transportation system was shut down in the wake of the attack. The federal government has promised \$5 billion in aid and another \$10 billion in loans to the industry.

For its part, insurers are concerned about potential liabilities from future terrorist attacks. While the industry expects to weather the demands stemming from September 11, additional large-scale terrorist attacks in the next year or so could put the industry in a difficult financial position. In order to preserve the industry and encourage insurance companies to continue to price risk and offer policies, the federal government is weighing several different options that would support the insurance industry in the case of future terrorist attack liability.

CHARITIES

In one of the largest outpourings of contributions, over \$1 billion has already been pledged to over 200 charities that are supporting victims from September 11. Two charities collected 70% of these donations: the American Red Cross has raised over \$550 million to date, while the September 11th Fund, a joint venture between the United Way of New York City and New York Community Trust, has raised \$337 million. Much of this money remains to be distributed. As of Oct. 30, the September 11th Fund had distributed \$34.4 million to local agencies connected with meeting New Yorkers' needs. At that point, the American Red Cross had also distributed \$153.3 million in aid.

Payments from the various charities are proceeding. The Twin Towers Fund, which collected over \$95 million, is a charity set up to assist the families of uniformed and other City workers. It has begun to issue initial payments to all the families, with additional payments pending based on need.

The State charity, the World Trade Center Relief Fund, will also distribute \$30 million of the \$35 million it collected by late November. Initial payments of up to \$5,000 will be sent to 800 families, with another 3,000 families eligible.

APPENDIX—PHYSICAL COST ESTIMATES

RESPONSE AND CLEANUP COSTS

Early estimates compiled in October by the New York State Division of the Budget, using figures provided by the New York City Mayor's Office, indicated the cost of basic rescue, recovery, and rebuilding of Lower Manhattan to be \$32.0 billion. Obviously, due to the nature of the attack and uncertainty as to what damage lied below the ground at the site, these totals were a very rough first cut at estimating the actual costs of cleanup. For example, the \$5 billion for emergency construction costs listed in the chart below has subsequently been revised to \$1 billion.

SUMMARY OF IMMEDIATE RESPONSE AND CLEANUP COSTS	
Costs	\$ Millions
Emergency Construction Costs	\$5,000
NYC Emergency Protective Measures	\$5,138
Utility Infrastructure Costs	\$900
NYC Victim Assistance, Citywide Support Services	\$378
NYC Other Costs	\$323
Total	\$11,739

Source: New York State Division of the Budget

WTC SITE

According to the New York State Division of the Budget the Ground Zero cleanup will cost an estimated \$5 billion. This cost includes demolition, debris removal, and the stabilization and remediation of the area. Funding for these efforts will come from the federal government through FEMA's Public Assistance Program less any available insurance claims.

REMEDIATION OF DAMAGED BUILDINGS

By our count, a total of 37.2 million square feet of office space was destroyed or damaged as a result of the attacks. The six destroyed World Trade Center buildings account for about half of this. A study by McKinsey & Company estimates that 10.1 million square feet of office space was damaged and can be reoccupied this year. The report also estimates that 3.5 million square feet will require at least a year's worth of repairs. Total repair costs are estimated at a minimum of \$2.2 billion on this space. In addition, approximately a half million square feet of retail space was damaged. Some of these costs will be covered under insurance; the remaining costs are expected to be funded from federal sources. Consequently, this figure is not included in the \$11.7 billion estimate of cleanup costs shown in the table above.

UTILITY INFRASTRUCTURE STABILIZATION

Two substations were destroyed when the Twin Towers collapsed. For now, Consolidated Edison has laid 33 miles of high voltage cable to restore power to area buildings, much of it temporarily placed in above-ground wooden structures. This temporary power

infrastructure and eventual substation repairs will cost the City \$900 million according to the Division of the Budget. Normally, work to rebuild the destroyed substations would not be able to proceed until after the WTC site is cleared. However, peak warm-weather power needs in Lower Manhattan suggest that at least one new substation needs to be available by this summer to avoid brownouts and outages in the area.

VICTIM ASSISTANCE

Victim assistance extends not only to the families of victims of the Trade Center attacks, but also to businesses, non-profit institutions, and governments affected by the disaster. The New York State Division of the Budget's estimate of victim assistance costs stands at \$378 million. Federal disaster assistance has covered victim assistance costs to date and is expected to continue to cover these costs.

SECURITY

Security costs are the largest single cleanup cost at \$5,138 million. Most of this expenditure will cover police and fire overtime, additional emergency services, and increased security measures both around ground zero and other NYC sites such as airports, train and bus stations, and public attractions.

OTHER COSTS

Other City costs include burial costs, replacement of roads and other infrastructure, and the replacement of lost emergency (fire, police, rescue, ambulance) equipment. These costs are currently estimated at \$323 million.

REDEVELOPMENT COSTS

Redevelopment costs are difficult to estimate due to the uncertainty over what facilities will eventually be constructed in the area. Some portions of the redevelopment costs will be easier to pinpoint, however. At the minimum, the roads, tunnels, and mass transit infrastructure that were destroyed will have to be rebuilt. Buildings that were damaged will be repaired. Estimates by McKinsey & Company published in the New York City Partnership report *Economic Impact Analysis of the September 11 Attack on New York City* calculate a cost of \$6 billion to replace the office space that was destroyed, and an additional minimum of \$2.2 billion to repair buildings damaged in the attacks. The New York State Division of the Budget estimates that the redevelopment of lower Manhattan will cost \$18.8 billion.

SUMMARY OF REDEVELOPMENT COSTS

Costs	\$ Millions
NYC Infrastructure	\$300
NYS Department of Transportation	n/a
Metropolitan Transit Authority	\$3,206
Port Authority of New York and New Jersey	\$2,704
Replacing Office and Hotel Capacity	\$11,736
Total	\$17,946

Source: New York State Division of the Budget

INFRASTRUCTURE

Repairs and rebuilding of water mains, sewers, and roads damaged in the attacks will cost an estimated \$250 million. Much of this repair and rebuilding cannot begin until the WTC site has been cleared.

CITY UNIVERSITY OF NEW YORK

The City University of New York suffered some lost and damaged facilities as a result of the attacks. Replacement of lost facilities will cost an estimated \$50 million.

PUBLIC TRANSPORTATION

The Metropolitan Transportation Authority (MTA) sustained significant direct damage in the attack. Direct damage includes:

- > Collapse of 1,700 feet of subway tunnel serving the number 1 and 9 lines.
- > Destruction of signal, communications, and power equipment.
- > Loss or damage of four subway stations.
- > Destruction of bus and other surface vehicles.

The estimate to repair/reconstruct these facilities is \$855 million.

As a result of the disrupted service in the area of the WTC, the MTA estimates that it will incur \$144 million in extraordinary operating costs through 2002 to fund disaster-related cleanup, security, traffic management, customer information, and equipment support activities.

Beyond this, the MTA estimates an additional \$1.87 billion impact on its capital program. These funds will be used to fund safety and security projects and to ensure the compatibility of the reconstructed facilities with the existing transportation network.

The MTA will suffer indirect effects of the attacks in addition to the repair of physical damage. The MTA receives subsidies from local mortgage and business-related taxes, which will be down by an estimated \$66 million through 2002 as a result of the disaster. Ridership and the associated fares will be down as well until facilities are rebuilt. The MTA estimates that it will lose \$273 million in forgone tolls and fare revenues through 2002.

The MTA has \$1.5 billion of property damage and revenue loss insurance. However, it is clear that much more than that will be needed to rebuild the necessary transportation infrastructure. The City and the State have included these costs in their request for federal aid.

MTA RECONSTRUCTION COST SUMMARY

Costs	\$ Millions
Direct Infrastructure Damage	\$855
Disaster-related Operating Costs	\$144
Capital Costs for Safety, Security and System Compatibility	\$1,868
Reduction of Tax Subsidies Due to Economic Disruption	\$66
Toll and Fare Revenue Loss	\$273
Total	\$3,206

Source: Metropolitan Transportation Authority

PORT AUTHORITY

The Port Authority of New York and New Jersey owned the World Trade Center complex. Reconstruction costs for the complex itself are not included in this analysis, because it is uncertain what will be constructed there after the cleanup has been completed. Insurance will be available to cover some of the reconstruction costs, but until plans have been made, there is no way to know whether the insurance funds will be adequate to cover the rebuilding.

In addition to the loss of the WTC complex, the Port Authority sustained significant losses including a power substation, the PATH subway station, office equipment, computer systems, vehicle fleet, E-Z Pass systems and telecommunications equipment that were located in the WTC complex. The cost to replace all of this physical infrastructure is estimated at \$1,220 million.

As with the cleanup costs, the single largest cost of reconstruction will be in the implementation of security enhancements to protect commerce and to ensure public safety. The Port Authority is responsible for security at area airports, port facilities, tunnels, bridges, and terminals, and estimates that security enhancements will cost \$1.3 billion.

The Port Authority will also suffer revenue losses as a result of the disaster. Income from the Authority's airports, shipping ports, and bus terminal is estimated to be off by \$54 million. Reduced traffic levels and ridership will cost the Authority \$105 million in lost tolls and fare revenues, bringing total revenue losses to \$159 million.

The Port Authority has \$1.5 billion of property damage and revenue loss insurance per occurrence, but it is clear that the total impact will exceed any available insurance coverage. The balance has been included in the City's request for federal funds.

PORT AUTHORITY RECONSTRUCTION COST SUMMARY

Costs	\$ millions
PATH Subway Station Reconstruction	\$850
Replacement of Computer Systems, Office Equipment, and Vehicle Fleets	\$150
Ferry Service Restoration and Commuter Substitution	\$100
Replacement of Authority-Owned Power Facility	\$90
Replacement of E-Z Pass and Telecommunications Equipment	\$30
Cost of Security Enhancements	\$1,325
Revenue Losses Directly Attributable to Disaster	\$159
Subtotal Port Authority Costs	\$2,704

Source: New York State Division of the Budget

SUMMARY OF PRELIMINARY COST ESTIMATES

As detailed above, the preliminary cost estimate to bring lower Manhattan back to its pre-attack economic status is \$29.7 billion. This includes the costs of clean up and redevelopment.

PRELIMINARY COST ESTIMATE-SUMMARY

Costs	\$ millions
Basic Rescue, Recovery and Rebuilding:	
Immediate Response	\$11,739
Redevelopment of lower Manhattan	\$17,946
Total Estimated Cost	\$29,685

Source: New York State Division of the Budget

PREPARED STATEMENT OF HON. JOSEPH E. STIGLITZ,¹ NOBEL LAUREATE, PROFESSOR,
COLUMBIA UNIVERSITY, NEW YORK, NY

Thank you for this opportunity to discuss with you the economic costs of the Iraq War. March 19 marks the fifth anniversary of what was supposed to be a short venture to save the world from the threat of weapons of mass destruction—which simply weren't there. It is now the second longest war in America's history, and, after the all-encompassing World War II, the second most costly, even after adjusting for inflation. In terms of costs per troop, it is by far the costliest—some eight times as expensive as World War II.

A WAR FOR DEMOCRACY

Before turning to the costs beyond the Federal Budget, I want to make three prefatory remarks. We went to war to fight for democracy; but democracy is more than just periodic elections. It involves broader notions of democratic accountability. Citizens have the right to know what they are spending their hard earned dollars on. They have a right to know what their government is doing and the consequences of its actions. Over the past 2 years, I have worked with a colleague at Harvard, Linda Bilmes, to estimate the full costs of the Iraq war. We published our initial study in January 2006, and I would like that paper to be entered into the record. We published a second study, concerning the costs of providing medical care and disability benefits to our returning veterans, in January 2007. I would ask for that to also be entered into the record. We have now published a book, *The Three Trillion Dollar War*, which estimates the true costs of the war, the veterans' costs, and the impact on the U.S. economy. I want to point out that it required an enormous amount of work to write our book. We should not have needed to write it, and when we came to write it, it should have been a far easier task. The Administration and Congress should have provided these numbers to the American people. Five years after the beginning of this war, you should not be funding this war with emergency appropriations, which escape the normal budget scrutiny. We should not have had to resort to the Freedom of Information Act to find out how many Americans have been injured in this war. This Administration has said that it will provide everything that our troops need. We should not have had to use the Freedom of Information Act to discover that more than 3 years ago, senior officers in the Marines were already sending urgent requests for MRAPs—which would have saved the lives of a large fraction of those killed if we had provided them at that time.

THE SOARING BUDGETARY COSTS

The second remark is that the budgetary costs themselves have been enormous—far, far larger than the some \$50 billion that the Administration estimated at the beginning of the war. We are now spending that amount in operations every 3 months. But the costs to the Federal Budget are far larger than the day-to-day operational costs. The war has raised overall military costs: we have to pay more to recruit and retain our troops, and even with these increased expenditures, standards for recruits have had to be lowered. It will be costly to restore our military to its pre-war standing, both in terms of personnel and materiel. There are costs hidden in other parts of the budget—not only are the direct costs of the contractors high, especially as a result of single source contracting and low levels of oversight (the defense contractors and oil companies have been the only true winners in this war, evidenced by what has happened to their stock prices), but we are also paying for the contractors' insurance for death benefits and disability. Even with these high insurance premiums, remarkably the government often winds up paying the benefits as well. In our calculations, we have not included the full costs of these, simply because it is impossible for ordinary citizens to find out what they are.

The most important costs that go well beyond the operational costs are the expenditures required to provide health care and disability for returning veterans. These are likely to be very, very high, and we will be paying these bills for decades to come. Almost 40 percent of the nearly 700,000 troops who fought in the 1 month long Gulf War have become eligible for disability benefits, and we are paying more than \$4 billion a year for disability benefits from that short war. Imagine, then, what a war that will almost surely involve more than 2 million troops and will almost surely last more than 6 or 7 years will cost. Already, we are seeing large numbers of returning veterans showing up at VA hospitals for treatment, large numbers applying for disability, and large numbers with severe psychological problems. These problems increase disproportionately with every tour of duty and with longer

¹University Professor at Columbia University and Chair of the Committee on Global Thought.

tours of duty; and with more than one-third of our men and women being asked to do two or three tours of duty, the numbers will almost surely mount. While in previous wars, the ratio of injured to fatalities was 2.5 to 1, in this war it is 7 to 1, and if we include those that have to be medically evacuated because of what are classified as non-hostile accidents or illnesses, the ratio soars to 15 to 1. Many of the injuries are horrific and will require a lifetime of care. It is a testimony to modern medicine—though clearly we could have done a lot more to spare our troops than we did. Most of the costs will be borne by the VA, but there will be a burden on our social security system as well. We have estimated the total costs (in present discounted value terms) in what we call our “realistic” (but still highly conservative) scenario as \$630 billion.

BILLS WE WILL BE PAYING FOR DECADES

My third prefatory remark is this: we will be facing these budgetary costs for decades to come. Even the CBO methodology, which looks 10 years into the future, is too short-sighted for these liabilities which we have incurred. In the case of World War II veterans, VA expenditures peaked more than four decades after the cessation of hostilities. Furthermore, because the Administration actually cut taxes as we went to war, when we were already running huge deficits, this war has, effectively, been entirely financed by deficits. The national debt has increased by some \$2.5 trillion since the beginning of the war, and of this, almost \$1 trillion is due directly to the war itself. But the meter is still ticking. By 2017, we estimate that the national debt will have increased, just because of the war, by some \$2 trillion.

There has been much discussion of unfunded entitlements in recent years. This war has created a new unfunded entitlement—future benefits of Iraqi veterans that may total a half a trillion dollars or more. But this is an entitlement which they have earned, and from which we should not, we cannot walk away. What we should do, now, is to recognize the financial obligations that we have incurred, that we are incurring today, and that we will incur before this War is over, and fully fund them. These obligations are much like deferred compensation: we require private firms to fully fund such obligations, and for good reason. There should not be a double standard.

When, of course, we add together all of these costs of the war, we are talking about *budgetary* impacts that are not just \$12 billion a month (or \$16 billion if we include Afghanistan), but greater than that by at least 40 percent. Our full cost of the war—our \$3 trillion dollar tally—is twice the direct operational budget. We should remember that every month we stay in Iraq and Afghanistan is really costing us some \$22 billion; every year, more than \$250 billion. In another 2 years, the tally will exceed another half trillion.

MICRO-ECONOMIC COSTS

The focus of my remarks today, however, is on the large costs that go beyond these budgetary costs. We classify these into two categories, micro-economic costs (to individuals, especially to the troops that have served us so well and their families, and to firms) and macroeconomic costs (to our overall economy, today and into the future).

We have consistently understaffed, underinvested in, and underfunded the medical and disability programs that serve our veterans. As a result, our servicemen and women returning from the battlefield in Iraq often face a new battle—with the bureaucracy to get the benefits to which they are entitled and which they deserve. When they cannot get the health care to which they are entitled, or they have to wait months just to schedule an appointment to see a VA doctor, those who are fortunate enough to have families who can afford to do so, pay for it on their own. This doesn't diminish the cost to society; it just shifts the burden from the Federal budget to these people who have already sacrificed so much.

There are other ways in which the costs to society exceed the costs to the budget, often by considerable amounts. When the government evaluates whether a safety regulation is worth instituting, it balances the costs with the benefits, that is, the savings in lives; as unpleasant as it may seem, it places a dollar value on people's lives, which includes the loss in output. The typical numbers, called the value of statistical lives, are \$7 to \$8 million. But to the budget, the cost of the life of a troop is only the \$500,000 death benefit. I have already noted that in this war, we have been penny wise and pound foolish—a little extra spending earlier on would have made the war, in the short run, seem more costly, but it would have saved us billions in the long run. But the billions that it would have saved the budget pale in comparison to what it would have meant to those who have died unnecessarily or who face a lifetime with disabilities far worse than needed to have been the case.

I am not a lawyer, but I do know this: any private employer who had acted in this way, with consequences as serious, would be liable for a suit for gross negligence.

There are other costs: for instance, the Dole-Shalala Commission estimated that in one of five families with a seriously disabled veteran, someone in the family has to give up their job to provide the necessary care.

Some of the costs are hard to quantify, but nonetheless real: Reservists and members of the National Guard who are forced to serve in Iraq find their lives and careers interrupted. Their employers lose the services of these often highly valued employees.

Economists emphasize the concept of *opportunity costs*. Resources devoted to the war could have been used for other purposes. One of the main responsibilities of the National Guard is to serve as a *first responder* in times of an emergency; their services are invaluable, and when they are not available—because they are in Iraq—everyone suffers when an emergency occurs. We saw that so clearly in Hurricane Katrina.

More broadly, we are today less equipped to handle a variety of challenges that might arise. If we are lucky, we may muddle through. We may not be so lucky. Already, one of the opportunity costs is apparent: while we were focusing on the weapons of mass destruction that did not exist in Iraq—and that we should have known did not exist—a new country joined the Nuclear Club.

Our country and our businesses are suffering due to America's changed standing in the eyes of the world because of the war and the way it has been conducted, as shown in survey after survey. These surveys show a clear relation between attitudes toward America more generally and attitudes toward American businesses. In many quarters, the supposed war for democracy has even given democracy a bad name.

I have, so far, emphasized the direct economic costs as well as the *opportunity costs*—the diversion of funds that could have been used in so many other and better ways. I would be remiss, however, if I did not note that there are other costs: in the long run, the squandering of America's leadership role in the international community, the diversion of attention from critical global issues, including issues like global warming and nuclear proliferation in North Korea—that simply won't go away on their own, and that cannot simply wait to be addressed—may represent the largest and most longstanding legacy of this unfortunate war.²

MACRO-ECONOMIC COSTS

Finally, I want to turn to the macroeconomic costs. First, I want to dispel a widespread misconception that wars are good for the economy—a misconception that arose from the role that World War II played in helping the US emerge from the Great Depression. But at least since Keynes, we know how to maintain the economy at or near full employment in far better ways; there are ways of spending money that stimulate the economy in the short run while at the same time leaving it stronger for the long run. This war has been especially bad for the economy. Some of the costs are becoming apparent only now; others we will face for years to come.

There are four major categories of macroeconomic impacts. The first is through the war's effect on oil prices. Before the war, 5 years ago, the price of oil was under \$25 a barrel. As you know, now it has hit \$100 a barrel. Before the war, future markets expected the \$25 price to persist for at least a decade. Yes, there would be increased demands from China and India; but in well-functioning markets, supply responds to meet new demands. With large supplies and low extraction costs in the Middle East, markets expected production would increase in tandem with demand. The war changed this equation. How much of the increased price should be blamed on the War? In our book, we have taken a very conservative position that only \$5 to \$10 of the increase is due to the war, and that the price increase will last for only 7 to 8 years. We think those assumptions are unrealistically conservative. For instance, futures markets today expect that the price will remain in excess of \$80 for at least the next decade. We chose to be excessively conservative, simply because we did not want to have an unnecessary squabble: as it was, even with these very conservative estimates, the costs of the war are vastly higher than its advocates were willing to admit. (Even the CBO, at the time we did our earlier study in 2006, was projecting that the total cost of the war would amount to only a half trillion dollars, still ten times greater than the Administration had estimated at the begin-

²This is a point that even conservative commentators have emphasized. Anne Applebaum, for instance, noted that "Countries that would once have supported American foreign policy on principle, simply out of solidarity or friendship, will now have to be cajoled, or paid, to join us. Count that along with the lives of soldiers and civilians, the dollars and equipment—as another cost of the war." Anne Applebaum, "Why They Don't Like Us," *Washington Post*, October 2, 2007, p. A19.

ning of the war. Our objective was the more modest one of trying to get people to realize that this war was going to be far more expensive than that.)

Money spent to buy oil is money not available to be spent here in the U.S. It's as simple as that. Lower aggregate demand leads, through a multiplier, to lower national income.

The second impact arises from the fact that Iraq expenditures do not stimulate the economy in the short run as much as expenditures on, say, infrastructure or education that are so badly needed here at home. A dollar spent to hire a Nepalese contractor—or even an Iraqi—in Iraq does not have the first round, second round, or *n*th round impacts that a dollar spent here does.

The third impact is that both directly, and indirectly, through the mounting deficits, Iraq expenditures are crowding out investments that would have increased America's productivity in the future.

The mounting Iraqi war debt has meant that we have had to borrow more and more money from abroad—America as a country is far more indebted to others than it was five years ago. We and our children will be paying interest on this debt. The fact that we borrowed rather than paid the bills as they came due does not mean that the war was for free; it only postponed the payments. The payments we will have to make to service this debt will lower the standard of living of Americans from what it otherwise would have been—an outcome which is particularly harsh, given that median American income today is lower than it was 5 years ago (which is simply to say that, adjusting for inflation, most Americans are worse off now than they were 5 years ago). This was true even before America went into its current downturn.

It should have come as no surprise that, when America's great financial institutions, Citibank and Merrill Lynch, needed money quickly, there were no pools of liquid cash available here. High oil prices and high national savings in China and elsewhere have created huge pools of wealth outside the United States, and it was to these that our financial institutions had to turn. It is, and should be, a cause of concern.

Until recently, it was a surprise to some that, in spite of these obvious ways in which the Iraq war was weakening the American economy, the economy seemed as strong as it did. Was there something, after all, to the old adage about wars being good for the economy? To me, and to other serious students of the American economy, there was, however, an obvious answer. These weaknesses were being hidden, just as much of the other costs of the war were being hidden from easy view. The exposure of these weaknesses was, it seemed to me, just around the corner—perhaps even more than the long vaunted victory that remained elusively just around the corner. The macroeconomic effects were being hidden by loose monetary policy, a flood of liquidity, and lax regulation. These allowed household savings rates to plummet to zero, the lowest levels since the great Depression, and fed a housing bubble, allowing hundreds of billions of dollars to be taken out in mortgage equity withdrawals that increased the irresponsible consumption boom. As I once put it somewhat graphically, the subprime mortgages and lending programs with slogans like “qualified at birth” meant that easy credit was available for anyone this side of being on a life support system. Our financial institutions and credit rating agencies came to believe in financial alchemy, that these toxic mortgages could somehow be converted into AAA assets. We were living on borrowed money and borrowed time. There had to come a day of reckoning, and it has now arrived. The games we played—which for a time allowed us to hide the true costs of the Iraq war—are now over. And, just as our troops paid a high price for our penny wise pound foolish policies, so too will our economy.

The cost to the economy of this downturn will be enormous. We do not know, of course, how long or how deep the downturn will be, but it is likely to be worse than any we have experienced in the last quarter of a century. Even if growth this year is 0.8 percent (as the IMF forecasts), and next year growth starts to resuscitate, to 2 percent, and in 2010 returns to its potential growth of, say, 3.5 percent (a quicker recovery than most would expect), the total lost output over those 3 years—the discrepancy between the economy's actual output and its potential—will amount to some one and a half trillion dollars.

REFORMS

This war has been very costly. We have made many mistakes. Some have been honest errors of judgment. But when there are repeated mistakes of this size, as social scientists, we have to ask, are there some systematic patterns? Also, as policy analysts, we have to ask, are there things that we can do to avoid their repetition?

In our book, we set out a list of eighteen recommendations for reform. Here, I want to highlight five.

First, we should not be funding any war years after the beginning through emergency appropriations. If we do, it should be a sign that things are not going as expected, and there should be a detailed, written explanation to Congress. Second, there should be a full, comprehensive, accrual-based consolidated accounting of all the budgetary and non-budgetary national defense costs; with so many of the costs years, even decades, down the line, cash accounting not only fails to provide an accurate picture of the cost but encourages what we have seen: short-sighted decisions to keep today's costs down which simply raise the overall costs. And unless the accounting is comprehensive, it encourages cost shifting. Furthermore, the accounting, particularly of military expenditures, must be auditable, with those in charge held responsible. Congress passed Sarbanes-Oxley to hold private firms accountable; but the Defense Department has not lived up to these same standards. The President has not presented, on a regular basis, an accounting of how much the war in Iraq has cost us. These costs span the Departments of Defense, State, Labor, Veterans Affairs, Energy, Social Security, and other agencies. It is only through hard work that we, and others, have been able to piece together the accounts.

Third, if we think a war is worth fighting, we must force Americans to pay up front and not shift the costs to our children; we cannot pretend that one can have a war for free. We must set aside the money required to pay health care and disability benefits for the returning veterans. We require companies to do this, and we should ask nothing less of ourselves. We cannot let what they receive be hostage to the whims of a future political process, and we should not be creating enormous new unfunded entitlements.

Fourth, we must not place the burden on so few who are asked to do repeated tours of duty. It is unfair, and in the long run, as we have seen, it is costly, not just because of the toll it puts on those put through such repeated stress, but also because it will inevitably make it more difficult and more expensive for the armed forces to recruit in the future.

Fifth, we should be wary of privatizing the military to the extent that we have; it has been expensive, in so many ways. There are some things that should be privatized, but there are some things which should not: this is one area where economic theory and historical experience suggests that we should not. To the extent that private contractors are used, there is a need both for greater reliance on competitive bidding and more oversight; and we need a full accounting of the costs, including those costs taxpayers will pay outside the defense department budget.

CONCLUDING REMARKS

America is a rich country. The question is not whether we can afford to squander \$3 trillion or \$5 trillion. We can. But our strength will be sapped. We will be less prepared to meet challenges in the future, and there are huge opportunity costs. Some of our children will not have the medical care that should be a right to every citizen born in a country as rich as ours; some will bear the scars for life. We are not investing as we should in technology and science, to make our economy as competitive as it should and needs to be. We worry about the inroads China is making in Africa—but our foreign aid budget in Africa amounts to but a few days fighting in Iraq. With a fraction of the amount spent on this war we could have had a new Marshall plan, which would have done so much to win the hearts and minds of those around the world. We have talked about the huge problem facing our social security system, putting into jeopardy the economic security of our elderly. But for a fraction of the cost of this war, we could have put Social Security on a sound footing for the next half century or more.

Economists are fond of saying that there is no such thing as a free lunch. It is also the case that there is no such thing as a free war. This is not the first time that an Administration tried to enlist support for an unpopular war by trying to hide the true and full costs from the American people. And this is not the first time that America and the American economy have suffered as a result. The inflationary episode that America went through beginning in the late 1960's was at least partly a consequence of President Johnson's failure to own up fully to the costs and adjust other tax and expenditures appropriately. This time, the underlying economic situation is different, and, accordingly, the consequences have been different but in many ways even more severe.

The budgetary costs of this war have been huge. But the costs that go beyond the budget are at least as large, and the meter is still ticking. Every year of this war has seen the costs rise. But even if the troops stay where they are, two more years will add, conservatively, another \$500 billion to the total tally. No one can know

for sure whether, when we depart, things will get better (as more Iraqis seem to believe) or worse. No one can know for sure whether staying an extra 2 years will make the chaos that might follow less—or greater. But it is your solemn responsibility to make the judgment: is this the best way of spending \$500 billion? Is it the best way to strengthen America's capacity to meet future challenges, to promote democracy around the world, to help create the kind of world, here and abroad, that we would like our children to inherit? For too long, this Congress and this Administration has approached the problem by dribs and drabs: a little more today might just do the trick; a little more later will help us turn the proverbial corner. But as the late Senator Dirksen said, "a billion here, a billion there, and pretty soon you're talking about real money." Today, we would have to say, a trillion here, a trillion there, and pretty soon you're talking about real money.

Even a rich country ignores costs of this magnitude at its peril.



Faculty Research Working Papers Series

Soldiers Returning from Iraq and Afghanistan: The Long-term Costs of Providing Veterans Medical Care and Disability Benefits

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**SOLDIERS RETURNING FROM IRAQ AND AFGHANISTAN:
The Long-term Costs of Providing Veterans Medical Care and
Disability Benefits**

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EXECUTIVE SUMMARY:

This paper analyzes the long-term needs of veterans returning from the Iraq and Afghanistan conflicts, and the budgetary and structural consequences of these needs. The paper uses data from government sources, such as the Veterans Benefit Administration Annual Report. The main conclusions of the analysis are that:

(a) the Veterans Health Administration (VHA) is already overwhelmed by the volume of returning veterans and the seriousness of their health care needs, and it will not be able to provide a high quality of care in a timely fashion to the large wave of returning war veterans without greater funding and increased capacity in areas such as psychiatric care;

(b) the Veterans Benefits Administration (VBA) is in need of structural reforms in order to deal with the high volume of pending claims; the current claims process is unable to handle even the current volume and completely inadequate to cope with the high demand of returning war veterans; and

(c) the budgetary costs of providing disability compensation benefits and medical care to the veterans from Iraq and Afghanistan over the course of their lives will be from \$350 - \$700 Billion, depending on the length of deployment of US soldiers, the speed with which they claim disability benefits and the growth rate of benefits and health care inflation.

Key recommendations include: increase staffing and funding for veterans medical care particularly for mental health treatment; expand staffing and funding for the "Vet Centers," and restructure the benefits claim process at the Veterans Benefit Administration.

This paper was prepared for the Allied Social Sciences Association Meetings in Chicago, January, 2007. The views expressed here are solely those of the author and do not represent any of the institutions with which she is affiliated, now or in the past.

Introduction

The New Year has brought with it the grim fact that 3000 American soldiers have been killed so far in Iraq. A statistic that merits equal attention is the unprecedented number of US soldiers who have been injured. As of September 30, 2006, more than 50,500 US soldiers have suffered non-mortal wounds in Iraq, Afghanistan and nearby staging locations – a ratio of 16 wounded servicemen for every fatality¹. This is by far the highest killed-to-wounded ratio in US history. For example, in the Vietnam and Korean wars there were 2.6 and 2.8 injuries per fatality, respectively. World Wars I and II had fewer than 2 wounded servicemen per death².

While it is welcome news and a credit to military medicine that more soldiers are surviving grievous wounds, the existence of so many veterans, with such a high level of injuries, is yet another aspect of this war for which the Pentagon and the Administration failed to plan, prepare and budget. There are significant costs and requirements in caring for our wounded veterans, including medical treatment and long-term health care, the payment of disability compensation, pensions and other benefits, reintegration assistance and counseling, and providing the statistical documentation necessary to move veterans seamlessly from the Department of Defense payroll into Department of Veterans Affairs medical care, and to process VA disability claims easily.

To date, 1.4 million US servicemen have been deployed to the Global War on Terror (GWOT), the Pentagon's name for operations in and around Iraq and Afghanistan³. The servicemen who have been officially wounded are a small percentage of the veterans who will be using the veteran's administration medical system. Hundreds of thousands of these men and women will be seeking medical care and claiming disability compensation for a wide variety of disabilities that they incurred during their tours of duty⁴. The cost of

¹ Department of Veterans Affairs, Office of Public Affairs, "America's Wars", September 30, 2006. This document shows that the number of non-mortal woundings in the Global War on Terror (combining Iraq, Afghanistan and surrounding duty stations) as of 9/30/06 was 50,508 compared with 2333 deaths in battle plus 707 other deaths in theater. The comparison numbers for previous conflicts are as follows: Desert Storm/Desert Shield: 1.2 wounded per fatality; Vietnam: 2.6 wounded per fatality; Korea: 2.8 wounded per fatality; World War II: 1.6 wounded per fatality; World War I: 1.8 wounded per fatality; Civil War (union): .7 wounded per fatality; War of 1812: .5 wounded per fatality; American Revolution: .7 wounded per fatality. Note: the VA defines non-mortal wounded as those who are "medically evacuated from theatre". The Pentagon has several definitions, but the daily casualty reports on its website use a narrower definition referring to those wounded by shrapnel, bullets, etc. Using this narrow definition, the Iraq conflict has a ratio of 8 wounded per fatality – still much higher than any previous war in US history.

² Ibid.

³ As of September 30, 2006, 1,406,281 unique service members have been deployed to the wars in Iraq and Afghanistan, according to the Department of Defense, Defense Manpower Data Center, and "Contingency Tracking System." The Veterans Health Administration (VHA) Office of Public Health and Environmental Hazards, November 2006 uses the number 1.4 million (as of November 2006). The Veterans Benefits Administration (VBA) lists 1,324,419 unique servicemen deployed to GWOT as of May 2006 (prepared by VBA/OPA&I, 7/20/06).

⁴ Based on an analysis of the first Gulf War in 1991, using the Gulf War Veterans Information System (GWVIS August 2006, chart on "Gulf War Veteran Outpatient Stays"), there were 297,125 veterans from that conflict who used VA medical care, or 48.4%. If the same percentages of Iraq/Afghan veterans use VA medical care then VA should expect approximately 700,000 new patients from the 1.4 million existing

providing such care and paying disability compensation is a significant long-term entitlement cost that the US will be paying for the next forty years⁵.

The objective of this paper is to examine the structural and budgetary requirements for caring for the returning war veterans from Iraq and Afghanistan, in terms of US capacity to pay disability compensation, provide high quality medical care, and provide other essential benefits. The paper grew out of a previous paper that was co-authored in January 2005 with Columbia University professor Joseph Stiglitz, in which the overall costs of the war in Iraq were estimated to exceed \$2 trillion. One of the long-term costs cited in that paper was the cost associated with providing health care and disability benefits to veterans⁶. This paper expands on that topic.

Unlike the previous paper⁷, this study does not differentiate between veterans returning from Iraq, or Afghanistan or adjacent locations (such as Kuwait, an important staging post for Iraq) in the GWOT, for three reasons. First, nearly one-third of the servicemen involved in the war have been deployed two or more times and many of them have served both in Iraq and Afghanistan, and/or other locations⁸. Second, the data available from the VA does not distinguish between the wars in Iraq and Afghanistan. Third, for the purposes of estimating the long-term costs of taking care of the returning veterans it does not matter where they served. However it is worth noting that the overwhelming majority of the deaths and injuries incurred in the GWOT have been in Iraq. Among those listed as wounded on the Pentagon's casualty reports, more than 95% have been injured in Iraq⁹.

servicemen. Increasing the number of unique servicemen deployed will increase medical and disability usage.

⁵ Veterans' disability pay is an entitlement program, like Medicare and Social Security. Once a veteran has been approved to receive disability pay, he or she is entitled to receive an annual payment and cost-of-living adjustments. The average age of a servicemen is about 25 years of age, therefore given current life expectancy rates, 40 years is a reasonable amount of years to project payment of benefits, even assuming the veteran does not claim for some years following the period of service.

⁶ Bilmes, Linda and Stiglitz, Joseph, *The Economic Costs of the Iraq War: An Appraisal Three Years After the Beginning of the Conflict*, NBER Working Paper 12054 (<http://www.nber.org/papers/w12054>), February 2006. The long-term budgetary costs associated with veterans health and disability cited in that paper ranged from \$77bn to \$179bn (depending on the length of the war), based on a population of 550,000 unique Iraqi war veterans. After we published this paper, a number of veteran's organizations including the American Legion and Veterans for America, contacted us in appreciation of our highlighting the needs of veterans. Veterans for America has particularly encouraged further research to understand the needs of the returning GWOT veteran's community.

⁷ The Bilmes/Stiglitz cost of war paper did not include the costs of Afghanistan or other areas outside of Iraq in the GWOT. Had we included those costs, the total cost of war would have increased by 15-20%.

⁸ As of 9/30/06, some 421,206 (30%) of 1,406,281 unique service members had been deployed twice or more to the wars in Iraq and Afghanistan. Army Times, December 11, 2006, page 14, from the Department of Defense, Defense Manpower Data Center, "Contingency Tracking System."

⁹ As of 12/28/06, the DOD website listed 22,565 wounded in Operation Iraqi Freedom and 1084 wounded in Operating Enduring Freedom (Afghanistan). As noted previously, this is a narrower definition of injuries than the one used by the Veterans administration, which lists 50,508 non-mortal woundings as of 9/30/06.

This paper will analyze the following aspects of the returning veterans' needs.

1. Disability compensation
 - Projected Cost
 - Backlog of Pending Claims
2. Medical care
 - Capacity issues
 - Projected Cost
 - Veterans Centers
 - Transitioning from the Department of Defense to VA care
3. Overall assessment of US readiness to meet its obligations to veterans
4. Recommendations

Methodology

All statistics used in this paper are from government sources, including publications of the Veterans Benefit Administration (VBA), Veterans Health Administration (VHA), and other VA offices, as well as from the Congressional Budget Office, the Government Accountability Office, the Department of Defense, and Congressional testimony. The numbers are based on the servicemen involved in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF, Afghanistan) unless otherwise noted.

The cost and structural requirements for returning veterans will depend on several factors, including the number of US troops stationed in the region and how long they are deployed; the rate of claims and utilization of health resources by returning troops, and the rate of increase in disability payment and health care costs over time. The model developed allows the user to vary these assumptions and may be obtained with permission from the author's website. The current analysis has been performed under three "base" scenarios that reflect, broadly the three options now under consideration for the war.

- Low Scenario: The low scenario assumes that the US begins withdrawing troops in 2007 and that all US servicemen are home by 2010. This pattern is roughly in parallel with the recommendations of the bipartisan Baker Commission that reported to President Bush in November 2006. This scenario assumes that *we will not deploy any new troops beyond the 1.4 million already participating in the war*. It assumes that 44% of US troops will claim for disability payment over a period of years, with 87% of claims granted, following the same claims pattern as the first Gulf War in 1991¹⁰. The low scenario assumes that soldiers will initially receive the VA's 2005 average recurring benefit and that the annual rate of

¹⁰ Using the claims patterns from Gulf War I is almost certainly too conservative because that war was much shorter and relied primarily on aerial bombardment, whereas the current wars involve long deployments and ground warfare. However it provides a baseline for the current Iraq/Afghan wars.

increase will be 2.8% to reflect a cost-of-living adjustment only. (As opposed to the actual growth rate over the past 10 years which is 6.1%). The medical usage in this scenario is based on the lowest possible uptake of medical care and a rate of increase that is below the historical rate of health care inflation. In short, this scenario shows the absolute basement level -- the lowest possible cost of providing medical care and disability benefits to soldiers returning from Iraq and Afghanistan under the most optimistic assumptions.

- **Moderate Scenario:** The moderate scenario is based on the current course of the war. This scenario uses the Congressional Budget Office's expected deployment figures, which would involve a gradual drawdown of troops but maintain a small US force in the region through 2015. Under this scenario, the total unique servicemen involved in the conflict will be 1.7 million, that is, 300,000 additional troops rotated in over the period of years. Nearly 20,000 new troops are regularly deployed into the two war zones each month, before any "surge" or escalation of the conflict is considered ¹¹ This scenario uses the first Gulf War as the basis for predicting the level of troops who will claim disability benefits, the rate of approval of the claims, and the utilization of medical resources. However a growth rate of 4.4% is projected for claims benefits, half way between the base cost-of-living adjustment and the actual growth rate of 6.1%.
- **High "Surge" Scenario:** This scenario assumes that troop levels with surge in 2007 and that the total participation in the war over time will eventually reach 2 million unique servicemen by 2016. It also models the potential that half the veterans claim disability payments, which is a reasonable possibility given the ferocity of the conflict and the number of second and third deployments. This model also looks at the impact of growth in claims benefit payments and health care costs based on the actual growth rates over the past ten years. If the US decides to increase troops and all trends on disability and health care continue as they have in the past, this model presents the resulting cost consequences.

The costs estimated in this study are budgetary costs to the US government directly associated with the payment of disability benefits and medical treatment for returning OIF/OEF war veterans. The costs do not include the interest payments on the debt that is being incurred in borrowing money to finance the war. Future cash flows were discounted at a rate of 4.75% reflecting current long-term US borrowing rates.

1. Disability Compensation

There are 24 million living veterans, of whom roughly 11% receive disability benefits. Overall, in 2005 the US currently paid \$23.4 billion in annual disability entitlement pay

¹¹ Footnote: Analysis of DMDC's Contingency Tracking System shows 57,462 new first-time deployments between June 2006 and September 2006, an average 19,154 per month

to veterans from previous wars, including 611,729 from the first Gulf War, 916,220 from Vietnam, 161,512 Korean War veterans, 356,190 World War II veterans and 3 veterans of World War I.¹²

All 1.4 million servicemen deployed in the current war effort are potentially eligible to claim some level of disability compensation from the Veterans Benefits Administration. Disability compensation is a monetary benefit paid to veterans with “service-connected disabilities” -- meaning that the disability was the result of an illness, disease or injury incurred or aggravated while the soldier was on active military service. Veterans are not required to seek employment nor are there any other conditions attached to the program. The explicit congressional intent in providing this benefit is “to compensate for a reduction in quality of life due to service-connected disability” and to “provide compensation for average impairment in earnings capacity.” The principle dates back to the Bible at Exodus 21:25, which authorizes financial compensation for pain inflicted by another¹³.

Disability compensation is graduated according to the degree of the veteran’s disability, on a scale from 0 percent to 100 percent, in increments of 10%. Annual benefits range from a low of \$1304 per year for a veteran with a 10% disability rating to about \$44,000 in annual benefits for those who are completely disabled¹⁴. The average benefit is \$8890 although this varies considerably; Vietnam veterans average about \$11,670¹⁵. Additional benefits and pensions are payable to veterans with severe disabilities. Once deemed eligible, the veteran receives the compensation payment as a mandatory entitlement for the remainder of their lives, like Medicare and Social Security.

There is no statute of limitations on the amount of time a veteran can claim for most disability benefits. The majority of veteran’s claims are within the first few years after returning, but some disabilities do not surface until years later. The VA is still handling hundreds of thousands of new claims from Vietnam era veterans for post-traumatic stress disorder and cancers linked to Agent Orange exposure.

The process for ascertaining whether a veteran is suffering from a disability, and determining the percentage level of a veteran’s disability, is complicated and lengthy. A veteran must apply to one of the 57 regional offices of the Veterans Benefits Administration (VBA), where a claims adjudicator evaluates the veteran’s service-connected impairments and assigns a rating for the degree to which the veteran is disabled. For veterans with multiple disabilities, the regional office combines the ratings into a single composite rating. If a veteran disagrees with the regional office’s decision he or she can file an appeal to the VA’s Board of Veterans Appeals. The Board makes a final decision and can grant or deny benefits or send the case back to the regional office

¹² Ibid, page 33, “Benefits delivery network”, RCS 20-0221

¹³ See Veterans Benefits Administration “Annual Benefits Report” (ABR), 2005, page 17 for definition of disability compensation and see VA Disability Compensation Program, *Legislative History*, VA Office of Policy, Planning and Preparedness 2004 for principles behind the program.

¹⁴ Ibid, page 24, lists \$1304 for 10% and \$31,611 for 100%, but those with 100% disability also receive additional payments that combined result in an annual payment of approximately \$44,000.

¹⁵ Ibid, page 33.

for further evaluation. Typically a veteran applies for disability in more than one category, for example, a mental health condition as well as a skin disorder. In such cases, VBA can decide to approve only part of the claim – which often results in the veteran appealing the decision. If the veteran is still dissatisfied with the Board’s decision to grant service connection or the percentage rating, he or she can further appeal it to two even higher levels of decision-makers.¹⁶

Most employees at VA are themselves veterans, and are predisposed to assisting veterans obtain the maximum amount of benefits to which they are entitled. However, the process itself is long, cumbersome, inefficient and paperwork-intensive. The process for approving claims has been the subject of numerous GAO studies and investigations over the years. Even in 2000, before the current war, GAO identified longstanding problems in the claims processing area. These included large backlogs of pending claims, lengthy processing times for initial claims, high error rates in claims processing, and inconsistency across regional offices¹⁷. In a 2005 study, GAO found that the time to complete a veteran’s claim varied from 99 days at the Salt Lake City regional office to 237 days at the Honolulu, Hawaii office¹⁸.

The backlog of pending claims has been growing since 1996. In 2000, VBA had a backlog of 69,000 pending initial compensation claims, of which one-third had been pending for more than six months¹⁹. Today, due in part to the surge in claims from the Iraq/Afghan wars, VBA has a backlog of 400,000 claims²⁰. VBA now takes an average of 177 days (six months) to process an original claim, and an average of 657 days (nearly two years) to process an appeal.²¹ This compares unfavorably with the private sector health care/financial services industry, which processes an annual 30 billion claims in an average of 89.5 days per claim, *including* the time required for claims that are disputed²².

Projected Demand for Benefits among OIF/OEF Veterans

It is difficult to predict with certainty the number of veterans from the two current wars who will claim for some amount of disability. The first Gulf War provides a baseline number although the Iraq and Afghanistan war has been longer and has involved more ground warfare than the Desert Storm conflict, which relied largely on aerial bombardment and four days of intense ground combat. However, in both conflicts, a

¹⁶ GAO, “Veterans Benefits Administration: problems and Challenges Facing Disability Claims Processing”, GAO Testimony before the Subcommittee on Oversight and Investigations, House Committee on Veterans Affairs, May 18, 2000

¹⁷ Ibid.

¹⁸ “Veterans Benefits: Further Changes in VBA’s Field Office Structure could help improve disability claims processing”, GAO-06-149, December 2005

¹⁹ Ibid

²⁰ The VBA’s backlog of pending claims was 399,751 as of December 9, 2006 (VBA Monday Morning Workload Report).

²¹ The average time to process a claim is 177 days as of 9/06 and average time to process an appeal is 657 days (VA Performance and Accountability Report FY 2006).

²² Bearing Point, Health Care/Financial Services industry report, September 14, 2006.

number of veterans were exposed to depleted uranium that was used in anti-tank rounds fired by US M1 tanks and US A10 attack aircraft. Many disability claims from the first Gulf War stem from exposure to depleted uranium, which has been implicated in raising the risk of cancers and birth defects. Gulf War veterans also filed disability claims related to exposures to oil well fire pollution, low-levels of chemical warfare agents, experimental anthrax vaccines, and experimental anti-chemical warfare agent pills called pyridostigmine bromide, the anti-malaria pill Lariam, skin diseases, and disorders from living in the hot climate²³, which are likely to be cited in the current conflict. However, the number of disability claims in the Iraq/Afghan wars is likely to be higher due to the significantly longer length of soldier's deployments, repeat deployments, and heavier exposure to urban combat.

Following the Gulf War the criteria for receiving benefits were widened by Congress based on evidence of widespread toxic exposures²⁴. The same criteria for healthcare and benefits eligibility still apply to veterans of the Iraq and Afghanistan wars²⁵. Forty-four percent of those veterans filed disability claims for a variety of conditions and 87% were approved²⁶. The US currently pays about \$4 billion annually in disability payments to veterans of Desert Storm/Desert Shield²⁷.

Of the 1.4 million US servicemen who have so far been deployed in the Iraq/Afghan conflicts, 631,174 have been discharged as of September 30, 2006. Of those 46% are in the full-time military and 54% are reservists and National Guardsmen.²⁸ Therefore the total population that is potentially eligible for disability benefits is this number (631,174). To date 152,669 servicemen have applied for disability benefits and of those, 104,819 have been granted, 34,405 are pending and 13,445 have been rejected. This implies an approval rate of 88% to date.²⁹

We have estimated the cost of providing disability benefits to veterans under three scenarios. Under the low scenario, we expect that as in the first Gulf War, 44% of the current veterans will eventually claim disability, with an approval rate of 87%. We estimate that the remaining 900,000 troops will be discharged in equal installments over the next 4 years bringing all US troops home by 2010. We expect the same percentage of these troops to claim for disabilities, with the same approval rate, within a further 5 years.

²³ Veterans for America, interview with Paul Sullivan, program director, 11/06.

²⁴ "Veterans Benefits Improvement Act of 1994" (Public Law 103-446) and "Persian Gulf War Veterans Act of 1998 (PL 105-277).

²⁵ In fact, the VA does not distinguish, for the purpose of claims processing, between the end of the first Gulf War and the present conflict (38 USC Section 101(33) defines the Gulf War as starting on August 2, 1990, and continuing until either the President or the Congress declares an end to it and 38 CFR 3.317 defines the locations of the conflict).

²⁶ For Gulf War, the total claims filed to date are 271,192, of which 205,911 have been approved, 20,382 were denied and 34,899 are still pending (GWVIS, August 2006, p.7: Granted Service Connection +Denied Service Connection +Claims Pending)

²⁷ Gulf War total annual payment \$4.3 billion (Ibid., VBA, ABR 2005 pp. 33)

²⁸ VHA, Office of Public Health and Environmental Hazards, November 2006

²⁹ VBA "Compensation and Benefit Activity among veterans deployed to the GWOT", July 20, 2006, obtained under Freedom of Information Act by the National Security Archive at George Washington University.

We have assumed that on average, claims are lower than average rate, at the lower rate of new claimants from the first Gulf War of \$6506³⁰. This is probably an excessively conservative assumption because it projects the same rate of serious injuries as occurred in Gulf War I, when in fact we already know that more than the actual rate of serious injuries is much higher³¹.

The moderate scenario assumes that the war continues through 2014 with a total deployment of 1.7 million over the course of the war, and with gradually reduced deployment. It assumes that a slightly higher percentage of eligible veterans (50%) make claims, which is more realistic given deployment lengths. This scenario uses the actual average VA benefit payment of \$8890. It assumes the rate of increase in benefits is 4.4%, midway between the mandatory Cost of Living Adjustment and the actual ten-year growth rate of 6.1%. The high scenario models the impact of a surge in forces bringing the total unique deployments to 2 million. It assumes 50% of eligible forces claim benefits and a rate of 6.1% increase, which is the actual rate over the past 10 years. It further assumes a higher rate of medical inflation (10% vs. 8% in the low and moderate scenarios).

Table 1: Long-term Cost of Veterans Disability Benefits³²

scenario	Low	Moderate	High
Disability Benefits (\$bn)	67.63	109.98	126.76

Backlog of Pending Disability Claims

The issue is not simply cost but also efficiency in providing disabled veterans with their benefits. In addition to all the problems detailed above, the Iraq and Afghan war veterans are filing claims of unusually high complexity (see table 3). To date, the backlog of pending claims from these recent war veterans is 34,000, but the vast majority of servicemen from this conflict have not yet filed their claims. Even without the projected wave of claims, the VA has an overall backlog of 400,000, including thousands of Vietnam era claims. Including all pending claims and other paperwork, the VA's backlog has increased from 465,623 in 2004 to 525,270 in 2005 to 604,380 in 2006.³³

³⁰ Ibid, ABR 2005, p33

³¹ Of the 50,508 non-mortally wounded soldiers in OIF/OEF there are at least 10,000 serious injuries such as brain injuries, spinal and amputations, according to DOD sources. See also Wallsten and Kosec, AEI-Brookings Working Paper 05-19, September 2005, estimate of 20% serious brain injuries, 6% amputees and 24% other serious injuries.

³² The figures in Table 1 represent the present value of disability benefits over 40 years for eligible veterans projected under the three scenarios described.

³³ VBA's "Monday Morning Report" of pending claims and other work performed at regional offices, cites: 11/25/06: 604,380; 11/26/05: 525,270; 11/27/04: 465,623.

The fact that the VBA is largely sympathetic to the plight of disabled veterans should not obscure the fact that this system is already under tremendous strain. If only one fifth of the returning veterans who are eligible claim in a given year, and the total claims reaches a high of 38% effective rate (44%* 88% approval rate), the number of likely claims at the VBA over the next ten years can be expected to rise from 104,819 to more than 600,000³⁴. (See table 2).

Table 2: Projected Increase in Disability Claims (moderate scenario)

	2006	2007	2008	2009	2010	2011	2012
Disability Benefits							
Discharged		118,758	118,758	118,758	118,758	118,758	118,758
<i>cum</i>		118,758	237,517	356,275	475,034	593,792	712,551
Eligible claimants							
Existing discharged non-claimants	526,355	526,355	526,355	526,355	526,355	526,355	526,355
Newly discharged	-	118,758	237,517	356,275	475,034	593,792	712,551
Total potential claimants		645,113	763,872	882,630	1,001,389	1,120,147	1,238,906
Claim rate	22%	22%	27%	33%	38%	44%	44%
New claims		140,312	207,678	287,898	381,154	487,264	538,924
Current beneficiaries	104,819	104,819	104,819	104,819	104,819	104,819	104,819
Total claims (number)	104,819	245,131	312,497	392,777	485,973	592,063	643,743
Total claims (\$bn)	0.93	2.27	2.89	3.63	4.49	5.47	6.95

If nothing is done to address the problem, the claims backlog will continue to grow throughout the period of the war, along with growing inequity between different regional offices. A key question is: what is a reasonable amount of time for the US to make a disabled veteran wait for a disability check? This paper proposes several actions that could reduce the length of time for processing from zero to 90 days. (Described in more detail in Section 4: Recommendations). These include: (a) greater use of the "Vet Centers" to provide assistance for veterans to file their claims, (b) automatically granting all or some of the claims, with subsequent audits to deter fraud, and (c) streamlining and technologically upgrading the claims system into a "fast track" where veterans receive a quick decision on most claims.

2. Veterans Medical Care Shortfall

The VA's Veterans Health Administration provides medical care to more than 5 million veterans each year. This care includes primary and secondary care, as well as dental, eye and mental health care, hospital inpatient and outpatient services. The care is free to all returning veterans for the first two years after they return from active duty; thereafter the VA imposes co-payments for various services, with the amounts related to the level of disability of the veteran³⁵.

³⁴ This projection based on the moderate scenario described previously, based on 1.7 million unique servicemen and CBO troop deployment figures through 2014.

³⁵ 38 USC Section 1710

The VA has long prided itself on the excellence of care that it provides to veterans. In particular, VA hospitals and clinics are known to perform a heroic job in areas such as rehabilitation. Medical staff is experienced in working with veterans and provides a sympathetic and supportive environment for those who are disabled. It is therefore of utmost importance that the quality of care be maintained as the demand for it goes up.

However, the demand for VA medical treatment is far exceeding what the VA had anticipated. This has produced long waiting lists and in some cases simply the absence of care. To date, 205,097, or 32% of the 631,174 eligible discharged OEF/OIF veterans have sought treatment at VA health facilities. These include 35% of the eligible active duty servicemen (101,260) and 31% of the eligible Reservists/Guards (103,837). To date, this number represents only 4% of the total patient visits at VA facilities – but it will grow. According to the VA, “As in other cohorts of military veterans, the percentage of OIF/OEF veterans receiving medical care from the VA and the percentage of veterans with any type of diagnosis will tend to increase over time as these veterans continue to enroll for VA health care and to develop new health problems”³⁶.

The war in Iraq has been noteworthy for the types of injuries sustained by the soldiers. Some 20% have suffered brain trauma, spinal injuries or amputations; another 20% have suffered other major injuries such as amputations, blindness, partial blindness or deafness, and serious burns.

However, the largest unmet need is in the area of mental health care. The strain of extended deployments, the stop-loss policy, stressful ground warfare and uncertainty regarding discharge and leave has taken an especially high toll on soldiers. Thirty-six percent of the veterans treated so far -- an unprecedented number -- have been diagnosed with a mental health condition. These include PTSD, acute depression, substance abuse and other conditions. According to Paul Sullivan, a leading veterans advocate, “The signature wounds from the wars will be (1) traumatic brain injury, (2) post-traumatic stress disorder, (3) amputations and (4) spinal chord injuries, and PTSD will be the most controversial and most expensive”³⁷ (see Table 3)

Table 3: VHA Office of Public Health, November 2006

³⁶ VHA, Office of Public Health and Environmental Hazards, November 2006, Ibid, p. 14

³⁷ Paul Sullivan, Program Director of Veterans for America, 12/23/06 interview

Frequency of Possible Diagnoses Among Recent Iraq and Afghan Veterans

Diagnosis (Broad ICD-9 Categories)	(n = 205,097)	
	Frequency *	%
Infectious and Parasitic Diseases (001-139)	21,362	10.4
Malignant Neoplasms (140-208)	1,584	0.8
Benign Neoplasms (210-239)	6,571	3.2
Diseases of Endocrine/Nutritional/ Metabolic Systems (240-279)	36,409	17.8
Diseases of Blood and Blood Forming Organs (280-289)	3,591	1.8
Mental Disorders (290-319)	73,157	35.7
Diseases of Nervous System/ Sense Organs (320-389)	61,524	30.0
Diseases of Circulatory System (390-459)	29,249	14.3
Disease of Respiratory System (460-519)	36,190	17.6
Disease of Digestive System (520-579)	63,002	30.7
Diseases of Genitourinary System (580-629)	18,886	9.2
Diseases of Skin (680-709)	29,010	14.1
Diseases of Musculoskeletal System/Connective System (710-739)	87,590	42.7
Symptoms, Signs and Ill Defined Conditions (780-799)	67,743	33.0
Injury/Poisonings (800-999)	35,765	17.4

*Hospitalizations and outpatient visits as of 9/30/2006; veterans can have multiple diagnoses with each healthcare encounter. A veteran is counted only once in any single diagnostic category but can be counted in multiple categories, so the above numbers add up to greater than 205,097.

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Additionally, far more returning Iraqi war veterans (than those in previous conflicts) are likely to seek such help, in part due to awareness campaigns run by veteran's organizations through the press. There is no reliable data on the length of waiting lists for returning veterans, but even the VA concedes that they are so long as to effectively deny treatment to a number of veterans. In the May 2006 edition of *Psychiatric News*, Frances Murphy M.D., the Under Secretary for Health Policy Coordination at VA, said that mental health and substance abuse care are simply not accessible at some VA facilities. When the services are available, Dr. Murphy asserted that, "waiting lists render that care virtually inaccessible."³⁸

The VA curiously maintains that it can cope with the surge in demand, despite much evidence to the contrary. For the past two years, the VA ran out of money to provide health care. In FY 2006, the VA was obliged to submit an emergency supplemental budget request for \$2 billion, which included \$677 million to cover an unexpected 2% increase in the number of patients (half of which were OIF/OEF patients), \$600 million to correct its inaccurate estimate of long-term care costs, and \$400 million to cover an unexpected 1.2% increase in the costs per patient due to medical inflation. The previous year, (FY 2005), VA requested an additional \$1 billion, of which one-quarter was for unexpected OIF/OEF needs and remainder was related to overall under-estimation of patient costs, workload, waiting lists, and dependent care. The GAO analysis of these shortfalls concluded that they were due to the fact that VA was modeling its projections based on 2002 data, before the war in Iraq began³⁹.

³⁸ Frances Murphy, May 2006, *Psychiatric News*

³⁹ GAO-06-430R, "VA Health Care Budget Formulation", pp 18-20.

The budget shortfalls and the statement by Dr. Murphy suggest that the volume of veterans returning from Iraq and Afghanistan will not be able to obtain the health care they need, particularly for mental health conditions. Such veterans are at high risk for unemployment, homelessness, family violence, crime, alcoholism, and drug abuse, all of which impose an additional human and financial burden on the nation. In addition, many of these social services are provided by state and local governments which are already under tremendous strain.

Projected Medical Costs

The number of veterans who will eventually require treatment can be estimated using a baseline of the utilization during the first Gulf War, in which the VA is providing medical care to 48% of veterans. The average annual cost of treating veterans in the system is now \$5000⁴⁰, although it is difficult to know whether the more grievous injuries and disabilities of the current conflict will drive up costs per patient.

The costs of providing medical care have been calculated under the three scenarios. Under the low scenario, under which the US will deploy no new troops, the ceiling for medical care is 48% of OIF/OEF veterans. If half of all veterans eventually seek medical treatment from the VA that will produce a demand of some 700,000 veterans. However, due to the fact that veterans are eligible for free care during the first two years after discharge, we can expect a wave of returning war veterans within two years of their discharge date. Additionally, since active duty veterans claim medical care at a higher rate (than Guards/Reservists) and have been deployed in more of the most hazardous front-line task come home, we can expect that the average cost of treating such veterans increases as well as a high level of demand⁴¹.

If the demand for medical care increases as projected to some 700,000 or more veterans, there is a serious risk that the VA, which is already overwhelmed, will be unable to meet the medical needs of returning OIF/OEF veterans. Additional staff is needed in important areas such as brain trauma units and mental health. The VA also needs to expand systems such as triage nursing, to help leverage scarce medical resources.

Even assuming that no more troops are deployed, the long-term cost of treating returning veterans will reach \$208 billion. This however assumes that the supply of health care exists to treat them. If the number of troops continues to grow as in the moderate then cost of providing lifetime care rises to \$315 billion. The annual budget payment under this scenario will reach \$3bn by 2010 and more than double by 2014. (See Table 4)

⁴⁰ This amount is calculated by estimating the budget 2006 supplemental budget request for OIF/OEF veterans per additional patient, using the GAO analysis in GAO-06-430R

⁴¹ VHA, Office of Public Health and Environmental Hazards, Ibid.

Table 4: Projected Cost of for Providing VA Medical Care (moderate scenario)⁴²

	2006	2007	2008	2009	2010	2011	2012	2013	2014
MEDICAL COSTS									
Total Discharged	631,174	749,932	868,691	987,449	1,106,208	1,224,966	1,343,725	1,462,483	1,581,242
% OEF/OIF veterans seeking care	32.50%	33.86%	35.49%	37.09%	38.76%	40.50%	42.32%	44.23%	46.22%
Total OEF/OIF veterans seeking care	205,132	254,898	308,305	366,224	428,731	496,123	568,711	646,827	730,822
Cost/medical claim	\$ 5,000	\$ 5,400	\$ 5,832	\$ 6,299	\$ 6,602	\$ 7,047	\$ 7,594	\$ 8,169	\$ 8,755
Total cost (\$bn)	1.0	1.4	1.8	2.3	2.8	3.6	4.5	5.5	6.8
NPV	\$ 315.23								

However, these scenarios are conservative in assuming that only half of the returning veterans will eventually seek medical treatment from the VA and that the level of health care inflation will remain constant at 8%. Under a worst-case scenario, if troops levels rise to 2 million and if health inflation rises to the double-digit levels experienced during the 1990s, we can expect the total cost of providing lifetime medical care to veterans to reach \$600bn⁴³.

Veterans Centers

How can the VA possibly handle the number of returning troops who require care, as well as their families, especially for mental health conditions? Perhaps the most creative and successful innovation in the VA in past two decades has been the introduction of the “Vet Centers” -- 207 walk-in storefront centers where veterans or their families can obtain counseling and reintegration assistance. The centers, operated by VA’s “Readjustment Counseling Service” are popular with veterans and their families and – at a total cost of some \$100m per year -- provide a highly cost-effective option for veterans who are not in need of acute medical care. The Vet Centers are particularly helpful for families, for example they provide a venue for a soldier’s spouse to seek guidance of the veteran is showing mental distress but will not seek help. They also supply bereavement counseling to surviving families of those killed during military service. And they offer a friendlier environment often staffed with recent OEF/OIF combat veterans and other war veterans – unlike VA regional offices which tend to be stuffy, bureaucratic offices located in downtown locations⁴⁴.

To date, 144,000 veterans have sought assistance at these centers⁴⁵. However the demand for their services is threatening their ability to provide care. Vet Center managers recently surveyed by Congress said that in 50% of the Centers, the increasing workload is affecting their ability to treat veterans. Some 40% of the Vet Centers have directed veterans for whom individualized therapy would be appropriate into group therapy, and more than one-quarter of the Centers have limited or plan to limit family therapy. Nearly 17% have established waiting lists (or are in the process of setting them up)⁴⁶.

⁴² The NPV is calculated over 40 years, at a discount rate of 4.75%, with a peak rate of 50% veterans claiming care by 2016.

⁴³ High scenario assuming 10% medical inflation rate.

⁴⁴ Opinion based on conversations with veterans organizations.

⁴⁵ Vet Center costs document, page 3B-11

⁴⁶ October 2006 report issued by the House Veterans Affairs Committee, testimony by Vet Center managers.

Currently the centers do not assist veterans in filing disability claims, but provided that the facility had sufficient secure storage space to handle such documents, there is no reason why they could not. The VA has recommended hiring an additional 1000 claims adjudicators – who could be placed in the Vet Centers (an average of 5 each) to help veterans figure out how to claim. The cost of expanding the number of centers, hiring additional staff and placing more claims adjudicators in the centers is minimal.

Transition from DOD Payroll to VA Care

One of the chief bottlenecks in the current system is the soldier's transition from the DOD payroll into the VA benefit system. There are three primary ways that a soldier makes this transition.

A veteran who is discharged regularly, and has some level of disability will typically have to wait 6 months before receiving his or her disability check from the VA. This is a period during which the veterans, particularly those in a state of mental distress, are most at risk for serious problems, including suicide, falling into substance abuse, divorce, losing their job, or becoming homeless.

A second route is to exit via the "Benefits Delivery at Discharge" (BDD) program. This successful program allows soldiers to process their claims up to six months prior to discharge, so they can begin receiving benefits as soon as they leave the military. However, the use of this route has become much more difficult due to the extended deployments, the use of "stop-loss" orders, and the resulting unpredictability about when a soldier will be discharged. Additionally, this program is not available to Reservists and Guardsmen, who comprise 40% of the forces in Iraq and Afghanistan. The VBA claim denial rate is twice as high for Reserve and Guard veterans, possibly due in part to their lack of access to BDD.⁴⁷ Consequently the usage of this apparently better route has not been increasing as would have been expected.⁴⁸

For veterans who are more seriously wounded, the process is more complicated as they transition from medical facilities run by DOD into medical facilities run by the VA. For example a wounded veteran may be treated initially at Walter Reed Army Hospital and then transferred to a VA facility. Veterans experience some difficulties in securing the maximum amount of disability benefits at discharge during such transitions, due to a lack of compatibility between the DOD and VA paperwork and tracking systems. The VA complains that the records they receive from DOD are delayed or contain errors, in many cases it is the situation where the data that is tracked is not compatible. This not only creates unnecessary problems in moving veterans through the system but it also makes it more difficult for the data to be analyzed in medical and other studies.

⁴⁷ Active Duty denial rate is 7.6 percent compared with National Guard and Reserve denial rate of 17.8 percent, See Footnote 28

⁴⁸ Congressional testimony of Jack McCoy, VBA, March 16, 2006, <http://www.va.gov/OCA/testimony/hvac/sdama/060316JM.asp> and a VA fact sheet indicate 26,000 BDD claims in 2003, 39,000 in 2004, and 46,000 in 2005. <http://www1.va.gov/opa/fact/transsst.asp>

Additionally there are the problems caused by the Pentagon's poor accounting system. GAO investigators have found that DOD pursued hundreds of battle-injured soldiers for payment of non-existent military debts – because DOD financial systems erroneously reported that they were indebted. For example, one Army Reserve Staff Sergeant, who lost his right leg below the knee, was forced to spend 18 months disputing an erroneously recorded debt of \$2231 which prevented him from obtaining a mortgage to purchase a home. Another staff sergeant who suffered massive brain damage and PTSD had his pay stopped and utilities turned off because the military erroneously recorded a debt of \$12,000. Hundreds of injured soldiers may be in this situation⁴⁹.

Overall Assessment and Cost

Overall the US is not adequately prepared for the influx of returning servicemen from Iraq and Afghanistan. There are three major areas in which it is not prepared: claims processing capacity for disability benefits; medical treatment capacity, in terms of the number of health care personnel available at clinics throughout the country, particularly in mental health; and third, there is no preparation for paying the cost of another major entitlement program.

As discussed earlier, the backlog in claims benefit is already somewhere between 400,000 and 600,000. Unless major changes are made to this process, the number of claims pending and requiring attention will reach some 750,000 within the next two years and the pendency period will increase proportionately, resulting in more veterans falling through the cracks that could have been avoided. In addition, veterans whose claims reach different centers in different parts of the country will have widely different experiences, proving highly unfair to those who just happen to be located in areas of greater backlog.

The quality of medical care is likely to continue to be high for veterans with serious injuries treated in VA's new polytrauma centers. However, the current supply of care makes it unlikely that all facilities can offer veterans a high quality of care in a timely fashion. Veterans with mental health conditions are most likely to be at risk because of the lack of manpower and the inability of those scheduling appointments to distinguish between higher and lower risk conditions. If the current trends continue, the VA is likely to see demand for health care rising to 750,000 veterans in the next few years, which will overwhelm the system in terms of scheduling, diagnostic testing, and visiting specialists, especially in some regions⁵⁰.

The cost of providing disability benefits and medical care, even under the most optimistic scenario that no additional troops are deployed and the claims pattern is only that of the previous Gulf War, would suggest that at a minimum the cost of providing lifetime disability benefits and medical care is \$350 billion. If the number of unique troops increases by another 200,000 to 500,000 over a period of years, this number may rise to

⁴⁹ GAO-06-494, "Hundred of Battle-Injured GWOT Soldiers Have Struggled to Resolve Military Debts"

⁵⁰ However, the availability of medical care may vary significantly by region.

as high as nearly \$700bn. (See Table 5) The funding needs for veterans' benefits thus comprise an additional major entitlement program along with Medicare and Social Security that will need to be financed through borrowing if the US remains in deficit. This will in turn place further pressure on all discretionary spending including that for additional veterans' medical care.

Table 5: Total Veterans Disability and Medical Costs⁵¹

	LOW	MODERATE	HIGH
Disability	67.6	109.5	126.8
Medical	282.2	315.2	536.0
TOTAL (\$Bn)	349.8	424.7	662.8

In the context of the overall costs of the War

Veteran's disability benefits and medical care are two of the most significant long-term costs of the War. As shown in our previous analysis of the costs of the war, the war has both budgetary and economic costs. This paper focuses only on the budgetary costs of caring for veterans. It does not take into account the value of lives lost, or effectively lost due to grievous injury. Not does it take into account the economic impact of the large number of veterans living with disabilities who cannot engage in full economic activities⁵².

⁵¹ Total lifetime costs over 40 years, discounted at 4.75% under scenarios described.

⁵² This paper considers only the budgetary costs of veterans care. Standard economic theory would treat disability benefits as a transfer payment and deduct these from the economic and social loss associated with veteran's reduced economic lives. This was the methodology used in (stiglitz paper).

Recommendations

a) Medical Care

The Veterans Health Administration will not be able sustain its high quality of care without greater funding and increased capacity in areas such as psychiatric care and brain trauma units. In addition, more funding should be provided for readjustment counseling services by social workers at the Vet Centers. Even doubling the amount of funding for counseling at the Vet Centers is a small amount compared to the funds now being requested for additional recruiting of new soldiers.

(b) Disability Claims Backlog

There are at least three potential methods of reducing the number of pending claims. Perhaps the easiest would be to “fast track” returning Iraq and Afghan war veteran’s claims in a single center staffed with highly experienced group of adjudicators who could provide most veterans with a decision within 90 days. At a minimum, all simple claims could be dispatched in this manner. During the past decade, private sector health insurance companies have reengineered their processes and adopted technologies, such as new automated data capture and document processing systems that have dramatically improved their ability to handle large volumes of information. This has allowed the industry to bring the average claim processing time down to 89.5 days. For example, the firm Noridian used technology to enable operators to process four to five times more claims in the same amount of time as under their old system, and to speed the form retrieval process for better customer service⁵³.

The VA has proposed a more typically governmental solution of adding 1000 more claims adjudicators. Even apart from the cost of \$80m or so of adding these personnel, the question is whether adding additional personnel to a cumbersome system is the best possible way to speed up transactions and improve service. A better idea would be to expand the Vet Centers to offer some assistance in helping veterans figure out their disability claims. The 1000 claims experts could be placed inside the Vet Centers (5 per center), thus enabling veterans and their families to obtain quick assistance for many routine claims. Vet Centers would only require minor modifications (secure storage space, additional computers and offices) to fill this role.

The best solution might be to simplify the process -- by adopting something closer to the way the IRS deals with tax returns. The VBA could simply approve all veterans’ claims as they are filed -- at least to a certain minimum level -- and then audit a sample of them to weed out and deter fraudulent claims. At present, nearly 90 percent of claims are approved. VBA claims specialists could then be redeployed to assist veterans in making claims, especially at VA’s “Vet Centers.” This startlingly easy switch would ensure that the US no longer leaves disabled veterans to fend for themselves.

⁵³ KM World, June 1999.

The cost of any solution that reduced the backlog of claims is likely to be an increased number of claims, and a quicker pay-out. If 88% of claims were paid within 90 days instead of the 6 months to 2 years currently required, the additional budgetary cost is likely to be in the range of \$500m in 2007.

Conclusions

President Bush is now asking for more money to spend on recruiting in order to boost the size of the Army and deploy more troops to Iraq. But what about taking care of those same soldiers when they return home as veterans? The number of veterans who are returning home with injuries or disabilities is large and growing. We have not paid careful enough attention, or devoted sufficient resources, to planning for how to take care of these men and women who have served the nation.

There has been a tendency in the media to focus on the number of US deaths in Iraq, rather than the volume of wounded, injured, or sick. . This may have led the public to underestimate the deadliness and long-term impact of the war on civilian society and the government's pocketbook. Were it not for modern medical advances and better body armor, we would have suffered even more loss of life.

One of the first votes facing the new Democratic-controlled Congress will be yet another "supplemental" budget request for \$100+ billion to keep the war going. The last Congress approved a dozen such requests with barely a peep, afraid of "not supporting our troops". If the new Congress really wants to support our troops, it should start by spending a few more pennies on the ones who have already fought and come home.

Limitations of Data

This paper has been prepared based on the best available data from VA sources, CBO, GAO, and veterans organizations. Reconciling this data has therefore been done to try to generate realistic estimates, but is not precise. It is also difficult to predict with certainty the uptake in the military of benefits and medical care. In all cases this study has been done conservatively, for example it is entirely possible that after the length and grueling nature of this war, that a much higher number – perhaps 2/3 of returning veterans – would seek disability benefits and/or healthcare and the estimates in this paper prove too low.

Issues not addressed

This paper has not attempted to address the cost of taking care of wounded and disabled Iraqi soldiers in Iraq. A number of studies have estimated the fatalities in Iraq, but there are few studies of the number of injuries among the Iraqi military. As the US continues to place an emphasis on developing the Iraqi military to replace it, it is worth asking what the cost to that country will be of providing medical care and any kind of long-term

benefits to those who are fighting. This study excludes VBA benefits such as education, insurance, vocational rehabilitation, and home loan guaranty programs. This study also excludes private, state, and local healthcare, disability, and employment benefits for returning veterans.

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THE ECONOMIC COSTS OF THE IRAQ WAR:**AN APPRAISAL THREE YEARS AFTER THE BEGINNING OF THE CONFLICT¹**

Three years ago, as America was preparing to go to war in Iraq, there were few discussions of the likely costs. When Larry Lindsey, President Bush's economic adviser, suggested that they might reach \$200 billion, there was a quick response from the White House: that number was a gross overestimation.² Deputy Defense Secretary Paul Wolfowitz claimed that Iraq could "really finance its own reconstruction," apparently both underestimating what was required and the debt burden facing the country. Lindsey went on to say that "The successful prosecution of the war would be good for the economy."³

Many aspects of the Iraq venture have turned out differently from what was purported before the war: there were no weapons of mass destruction, no clear link between Al Qaeda and Iraq, no imminent danger that would warrant a pre-emptive war. Whether Americans were greeted as liberators or not, there is evidence that they are now viewed as occupiers. Stability has not been established. Clearly, the benefits of the War have been markedly different from those claimed.

¹ Paper prepared for presentation at the ASSA meetings, Boston, January 2006. The views expressed here are solely those of the authors, and do not represent those of any institution with which they are currently affiliated, or with which they have been affiliated in the past.

² OMB Director Mitch Daniels is reported to have said that Lindsey's estimates were "very, very high." Both he and Secretary of Defense Rumsfeld estimated the costs in the range of \$50-60bn, some of which they believed would be financed by other countries.

³ *Wall Street Journal*, September 15, 2002.

So too for the costs. It now appears that Lindsey was indeed wrong—by grossly underestimating the costs. Congress has already appropriated approximately \$357 billion for military operations, reconstruction, embassy costs, enhanced security at US bases and foreign aid programs in Iraq and Afghanistan. This total, which covers costs through the end of November 2005, includes \$251bn for military operations in Iraq, \$82bn for Afghanistan and \$24bn for related foreign operations, such as reconstruction, embassy safety and base security.⁴ These costs have been rising throughout the war. Since FY 2003, the monthly average cost of operations has risen from \$4.4bn to \$7.1 bn – the costs of operations in Iraq have grown by nearly 20% since last year (whereas Afghanistan was 8% lower than last year).⁵ The Congressional Budget Office has now estimated that in their central, mid-range scenario, the Iraq war will cost over \$266 billion more in the next decade, putting the direct costs of the war in the range of \$500 billion⁶.

These estimates, however, underestimate the War's true costs to America by a wide margin. In this paper, we attempt to provide a range of estimates for what those costs have been, and are likely to be. Even taking a conservative approach, we have been surprised at how large they are. We can state, with some degree of confidence, that they exceed a trillion dollars.

⁴ Congressional Research Service Report for Congress, "The Cost of Iraq, Afghanistan and Enhanced Base Security Since 9/11", Amy Belasco, Defense Specialist, October 7, 2005. This covers funding in P.L. 107-117, 107-206, 1207-115, 108-7, 108-11, 108-106, 108-199, 108-287, 109-13, 108-447, and the recent FY 2006 Continuing Resolution (109-77) which provides \$45bn for the 6-week period starting 9/30/05. DOD will need additional funds to cover the rest of the year.

⁵ Ibid.

⁶ The CBO estimated costs for the period of 2005-2014 under three scenarios. The estimates were \$179 bn, \$266bn, and \$392bn, respectively. We have conservatively used their middle scenario. CBO 2005.

Providing even rough order of magnitude estimates of the costs turns out to be very difficult, for a number of reasons. There are standard problems in cost allocation; there are future costs associated with the Iraq war that are not included in the current calculations; there are marked differences between social costs and prices paid by the government (and it is only the latter which traditionally get reflected in the cost estimates); and there are macro-economic costs, associated both with the increase in the price of oil and the Iraq war expenditures.

Consider, as an example, accounting for the value of the more than two thousand American soldiers who have died since the beginning of the war, and the more than sixteen thousand who have been wounded. The military may quantify the value of a life lost as the amount it pays in death benefits and life insurance to survivors – which has recently been increased from \$12,240 to \$100,000 (death benefit) and from \$250,000 to \$500,000 (life insurance). But in other areas, such as safety and environmental regulation, the government values a life of a prime age male at around \$6 million, so that the cost of the American soldiers who have already lost their lives adds up to around \$12 billion⁷.

The standard estimates of the death costs also omit the cost of the nearly one hundred American civilian contractors⁸ and the four American journalists that have been killed in

⁷ Government agencies have estimated the value of a life at \$6.1m (Environmental Protection Agency), and \$5.5m (Department of Transportation). The value of a life for victims of 9/11 were estimated in a range from \$2-\$11million.

⁸ Although the actuarial value of those lives should, presumably, have been included in the contractors' bid price when undertaking the contract.

Iraq, as well as the cost of coalition soldiers, and non-American contractors working for US firms.

The military values the cost of those injured by what their medical treatment costs and disability pay; and current accounting only reflects current payments in disability, not the present discounted value of (expected) future payments; a full cost analysis includes both the present discounted value of all future payments, as well as the difference between the disability pay and what the individual might have earned—and even this ignores the enormous compensation that would have been paid for pain and suffering had this been a private injury.

Costs of recruiting have increased enormously—and even after the war ends, there is reason to believe that compensation will have to be increased, including for Reserves and National Guard. Many Reservists, particularly those who are older, supporting families and established in their careers, underestimated the risks of being called to fight a war abroad and the ability of the government to force them to extend their tours of duty and even to serve second and third tours. The majority of these Reservists have suffered a significant loss in wages due to serving in Iraq. By the same token, wages currently paid the military almost surely represent an underestimation of a fair market wage, given what individuals would have needed to make them willingly undertake the job in Iraq. In fact, we know from the wages being paid by contractors performing similar work what the free

market wage for such services are, and they are a multiple of what the American military get paid⁹.

Even determining the current “direct” expenditures turns out to be a difficult task.¹⁰ The Administration has provided a number, based on the current costs of operations in Iraq. We are interested here in finding the *total economic cost*, the value of the resources used, and it is not always clear that standard accounting and budgetary figures reflect that. For instance, the faster depreciation or destruction of equipment already owned by the government is clearly part of the cost of the war. Standard cost allocation procedures would attribute a substantial fraction of the overhead in the Pentagon to the War; by devoting its attention to Iraq, it has less time to work on other issues, to prepare for other problems.

A true costing of the war would focus, of course, on the incremental cost; to the extent that the actual War substitutes for expensive “war games,” the incremental cost is less than the actual money spent. In our analysis we have subtracted the direct savings, such as policing the “no-fly” zone in Iraq, from the cost of the war.

⁹ For example, experienced security guards working for Blackwater Security, who guarded senior officials in the Coalition Provisional Authority, were earning up to \$1000 per day. The majority of such guards were former members of the military.

¹⁰ A recent report by the Government Accountability Office (GAO-05-767) states that the Defense Department has “lost visibility” on over \$7bn of funding and reports several cases where obligations exceeded appropriations in 2004, including \$4.3 bn in Army operation and maintenance. A recent report by the Congressional Research Service cites the difficulty of tracking Pentagon expenditures in Iraq, because (unlike the State Department and other agencies), DOD does not allocate funds by operation or mission until after the fact. “Defense Department witnesses periodically give average monthly costs or ‘burn rates’ for Iraq and Afghanistan but DOD has not provided Congress with a complete or consistent record showing those rates over time or total amounts for each operation each year”. CRS, 10/7/05.

This paper attempts to provide a more complete reckoning of the costs of the Iraq War than have previously been provided, using standard economic and accounting/budgetary frameworks. Of course, a final tally will have to wait the end, and even the President has made it clear that there is no clear end in sight. And even then, it will be years before we can be sure about whether our estimates of future costs—increased costs of recruiting or payments for disability or the health care costs of the injured veterans—were accurate.

Of necessity, the numbers, especially of future expenditures, are estimates, and we have tried to avoid a false sense of accuracy by rounding our numbers from the more precise estimates provided by econometric and statistical studies, when those are employed. We provide several sets of numbers. A “conservative” estimate that we think is *excessively* conservative. We realize that the numbers provided here may be controversial. They provide a picture of costs that is much larger than that which has been provided by the Administration, especially before the War. We also provide a second estimate, which, while still conservative, is more reasonable. We refer to this as our “moderate” estimate.

Our estimates, for instance, assume that we have 136,000 troops stationed in Iraq in 2006. The Administration has recently announced a troop reduction, from 160,000 due to the pre-election build-up, to 140,000, a number which is still larger than the numbers employed in our analysis.

We have not been able to quantify many of what may turn out to be the most important costs of the Iraq venture. There is a value in military preparedness, and it is the reason

for investing so heavily in defense. By most accounts, America's ability to engage in a second front at the current time is greatly diminished. At the beginning of the War, there was a great deal of talk about winning the hearts and minds of those in the Middle East. Recent opinion polls reflecting public opinion in the Arab world show that exactly the opposite has happened. Some American businesses have even claimed that anti-Americanism spawned by the Iraq War has had an effect on their sales and profits. America's credibility has been diminished: if some time in the future another American President were to claim that he had solid evidence based on intelligence that there was a threat, that evidence is more likely to be treated with skepticism. America has always prided itself in fighting for human rights; but America's credentials have been tarnished by Abu Ghraib and Guantanamo. These are among the many costs of the Iraq War that we do not attempt to quantify, but which should clearly be counted in any assessment of the Iraq War.

Nor have we included in this paper any of the costs borne directly by other countries, either directly (as a result of military expenditures) or indirectly (as a result of the increase in the price of oil.) Most importantly, we have not included the costs of the war to Iraq, either in terms of destruction of property (infrastructure, housing) or the loss of lives.¹¹ Clearly, including these would increase the cost of the war substantially—perhaps by an order of magnitude.

¹¹ We have not included the cost of the deaths of coalition soldiers and contractors, nor of the Iraqis themselves. Even the most conservative estimates put the loss of life at a multiple of that of the United States, with some estimates putting the numbers in excess of 30,000, or even 100,000. Of those, over 3000 Iraqi deaths have been among Iraqi military and police who are supporting coalition forces.

The paper is divided into two parts. In the first, we provide an estimate of the “direct” expenditures, and provide adjustments to reflect the true social costs of the resources deployed. The second provides an estimate of the macro-economic costs; the effects of the War on the overall performance of the economy, taking into account both the effects of the expenditures themselves and of the increased price of oil, some of which at least should be attributed to the War.

I. Budgetary Costs to the US Government

The budgetary costs of the war reflect the huge scale of operations that are being undertaken. For the first half of 2005, there were over 200,000 US military personnel stationed in Iraq and Kuwait (which serves as a staging ground for Iraq). To date, over 550,000 troops have served in Iraq in a combined total of approximately one million tours of duty¹².

The costs of the war in Iraq that have been reported in the media have almost exclusively focused on one type of cost – the \$251bn in cash that the government has spent on combat operations since the invasion of Iraq in March 2003. This is an important element of the financial cost but it is only the tip of a very deep iceberg.

Currently the US is spending about \$6bn per month on operations in Iraq. However, there are additional costs to the government – over and above this number. These include disability payments to veterans over the course of their lifetimes, the cost of replacing

¹² Many troops have served two or three tours of duty.

military equipment and munitions which are being consumed at a faster-than-normal rate, the cost of medical treatment for returning Iraqi war veterans, particularly the more than 7000 servicemen with brain, spinal, amputation and other serious injuries, and the cost of transporting returning troops back to their home bases. . The Defense Department, for which expenditures not directly appropriated for Iraq have grown by more than 5% (CAGR) since the war began, has also spent a portion of this increase on support for the war in Iraq, including significantly higher recruitment costs, such as nearly doubling the number of recruiters, paying recruitment bonuses of up to \$40,000 for new enlistees and paying special bonuses and other benefits, up to \$150,000 for current troops that re-enlist. Another cost to the government is the interest on the money that it has borrowed to finance the war.

Although it is difficult to estimate these costs precisely, we can use current and expected troop deployment to make a reasonable projection of the likely costs. Looking purely at direct budgetary costs to the taxpayer, we estimate that the total cost of the Iraq war is in the range of \$750 billion to \$1.2 trillion, assuming that the US begins to withdraw troops in 2006 and maintains a diminishing presence in Iraq for the next five years. We have looked at the budgetary cost both including and excluding the cost of interest on the debt. We have also adjusted this cost for economic factors, as outlined in section two. Under any reasonable set of assumptions, the cost of the war *even without* considering the macroeconomic costs – is more than double the current number provided by the Administration.

We have estimated the budgetary costs using two scenarios. Both scenarios are based on the troop deployment projected by the Congressional Budget Office.¹³ Our “Conservative” scenario assumes that all troops will be withdrawn from Iraq by 2010, and that all interest on the debt borrowed to finance the war will be repaid within five years. Under this scenario we count the long-term costs of disability pay and health care for veterans over a twenty-year period, even though most of the troops in Iraq are between ages 21-28 and are likely to live far longer. We have taken the present value of all cash flows at a 4% discount rate. Even under this conservative scenario, the direct costs to the government are likely to exceed \$700 bn. (See figure 1).

Under a second, “Moderate” scenario, we have used CBO’s assumption that a small but continuous US presence in Iraq continues through 2015. This has implications for the projected number of casualties and the length of involvement by the Defense Department. This scenario also assumes that the US budget will remain in deficit for the next 20 years. This would raise the cost of the war to over \$1.2 trillion. Both scenarios exclude the cost of operations in Afghanistan – estimated to be approximately \$82 bn to date and consuming \$1bn per month.

¹³ US Congressional Budget Office, *Estimate of War Spending FY 2005-FY2015*, Feb 1, 2005.

Figure 1: Budgetary Cost of the Iraq War (\$BN)

	<u>Conservative</u>	<u>Moderate</u>
1 Spent to date	251	251
2 Future spending on operations	200	271
3 VA costs	40	57
4 Cost for Brain injuries	14	35
5 Veterans disability payments	37	122
6 Demobilization costs	6	8
7 Increased defense spending	104	139
8 Interest on debt	98	386
Total	750	1,269

Assumptions for Figure 1 “Total Cost of War in Iraq to the US Government”.**1. Spending to date on combat and support operations:**

The total spending to date, as of December 30, 2005 is \$251 billion. This includes funds appropriated specifically for Iraq in Emergency supplemental appropriations in April 2002, November 2003, August 2004, April 2005, and the Continuing Resolution of September 2005, which covers the first 6 weeks of FY 2006. This money includes funding for combat operations, basic troop deployments and logistics, deployment of National Guard and Reserves¹⁴, food and supplies, training of Iraqi forces, weapons, munitions, supplementary combat pay, reconstruction¹⁵, and payments to countries such

¹⁴ Approximately 40% of the US troops serving in Iraq have been drawn from the National Guard and the Reserves, particularly the Army Reserves. Currently some 56,000 National Guardsmen and Reservists serve in Iraq. Additionally, over 60,000 people have been recruited to “backfill” domestic positions in the Guard and Reserves that are vacant because the others are in Iraq. The direct additional cost of mobilizing these individuals is \$3 billion per year. We have assumed that participation of the Guards and Reserves remains constant at 40%.

¹⁵ Congress appropriated \$18.4bn – an unprecedented sum- for Iraqi reconstruction in September 2003. This funding was specified for purposes including school construction, sewerage, sanitation, repair of the

as Jordan, Pakistan and Turkey. This also includes the payment of \$500,000 in “death gratuity payment” and life insurance to the survivors of the 2156 fatalities in Iraq during this period. We have not included the costs to the Defense Department for planning the invasion in the months prior to the invasion, which the Congressional Research Service has estimated at \$2.5 bn.¹⁶

2. Future spending on combat and support operations.

We have estimated the cost of future operations to be proportional to the number of troops scheduled to be deployed in Iraq from 2006-2010. We have estimated the current number of troops *stationed* in Iraq as 160,000, using the number cited by the Pentagon. Future troop deployment figures are based on recent forecasts by the Congressional Budget Office, which predicts that troop levels in 2006 will be reduced to 136,000. The CBO has forecast troop levels through 2015, but in the conservative scenario we are assuming that all troops are out of Iraq by 2010. However, this approach almost certainly underestimates the actual cost of military operations, because the Pentagon will hire contractors to replace some portion of the activities performed by troops who are withdrawn.¹⁷ In our moderate scenario, we have assumed that the US maintains a small troop presence until 2015, that we increase the number of contractors as troops decline, and that casualties continue, proportional to troop deployment.

electrical grid and other civilian projects. To date, most of the money spent has been diverted to military projects, including training bomb squads, training Iraqi security forces, constructing prisons, purchasing armored cars, and of the 3600 projects completed, some 25% of funds were spent on security. Money has also been diverted to pay for the elections (source: Special Inspector General for Iraqi reconstruction). The Administration has recently announced that it will rescind its request for remaining reconstruction money.

¹⁶ CRS, 10/7/05, Ibid.

¹⁷ Currently there are 20,000 – 25,000 private military contractors operating in Iraq, representing some 60 contracting firms. Experienced US soldiers can earn up to several times their military salary working for high-end contractors, in some cases up to \$1000/day. (IPS, 2004).

3. Additional Veterans Administration medical care costs for returning veterans.

As of December 2005, over 16,000 military personnel have been wounded in Iraq since March 2003, of whom 96% were injured after the official combat operations ceased (since May 1st, 2003). Due to improvements in body armor that protect the core body, there has been an unusually high number of soldiers who have survived with major injuries, such as brain damage, spinal injuries, and amputations. According to the Pentagon and other sources¹⁸, about 20% of those injured have suffered major head or spinal injury and an additional 6% are amputees. Another 21% suffered serious wounds that prevented them from returning to the military, including blindness, deafness, partial vision and hearing impairments, nerve damage and burns. In addition, more than half of the 550,000 US troops who have served in Iraq have served two or three tours of continuous duty under stressful, grueling conditions. Some 20,000 soldiers have been prevented from leaving the service by the government's "stop-loss" policy, which requires troops to extend their tours in case of emergency. It is perhaps not surprising that the surgeon general of the Army reported, in July 2005, that 30% of US troops have developed mental health problems within 3-4 months of returning from Iraq. To date, more than one-third of returning veterans have used the VA system for health ailments.

The number we include here represents a conservative estimate of the additional costs to the Veterans Administration due to providing medical care and other benefits (such as rehabilitation, retraining, purchase, fitting and replacement of prosthetic devices, and counseling -- but not including disability, housing, educational or loan payments) to

¹⁸ Wallsten and Kosec, AEI-Brookings Working Paper 05-19, September 2005, estimates 20% with serious brain injuries and 6% amputees. They estimate 24% with other serious injuries. (We use 21% with other serious injuries based on the latest Pentagon numbers).

returning Iraqi War veterans (other than those with brain injuries). The costs of treatment could be substantial. The VA had originally projected that 23,553 veterans returning from Iraq would seek medical care last year, but in June 2005, the VA revised this number to 103,000. The VA also is now responsible for providing care to an estimated 90,000 National Guards, who previously were not eligible for VA services. To meet these unforeseen demands, the VA appealed to Congress for an emergency \$1.5bn in funding for FY 2005. The VA is likely face a shortfall of \$2.6 billion in 2006¹⁹. While not all the additional health care expenditures may in fact be directly linked to the Iraq war, it will be difficult not to provide the requested medical care. We assume that this need will continue and increase to \$3bn as the veterans return home, and that the VA will require this additional level of funding added to its base budget.²⁰ (We expect that this figure is significantly understated, considering that The Veterans Administration is already facing a shortfall in funding to meet its existing obligations²¹.)

The additional cost of providing benefits to Iraqi war veterans will become a major challenge for the VA. In our conservative scenario we have estimated that all troops are withdrawn by 2010 and these costs for 20 years; in the moderate scenario we have assumed that troops continue to be deployed through 2015 and these costs continue throughout the lifetime of the veterans (40 years).

¹⁹ Institute for Policy Studies, 2005

²⁰ See the discussion in the next section for an alternative methodology, which focuses on the *direct* costs of the Iraq injured.

²¹ Former VA Secretary Anthony Principi said that the VA will need \$600bn over the next 30 years to meet its existing obligations for health care, education, pensions and housing loans – but this figure did not include the Iraqi war veterans. It also does not include additional funding for capital needs, including construction and repairs of VA facilities.

4. Medical treatment for brain injuries.

There is a special category of health care expenditures that go beyond those included in the above calculation—for those with brain injuries. To date, 3213 people -- 20% of those injured in Iraq -- have suffered head/brain injuries that require lifetime continual care at a cost range of \$600,000 to \$5 million²². The government will be required to commit resources through intensive care facilities, round-the-clock home or institutional care, rehabilitation and assisted living for these veterans.

For the conservative estimate, we have used a midpoint estimate of a net present value of \$2.7 million over a 20 year expected survival rate for this group, which is about \$135,000 per year, yielding a cost of \$14 billion. This amount seems low for brain-injured individuals who will require round-the-clock care in feeding, dressing and daily functioning. For the moderate estimate, we use a higher cost estimate (\$4m) and assume longer life duration for a total cost of \$35 billion. In both cases we assume that the number injured will rise in a manner consistent with the duration of the conflict.

5. Disability pay for veterans

Veterans of the Iraq war are eligible to claim disability pay and benefits, ranging up to a maximum of about \$44,000 per year, under a complex formula administered by the Veterans Administration. It is important to note that that Congressional intent for disability payments is to “compensate for a reduction in quality of life due to service-connected disability payment of this disability”. The benefit is intended to “provide

²² Wallsten and Kosec, AEI, *The Economic Cost of the War*, 2005 and Department of Defense estimates for number of wounded.

compensation for average impairment in earnings capacity” – but it does not require the veteran to actively seek employment nor is it offset against post-military civilian earning. The principle dates back to the Bible at Exodus 21:25, which authorizes financial compensation for pain inflicted by another.²³

Veterans are awarded claims based on the percentage of disability they can demonstrate; in gradations (0-100%) though it is possible to have a 0% disability percentage across multiple conditions and still qualify a veteran for some disability pay. The presumption for disability compensation is tied to symptoms that appear within a period of time after service. There are numerous programs that provide benefits depending on the situation, including disability compensation, specially adapted housing grants, medical benefits with higher priorities, vocational rehabilitation, service-disabled veterans life insurance, dependency and indemnity compensation (paid to surviving spouse and children if a veteran dies of an illness or injury contracted while on active duty, or dies of such after retirement).²⁴

We have estimated the amount of claims that the government will need to pay based on a projection of the rate of claims based on the Persian Gulf War. The government currently pays \$2 billion annually in support of 169,000 claims, or an average of \$11,834 per claimant. (Hartung, 2004) The total number of claims for that war exceeded 200,000, or more than one-third of the troops deployed, despite the fact that the war lasted 4 weeks with 148 dead and 467 wounded. Many of those claims were related to the exposure to

²³ VA Disability Compensation Program, *Legislative History*, VA Office of Policy, Planning and Preparedness, December 2004

²⁴ This principle is cited in numerous legal cases in which juries award compensation for injury. .

depleted uranium during the Persian Gulf conflict, and included ailments such as memory loss, sleep problems, Lour Gehrig's disease, poor concentration, and joint problems. Congress has established a "presumption of service-connection" for any health problems linked to "exposure to possible nerve agents and other toxins present in the Persian Gulf conflict and vaccinations against biological war hazards in preparation for the Persian Gulf."²⁵

In the Iraq conflict, more depleted uranium was used in the bombing of Baghdad than in the Persian Gulf conflict;²⁶ therefore the Iraq war veterans will be easily eligible for disability claims for any health problems that they can link to exposure. As we noted earlier, more than one-third of returning veterans have used the VA system for health ailments. We have estimated that those with serious injuries would receive the maximum disability benefits from the VA, those with medium-serious injuries would receive half those benefits (\$22,000), and one-third of the remaining forces would receive the average benefit awarded to the Gulf War veterans, or \$11,834. This sums to an annual payment of \$2.3 billion. In the conservative scenario we have estimated this payment over 20 years; in the moderate scenario we have assumed that these payments continue over the lifetime of the veteran, so until 2045.

²⁵ In 1994 Congress passed the Gulf War Veterans Benefit Act, which legislated a presumption of service connection for an undiagnosed illness that occurred within an unprescribed time frame, taking into account the Gulf War Syndrome. This time frame period was extended in 2001 to include any disabilities associated with the Persian Gulf War service that may appear through Dec 31, 2011. (VA Disability Compensation Program, Ibid).

²⁶ William Hartung, "The Cost of War" 2004, Taxpayers for Common Sense

6. Cost of demobilization.

The Pentagon has announced plans to reduce troop levels from their current force of over 160,000 to around 140,000 in the next year, and we have assumed that this withdrawal will continue gradually as outlined by the CBO. This will in itself require direct payments of \$6-10bn for the transportation and demobilization of troops, returning them to their home bases, or civilian roles (in the case of Reserves).

7. Increased defense spending

Since 2002, the total appropriations for the Defense Department have increased from \$310 bn to \$420bn, representing a total cumulative increase of \$325bn. Portions of the FY 2002, 2003, 2004 and 2005 appropriations bills, as well as FY 2003 and FY 2004 transfers, have been appropriated for Iraq. In total we estimate that 30% of the \$325 increase has been devoted to Iraq. This figure covers increased military pay, research and development, recruitment, operations and maintenance and replacement of equipment. According to Pentagon estimates, the military is wearing out equipment at a rate that is 4-5 times the rate of usage in non-combat situations²⁷. Additionally, CBO has estimated that the military will require some \$100bn in replacements over the next five to ten years. (Much of this funding has not yet been requested)²⁸ and GAO has referred to the shortfall

²⁷ Secretary Donald Rumsfeld said at a briefing on March 10, 2005 that US military equipment such as tanks, Bradley fighting vehicles and helicopters are being worn out at up to 6 times the peacetime rate. (Washington Post, 3/11/05)

²⁸ Scott Lilly, staff director of the House Appropriations Committee, said the Army would need more than \$17.5bn to replace or repair worn or damaged equipment in the first year of the war. But the Army's request for depot maintenance and procurement was only about \$2.2bn in the supplemental. "Pentagon's Request for Iraq includes money for troops and rewards", New York Times, 10/03/03. Additionally, Rep. Duncan Hunter, Chairman of the House Appropriations Committee, has cited figures that the Defense Department needs \$90bn per year in annual modernizations and at present levels, is still \$30bn short, based on CBO estimates. (Wall Street Journal, 5/03)

in funding for repairs, replacements and procurements²⁹ and the confusion between determining emergency supplemental and ordinary funding needs...

In our estimates, we have attributed one-third of the increase in Defense spending to Iraq, minus the savings from no longer policing the no-fly zone to the Pentagon. Savings from the no-fly zone have been estimated to be from \$11 to \$15bn per year.³⁰ Given that the Department is highly focused on the outcome of the war in Iraq, we estimate that up to one-half of the increase in the defense spending may be related to Iraq, but we have used only 30% of the spending in our conservative and moderate scenarios.

In addition, this increase reflects the military's increasing difficulty in recruiting troops and officers at all levels since the beginning of the Iraq conflict. During 2005, the Army was below target for most of the year, and actually lowered its targets in order to achieve them³¹. There were shortfalls in the Army National Guard, Army Reserves, and Marine Reserves. Applications to West Point and the US Naval Academy also fell between 10-25% from previous years. The military has responded to this challenge by hiring thousands of additional recruiters, increasing its national advertising campaigns, offering sign-up bonuses of up to \$40,000 for new recruits, offering higher retirement and disability benefits, increasing the "death gratuity" to \$100,000, and providing reenlistment bonuses of up to \$150,000 for experienced troops (who might otherwise leave

²⁹ The GAO has also referred to the shortfall in funding requests for military replacements. (GAO, "Global War on Terrorism: DOD Should Consider All Funds Requested for the War When Determining Needs and Covering Expenses.")

³⁰ Wallsten and Kosec estimate savings from the no-fly zone at \$32bn in the nearly 3 years since March 2003. John Amidon of the Air War College estimates the cost of policing the no-fly zone at \$15bn per year.

³¹ For example, the May recruiting target was originally 8050, but was lowered to 6706. Similar adjustments were made throughout the year.

the military to join private contractors who would pay even higher amounts). In further efforts to boost recruitment, the Pentagon increased the maximum enlistment age from 35 to 42 and relaxed standards for appearance and behavior, making it more difficult to be fired. The cost to the military per recruit has increased from \$14,500 in 2003 to \$17,500 in 2005. (Pentagon). Hardship pay has been increased from \$300 to \$750 per month. We assume that the military will need to make these changes permanent, adding at least \$1bn-\$2bn per year into the permanent budget base. Additional increases include military pay raises, and the purchase of more expensive body armor for combat.

8. Interest Payments on Debt

Given that at the onset of the War, the country was already running a deficit, and no new taxes have been levied, it is not unreasonable to assume, for purposes of *budgeting*³², that all of the funding for the war to date has been borrowed, adding to the already existing federal budget deficit. In the conservative scenario we assume that these funds are borrowed at 4% and repaid in full within five years. The moderate scenario assumes that the country continues to have a deficit over the next 20 years and therefore interest continues to accrue.

II. Costs of the War to the US Economy: Adjustments to the budgetary estimates

A second way to measure the cost of the war is to examine its *economic* cost. Economic costs differ from budgetary costs in three ways: (a) costs are borne by others (than the federal government and those fighting in the war), and these are obviously excluded from the budgetary costs *to the federal government*; (b) the prices paid by the government do

³² An *economic analysis* is somewhat more complicated, as the discussion in section IV will make clear.

not reflect full market value; and (c) economic costs do not include interest payments (which can be viewed just as transfer payments), but do include long run impacts on the growth of the economy. For instance, in the days of the draft, pay provided soldiers were a vast underestimate of their opportunity costs. Health care costs borne by soldiers and their families are examples of costs borne by others.

Here, we focus on the loss of productive capacity of the young Americans who have been killed or seriously wounded in Iraq, and the loss of civilian wages that would have been earned by those called back to duty in the Reserve forces.

There are some “problematic” items within the budgetary costs, most notably expenditures on veterans *not* linked with the Iraq war. The best way to think of this is as part of deferred compensation, and therefore, while the “categorization”—repairing human damage as a result of the war—is incorrect, it is still part of the cost of the war.

Once again we have estimated the costs under two scenarios. In the conservative case, the adjustments add \$187 bn onto to budgetary cost – raising the cost to \$839 bn, even when subtracting the entire cost of interest payments. In the moderate case, the economic adjustments increase costs by \$305 bn. Even if we deduct the cost of interest, the cost of the war under this scenario exceeds \$1 trillion. But these calculations ignore the fact that some of the resources deployed in the war could have been used to promote economic growth, and that there are a broad range of macro-economic costs, the effect of which, as

we shall show in the next section, is to increase the economic costs of the war by a significant amount.

	<u>Conservative</u>	<u>Moderate</u>
1 Spent to Date	3	8
2 Economic Cost of Reserves	3	9
3 Economic Cost of Fatalities	23	29
4 Loss due to Brain Injuries	34	48
5 Loss due to Other Serious Injuries	30	64
6 Loss due to Other Injuries	18	26
7 Less veterans disability payments	(12)	(28)
Increased depreciation of military hardware	89	149
Net Adjustment	187	305

The cost of the war to the United States, *before* taking macroeconomic factors into account, can therefore be estimated under a variety of assumptions to fall between \$700bn and \$1 trillion dollars, as shown in Figure 3.

Figure 3: Projected Cost of the Iraq War (\$US bn) without macroeconomic costs

Scenario	Budgetary cost (without interest)	Budgetary Cost (inc. interest)	Cost with Economic Adjustments³³
Conservative	652	750	839
Moderate	884	1269	1189

³³ Budgetary cost without interest+economic adjustments

Differences between assumptions for economic and budgetary models.**1. Economic Cost of Reserves.**

As we noted earlier, the US force in Iraq is composed of 40% the National Guard and Reserve forces. Many of these men and women normally work in critical “first responder” jobs in their local communities, such as firemen, policemen and emergency medical personnel. More than 210,000 of the National Guard’s 330,000 soldiers have served in Iraq or Afghanistan, and the average length of Guard mobilization is 480 days³⁴ It is difficult to measure the cost of this deployment in purely economic terms because there is a large unquantifiable cost in terms of the loss of these “first responders” to emergencies, including the value of the “insurance” of having these people ready to respond to emergencies. This was clearly seen in the Hurricane Katrina debacle, where 3000 Louisiana National Guardsmen and 4000 Mississippi Guardsmen were stationed in Iraq when the hurricane hit. According to the Institute for Policy Studies, some 44% of US police forces have some of their ranks deployed in Iraq. The loss of these services in Katrina and elsewhere clearly has had large budgetary and economic costs. We do not directly measure either the economic costs of the loss of “insurance” or the economic and budgetary costs arising from reduction in first responder capabilities (which may have been considerable.)

Still, there are some quantifiable economic costs that go beyond those noted earlier in our budgetary analysis. In the budgetary model, we included (as part of operating costs) the additional cost to the government of hiring replacements for those sent to Iraq, which is

³⁴ IPS, Ibid.

around \$3bn per year. In this model, we have subtracted that sum from the total cost of operations but added in the economic cost of the difference between the civilian wages that these individuals would earn in their regular occupations and the lower wages they typically earn in the Reserves. Scott Wallsten and Katrina Kosec (AEI/Brookings, 2005) have calculated that Reserve soldiers earn about \$33,000 per year as civilians. They estimate that the opportunity cost of using Reserve troops at current levels is \$3.9 billion to date. We have adopted that figure into our conservative assumptions. In our moderate model, we have increased the pay per Reservist slightly to \$46,000, taking into account the fully loaded cost of benefits, particularly for those reservists who are in police and fire departments and receiving 60-100% benefits.³⁵

2. Economic Cost of Military Fatalities.

The budgetary model only incorporates the payments made to individuals as a result of death. Had these individuals been killed in a car accident or a work related accident (other than military) there would have been much larger payments, reflecting the economic costs of the losses.

Although it is impossible to translate the value of a life into purely monetary terms, the government commonly uses this approach and determines the “Value of statistical life” or “VSL”, based to some extent on the value of foregone earnings and contributions to the

³⁵ It is apparent (evidenced by increased difficulties in recruiting) that individuals did not fully appreciate the risks they faced when joining the reserves, so that the wage received does not reflect adequate compensation for those risks. This is particularly true because of the stop-loss policy which requires troops to extend their tours, with some 20,000 having in fact been prevented from leaving their service at their scheduled dates. A full adjustment of the economic costs would include appropriate compensation for the risks taken. See below.

economy. This method is also widely used by insurance companies and other private sector concerns. In this study, we have estimated the VSL of each US military and contractor fatality as of December 2005. According to the Pentagon casualty reports, this is 2156 military fatalities and approximately 100 contractors.³⁶ We have projected these forward according to the two different scenarios described earlier.

We have not taken into account number of Iraqis who have been killed in the conflict, estimates of which range from 30,000 (the number estimated by President Bush in December 2005), to a 100,000 estimated by the British Lancet. We have also not counted the several hundred casualties among coalition countries, of which about 100 were British soldiers.

There are a wide range of VSL values in use. In our conservative scenario, we have adopted the standard set by the U.S. Environmental Protection Agency, \$6.1 million per life. However this is only an approximation. The value of a young life may be determined to be higher than average, based on an estimate of foregone earnings (Viscusi and Aldy, 2005³⁷). Juries frequently award much higher amounts in wrongful death lawsuits, and some have reached as high as \$269 million.³⁸ We have used the number

³⁶ In the case of the contractors, one might argue that their wages (already included in the analysis) includes compensation for the risk of the loss of life, so that the value of the loss of these 100 contractor lives should be subtracted (reducing the overall cost of the War by some \$600 million.)

³⁷ The "peak" age for VSL may be 29, in terms of lost earnings potential, with a VSL between \$5.9 and \$7.5 (Viscusi, and Aldy, NBER Working Paper 10199, 2003)

³⁸ There have been hundreds of large jury awards (ranging from \$2m - \$269 m) in wrongful death suits over the past five years. These include the awards of \$112 to Elizabeth and John Reden of New York for a malpractice case in which their daughter suffered brain damage (2004) and \$43 in Louisiana in 2001 for Seth Becker, a 24-year old who needed both legs amputated after an injury he sustained while working for Baker Oil Tools. In both of these and many other cases the amount awarded was determined primarily on the basis of the cost of round-the-clock medical care for life that the injured person would require. The

\$6.5 million in our moderate scenario. In projecting the number of fatalities and casualties forward, we have assumed that these would be proportional to the number of troops deployed in Iraq, based on the average number of casualties per month to date. However, even this is a conservative estimate, since the number of casualties has been increasing.

3. Economic cost of contractor fatalities.

There have been about 100 US contractors killed in Iraq since March 2003 (as well as some non-US contractors, mostly working for western companies.) In this model we have only included the US contractors, and extrapolated the numbers according to the two different war scenarios. We have used the VSL of 6.1 million and 6.5 million, respectively, for the conservative and moderate models. However it should be noted that in many cases, the contractors were highly skilled, highly paid specialists, working on reconstruction projects such as fixing the electricity grid and oil facilities. We have not counted their true loss to the success of the project in Iraq, or the fact that their high casualty rate has made it more difficult and more expensive for western contractors to higher replacements to perform these jobs.

\$269m award was for Rachel Martin, a 15-year old Texas girl who died in 1998. In most cases the plaintiffs receive less than the total award, typically about 10%.

4. Economic cost of the seriously injured.³⁹

Earlier, we described the budgetary costs of health care and disability for the seriously injured. The wounded contribute significantly to the cost of the war – both in a budgetary sense (in the form of lifetime disability payments, housing assistance, living assistance and other benefits from the Veterans Administration), and in an economic sense. The budgetary expenditures discussed earlier underestimate the true economic costs for three reasons: (a) they do not include adequate compensation for “pain and suffering,” of the kind that would have been provided, for instance, had those suffering injuries been hurt in an automobile accident; (b) they do not include additional health care expenditures by the parties themselves, their families, or other government agencies; and (c) perhaps most importantly, they do not include the loss of economic services. On the other hand, they do include health care expenditures that may not be directly a consequence of the war. However, as we noted earlier, we are treating this as part of the deferred compensation, and therefore it *is* both a budgetary and an economic cost.

In their recent study of the economic costs of the war, Wallsten and Kosec used a “value of statistical injury” to estimate the cost of the wounded. This value represents what people are willing to pay in order to avoid being injured. They applied this value to the number of injured personnel, according to the severity of their injuries and the average

³⁹ One might argue that for those joining the army and reserves *after* the beginning of the War, the increased compensation already incorporates the (present discounted value of) loss in welfare from the increased injuries (deaths), and so including both item 10 from table 1 and items 2 and 4 from table 2 represents “double counting.” Therefore, it may be argued, we should subtract \$5.3 (conservative; \$8.76 in moderate case) from the total. However, there is no reason to believe that those enlisting have a good sense of the actual risks (there is no evidence that the armed forces provides accurate information to the enlistees) and the increased compensation reflects not just the increased probability of injury and death, but also the stop loss provisions which did not allow individuals to leave the services at the scheduled time. In any case, the basic pattern of results is unaltered.

cost of treatment over its lifetime. They calculated total net present value of injuries at \$18.2bn to date, and \$48bn through 2015, using a 5% discount rate.⁴⁰

The Wallsten and Kosec study is quite thorough and we have used their estimates of the number and type of wounds, and lifetime treatment costs. However, they probably underestimated the total cost of the wounded because they only assigned an amount to the 26% with brain injuries and/or amputations. We have included additionally the cost of the 21% of personnel (5545 people, as of December 2005) with other serious wounds. Such injuries would include wounds from shells, explosions, gunfire, mortar, landmines, grenades, firearms and infections, resulting in conditions such as blindness, partial blindness, deafness, partial deafness, cardiac injury, facial deformation, burns, multiple broken bones, nerve damage and mental breakdown. We have deducted the veterans' disability payments from all these individuals.

We have estimated that personnel with serious injuries (including brain injuries) receiving full disability payments will essentially be lost to the economy and therefore we should assign them a VSL similar to the deceased, of \$6.1m. In the Conservative case, we have estimated that those who were wounded during the conflict, but returned to the military will suffer some impairment beyond the small amount of disability pay they may receive. We have very conservatively estimated that 20% of the total VSL would be an approximation of this impairment. Taken together, this adds approximately \$70bn.

⁴⁰ This is based on their "midpoint" scenario. Their high estimate is \$74bn

Under our moderate scenario, we have used a similar formula, but using an estimate of \$6.5m for the VSL and assuming that there are more casualties, due to the longer duration of the conflict. Less disability payments this adds another approximately \$110 bn.

There is another significant cost that we have not included, simply because we did not have the data to prepare a robust estimate. This is the degree of impairment that will be suffered by the other veterans – numbering some 160,000, or approximately one-third of the 550,000 veterans from the Iraq war – who will be eligible to claim some disability benefits. We believe that a significant number of these individuals will suffer substantial mental and physical ailments that will significantly reduce their earning potential and quality of life. If even 15% of these veterans were fall into this category, this alone would add another \$30-35 bn to the economic cost of the war⁴¹.

A conservative estimate of the risk premium individuals would require to be compensated for the injuries (beyond the loss of economic functionality and health care costs) could (with reasonable estimates of risk premia) double the total.⁴² We have, however, omitted those numbers from the analysis.

⁴¹ Assuming 20% of the VSL for 24,000 individuals.

⁴² Individuals are willing to pay insurance premia that are typically 60% to 120% of the value of the loss. In the case of the loss of limbs and other major bodily injuries, the risk premia are likely to be considerably higher.

5. Accelerated depreciation of military hardware.

There is only a slight difference in the estimate of the budgetary and economic costs associated with military hardware. The budgetary costs focus on replacement expenditures, the economic costs on the more rapid depreciation of hardware (than otherwise would have been the case.) In our conservative scenario, we have simply estimated straight-line 5-year depreciation for the \$100m in military replacements estimated by the House Armed Services Committee and CBO, over the next five years. This is in line with the DOD's assessment that equipment is being used up at 5 times the normal rate of utilization in peacetime. We are assuming that the Pentagon will incur at least an additional \$25bn in replacements through 2015, in the moderate scenario.

III. The Macro-economic effects of the War in Iraq

As large as the direct costs—current and future—are, the macro-economic consequences may even be several times larger.⁴³ There are at least three major sources of macro-economic consequences: (a) the increase in the price of oil; (b) the increase in defense expenditures; and (c) the increased insecurity that has followed from the way that the war has been pursued.

⁴³ We provide here preliminary estimates of the costs so far, and what those costs might be expected to be under various scenarios. We do not provide what would have been a reasonable estimate of the costs at the time that the United States went to war. Given the Administration's attempt to minimize the expected costs, it is not surprising that they did not take into account all of the costs discussed in this section.

In ascertaining the magnitude of these macro-economic effects, there is a standard problem: the counterfactual, what would the world have looked like, but for the war in Iraq.

Security

Consider the issue of security. The bombings in Madrid and London have only exacerbated a growing sense of insecurity. Would matters have been even worse had there been no war? One of the stated objectives of the war was to enhance the sense of security (to make sure that the war on terrorism was fought *there*, not here.) It is conceivable that the Middle East would have been even more unstable than it is today. But especially on the basis of what we know today—Iraq did not have weapons of mass destruction, and it did not have the capacities to develop them quickly – this seems unlikely. Contrary to the assertions before the War by the Administration, Iraq (with its highly secular regime) was not working with Al Qaeda, and was not a training ground for insurgency. Unfortunately, the disorder that has followed the war has provided a place where such training is going on today.

The costs of this insecurity are potentially huge.

- (a) Individuals are risk averse, and there is thus a direct quantifiable cost associated with the increase in risk.
- (b) The response to security threats has been to create significant barriers to the free flow of people, goods, and services. The Administration champions the virtues of free trade and the benefits from lowering trade barriers, even when those barriers are

already low. But increased border security (including airport security, the reporting and registration requirements of the bioterrorism act, etc) are trade barriers; not only are there direct costs associated with administering these security measures, there can be significant macro-economic effects of the reduced flow of goods and services. A special category of costs is associated with the significantly reduced flow of students to the U.S., especially in areas of science and technology, where we have become very dependent on these “imports.” (Many have stayed and made large contributions to the economy.)

- (c.) Increased risk is bad for business; it lowers investment, and over the long run thus has supply side as well as demand side effects.

Calculating these costs—and particular, the *incremental* costs associated with the Iraq War (beyond the costs which would otherwise be associated with the War on Terrorism)—is sufficiently difficult and problematic that we do not provide any estimates here. But it means that the numbers reported below almost surely underestimate the total macro-economic effects.

Oil

The price of oil is significantly higher today than it was before the War in Iraq. Even as the country went to war, it was recognized that it might have effects on the global oil market. Some of the remarks of those in the Administration seem to suggest that it may

have even been a factor driving the country to war. Larry Lindsey is reported to have said, “the best way to keep oil prices in check is a short, successful war on Iraq...”⁴⁴

The higher price of oil brings costs and benefits. Profits of the oil companies have increased enormously.⁴⁵ It is the one group (besides certain defense contractors) that has clearly benefited from the war. (Though popular discussions of the still not-clear motives for going to war often focused on oil, there is so far no reason to suppose that these benefits to one of the President’s “constituencies” played an important motivation.) Here, we are concerned with the costs to the overall economy of these high oil prices.

First, however, we have to ascertain to what extent has the increased price (from \$25 a barrel **before** the War to around \$50 today—ignoring the spike associated with Katrina when prices rose to \$60) been a result of the war itself.⁴⁶ Again, the question is, what is the counterfactual? What would the price have been had there been no war? To what extent is the rise in price due to the war, and to what extent is it due to other factors?

· Future markets provide some insight. Before the war, they were forecasting that oil prices remain in the range that they had been, \$20 to \$30. Futures markets take into

⁴⁴ *Wall Street Journal*, September 15, 2002

⁴⁵ In 2005, four of the ten most profitable corporations in the world are oil and gas companies – Exxon-Mobil, Shell, BP and Chevron Texaco. In 2002, only one of the top 10 most profitable corporations was from the oil and gas industry. Source: The Forbes Global 2000, <http://www.forbes.com/2005/03/30/05f2000land.html>
<http://www.forbes.com/2002/03/27/forbes500.html>

⁴⁶ Oil price averaged \$23.71/barrel during 2002. In run up to the war, price rose to \$32.23 by February 2003 (war began on March 20, 2003). One has to interpret a significant part of the run up of costs prior to the war to the war itself—an increase in stockpiling in response to worries about supply interruptions. The price averaged \$27.71 in 2003, \$35.90 in 2004 and rose to \$49.28 by June 2005. After Katrina, prices have stayed relatively high. As we argue, part of the cost of the War is the reduction in the capability of responding quickly to these supply shocks.

account growth in demands in China and elsewhere as well as changes in supply. They do so on the basis of “business as usual,” that is, on the basis that nothing out of the ordinary happens. The war in Iraq was the most notable event, and it is hard to identify any other which can be given as much credit for significant change in demand or supply (apart from Katrina). Some might blame the high demand for oil from China. But China has had two decades of robust growth, and its growth in 2004 was stronger than many market analysts had anticipated earlier; but global growth in 2005 (of around 4%) is clearly not particularly unusual. Markets are supposed to anticipate and respond to changes in demand by increasing supply. Errors in one year are quickly corrected in the next.

What is striking is that present prices are significantly higher than what most analysts believe is the long run price, and futures markets expect that such prices will persist for at least another two years.⁴⁷ That is, costs of extraction in Iraq (apart from the security concerns), Saudi Arabia, and elsewhere in the Middle East are much lower than \$40, and at \$40 there are many alternative sources (shale, tar sands) with a large supply elasticity. The question is, why has there not been this normal supply response. We suggest that the War in Iraq provides the critical explanation.

Had there been no war, and had price increased, the international community could have allowed Iraq to expand production, and this would have brought down the price. But it is more likely that production elsewhere, including and especially elsewhere in the Middle East, would have increased. The instability in the Middle East which has been brought

⁴⁷ Futures market predicts the price to remain mid \$60 range during 2006 and 2007 and then fall in 2008

about by the Iraq War has increased the risk of investing in that region; but because costs of extraction are so much lower than elsewhere, it has not provided a commensurate supply response elsewhere. If stability is restored, then prices will fall, and these investments elsewhere would turn a loss.⁴⁸

In addition, there is the fact that oil production in Iraq has plummeted since the war. Even though Iraq is not an oil producer on the scale of Saudi Arabia and Russia, Iraq did produce around 2.6m barrels per day (a similar level to Kuwait, Nigeria and the UK) on the eve of the war. Now production has dropped to 1.1million barrels per day. The insurgency has sabotaged refining capacity and truck drivers have refused to transport oil from the north, due to the threat of insurgents⁴⁹.

Though we believe, accordingly, that the best estimate of the cost of Iraq on oil prices is a very large proportion of the \$25 a barrel or more increase in the price of oil (and looking forward, we can extrapolate this cost for the next two years), we provide a conservative calculation based on the assumption that only 20% of that amount--\$5—is due to Iraq. In our moderate estimate, we assume \$10 is due to Iraq.

⁴⁸ The increase in the price immediately after the war can be partially directly attributed to Iraq, as what it had been supplying to the world markets under the oil-for-food program was greatly diminished (by almost 1 mbd). Oil prices had, of course, increased even before the war, in anticipation of these effects, so that the costs of the war began even before the war itself.

⁴⁹ Iraqi Oil production statistics from Pearson Education. Iraq produced 3.5 million barrels per day in 1990, prior to the Gulf War, and is said to have one of the world's greatest oil reserves.

Figure 4: Impact of Oil Prices

Year	Total Crude Oil Import (Thousand Barrels Per Day)	Total Import Per Year (Billion barrels)	Refiner Acquisition Cost of Crude Oil, Imported (\$/Barrel)	Total Cost of Oil Import (Billion US\$)
2000	11459.3	4.19	27.7	116.2
2001	11871.3	4.34	22.0	95.3
2002	11530.2	4.22	23.7	99.8
2003	12264.4	4.49	27.7	124.0
2004	13145.1	4.81	35.9	172.7
2005*	13415.5	4.91	47.9	234.7
2006**	13952.1	5.11	57.4	292.3
2007**	14510.2	5.31	65.0	344.3

*Average for the first 9 months of 2005. The total import cost is for the 12-month period using the 9-month average

**Assuming 4% growth in 2006 and 2007⁵⁰

Given U.S. imports of roughly 4.75 to 5.0 billion barrels a year, a \$5 per barrel increase translates into an extra expenditure of approximately \$25 billion (\$10 would be \$50 billion). Americans are, in a sense, poorer by that amount.

In a neoclassical model that assumes full employment of all resources, this would be the principle effect on national income. If the economy continues to use all of its resources

⁵⁰ Data compiled from Energy Information Administration, Department of Energy, U.S. Government, <http://www.eia.doe.gov/emeu/international/petroleu.html#IntlProduction>

fully, gross output remains unchanged; only what is paid for inputs of oil has increased, so that value added (GDP) is reduced commensurately.⁵¹

Assuming that a \$5 price increase persists for 5 years, this generates a conservative estimate of \$125 billion. For our moderate estimate, we use a \$10 price increase, but more plausibly, assume it extends (as future markets believe) for at least 6 years. That generates a cost of \$300 billion.

This supply side approach assumes that if the price increase is reversed, the damage is over. To put it another way, this simple model implies that if first the price goes up by \$10 for one year, and then down by \$10 by one year (from its baseline), and then is restored to its previous level, there is no cost. This is wrong. There is a cost to this volatility. The technology, for instance, that is best adapted to one set of prices will not be that appropriate for another. And the costs can be significant. This is consistent with macro economic studies that show large asymmetries between the impacts of increases and decreases in oil prices.⁵² Thus this analysis of a five-year period of high prices, which assumes that the only cost is the increased transfer abroad, provides a significant underestimate of the true economic costs. We have not, however, provided an estimate of this additional cost.

⁵¹ That is, simplifying, if we write $GDP = vL + \pi$, where π is profits, v is real wages, and L is employment, then $\partial GDP/\partial p = M + v\partial L/\partial p$, where p is the price of oil and M is imports. The last term is the effect of the price of oil on the amount of labor individuals wish to supply, which we assume is negligible. Note that when there is a large change in price, the effect is measured by $\Delta p M^*$, where M^* is some number between the level of the actual imports and what the imports would have been, had the price of oil not increased. Given the low short run elasticity of the demand for oil, the difference may be small.

⁵² See, e.g. Rodriguez, 2005

Global Income and Price Effects

The value of national income is affected by the prices of other goods the country imports or exports, and these too can *indirectly* be affected by the increase in the price of oil. If, for instance, a global increase in the price of oil leads to a decrease in the price of other commodities (because of a global slowdown), then America is thereby better off. These effects are complex and likely in any case to be small.

There may be some commodities that the United States exports in which it has market power. In that case, we take firms as setting the price of exports to maximize profits. An oil price shock lowers income of buyers of American products, shifting the demand curve over to the left. The income effect (at least for a small perturbation) is just the change in profits at the old price. If markets are fairly competitive, the effect is small, but especially in areas of the New Economy where mark-ups are large, the losses in income can be significant. We have not, however, directly tried to estimate the magnitude of these effects.

Most macro-economic analyses, however, assume that there are more than just these (neoclassical or) supply side effects. This is especially important when the economy is operating below full employment. We noted that with the increase in oil prices, Americans are poorer; they have that much less to spend on other goods—including goods made in the United States. There will be a reduction in aggregate demand, and the reduction in aggregate demand caused by an increase in oil prices is likely to result in a lower level equilibrium output.

The macro-economic counterfactuals

The net effect depends on the macro-economic state of the world and how policy makers respond. If the economy is already in a world in which there is excess supply (demand constrained), then we need to focus on how monetary and fiscal authorities respond to stimulate demand. If the economy were in a state of excess demand, then the dampening of demand would lower inflationary pressure, but would leave output largely unaffected. Unfortunately, the post Iraq war world is one in which there has been excess supply (demand constrained output) in all of the major economies.

Monetary policy response is determined by two offsetting factors. The oil price increase generates some inflationary pressures, and especially among central banks focusing on inflation, this leads to higher interest rates, exacerbating the slowdown of the economy. On the other hand, *if* central banks focus on aggregate demand and unemployment, it is conceivable that monetary policy could offset the adverse effects of oil price increases. If they fully offset the effect, then the *only* effect would be the transfer effect described earlier.

Fiscal policy typically does not adjust quickly enough to stabilize the economy (and the effect of built-in automatic stabilizers is reflected in the multipliers discussed below). Again, there are two effects. For countries with fixed expenditures, then the increase in the oil price means that there is less to be spent on domestic goods, and that exerts a downward effect on the economy. On the other hand, for countries running active

countercyclical fiscal policies, the slowdown in the economy could be offset by such policies.

With Europe's Central Bank focusing on inflation, the higher inflation resulting from higher energy prices most likely contributed to higher interest rates *than they otherwise would have been*, and thus a further weakening of the economy. Fiscal constraints (the growth and stability pact) has also meant that fiscal policy could not respond; on the contrary, increased government expenditures on energy meant there was less to spend on domestically produced goods and services, again contributing to the weakening of aggregate demand. In short, for Europe, the contractionary effects including policy responses are greater than without them.

In Japan, with interest rates close to zero in any case and fiscal policy stretched to its limits, probably little policy response can be attributed to the oil price increase.

The United States is the most problematic. It appears that fiscal policy has not been closely related to the short run cyclical state of the economy. (The worsening of the fiscal position of the United States may have contributed to the resolve by some moderate Republicans not to cut taxes or expand expenditures as much as they otherwise would have done.⁵³ In this sense, the oil price increase has probably had a negative effect on cyclical fiscal policy, i.e. the multipliers are larger than they would be if fiscal authorities took a "neutral" stance.) So too for monetary policy: the increased inflationary pressure

⁵³ The tax cut of 2003 occurred roughly contemporaneously with the War in Iraq. It does not appear that the War played any significant effect either in support or opposition to its passage; though it is likely that had the magnitude of the expenditures been identified, it might have weighed against the tax cut.

from the high oil prices would, if anything, led to a tightening of monetary policy in response to the high oil price, leading to a larger multiplier.

We have not carried out a full global general equilibrium analysis, but rely instead on results of standard macro-economic models. These suggest an “oil multiplier” of around 1.5 (achieved over two years).⁵⁴ ⁵⁵Thus, assuming that the economy remains below its potential over the period of analysis, and focusing on the total impact (not the timing), our conservative estimate is increased to \$187 billion, and our more reasonable estimate to \$450 billion. These models too have no feedback from exports.⁵⁶

Global effects

There are some studies, however, which obtain much larger results. The IMF’s models yield results with longer lags, but with full effects that are almost 4 times as large.⁵⁷

⁵⁴ One-year multipliers are typically smaller, but our concern is with the total impact, not the timing of the impact (the focus of most short run GDP forecasting models.) See Blinder and Wescott, 2004, based on model simulations from Global Insight, Inc. simulation results supplied August 9, 2004 (results with a monetary policy reaction function engaged and disengaged were essentially the same); and Macroeconomic Advisers, LLC simulation results supplied August 2, 2004.

⁵⁵ Increased expenditures on oil can adversely affect consumption (as households have less to spend on other goods), investment (as firms, other than producers of oil, see profits decrease from what they otherwise would have been), and government expenditures on domestically produced goods (as with budget constraints, there is less to spend on these). Impacts on households are, for instance, marked. Median household expenditures on gasoline and home heating have increased about 5% of household income. Given the low (zero) level of savings, this can be expected to translate into an equivalent reduction in expenditures on other goods.

⁵⁶ While these models predict the effects are not fully felt for two periods, they also predict that the effects are felt even after the prices come down. Our calculations ignore the timing of the impacts. Oil price shocks have effects that are different (and presumably greater) than many other shocks, since they adversely affect all of the advanced industrial countries simultaneously.

⁵⁷ See International Monetary Fund, “The Impact of Higher Oil Prices on the Global Economy,” Dec. 8, 2000, prepared by Research Department staff under the direction of Michael Mussa; cited in Blinder and Wescott.

One of the standard studies, that of Hamilton, estimates that *in the past* a 10% increase in the price of oil has been associated with a 1.4% decrease in GDP. A \$5 increase in the price of oil thus implies a lowering of GDP by 2.8%, or approximately (\$300 billion) *per year that oil prices remain at that level*. A five-year price rise would generate costs of \$1.5 trillion. Hamilton's analysis is consistent with an oil price multiplier that is much larger than the earlier studies.

There are two possible explanations of the large discrepancies in results. The first has to do with the analysis of global general equilibrium results, and can be seen most sharply in the context of a "counterfactual" which has governments maintaining a fixed level (or percentage of GDP) deficit. In the standard model, what limits the multiplier are leakages, income which is not spent "domestically," but is taken out of the system, and spent abroad, or by government. In both cases, the feedback of income into further expenditures stops. But if we take a global equilibrium approach, then the money spent abroad is part of the system. If we include government endogenous expenditures as part of the system, then as taxes are taken out of disposable income, government spends the increased revenues, just as if the individual himself had spent them. (There can be even "negative" leakages; if the government maintains a fixed deficit to GDP ratio, a stimulus—such as a fall in oil prices—leads to a higher GDP, and so an increase in government expenditures. Thus, for a global closed economy, the multiplier increases from $1/s(1-t) + t$, in which taxation reduces the multiplier, to $1/(s(1-t) - d)$, where taxation increases the multiplier (where s is the savings rate, t the tax rate on income, and d the

allowable deficit to GDP ratio) Thus, if $d = 0$, $s = .2$ $t = .25$, the multiplier increases from $1/.4$ to $1/.15$, i.e. it increases by a factor of almost 3.⁵⁸

(Of course, we need to model the oil exporting countries as separate from the oil importing countries, and spending a substantially smaller fraction of the income on American goods than Americans would. If Saudi expenditure and savings patterns were identical to those of Americans, then the change in the price of oil would simply be a change in the distribution of income, but have no effect on aggregates, besides the supply side effects originating from the higher price of oil. We have slightly overestimated the negative effects on American GDP by assuming that there is no feedback from increased Saudi income back to the United States.)

If we further include future consumption generated by extra savings, then even savings does not constitute a leakage, so long as over the prevailing time horizon, the economy remains in a demand constrained situation. In short, leakages are much, much smaller, when multiyear aggregate incomes are calculated. These dynamic feedbacks are even present in first year income. Thus, increased savings this year leads to increased wealth next year, and that increased wealth leads to increased output (if output is sensitive to demand). But rational consumers will realize this⁵⁹; their lifetime income has gone up, and so too will there current consumption. In calculating the cost of the War, we are concerned not just with the impact today, but the impact in all future years. Calculating

⁵⁸ $Y = (1-t)(1-s)Y + tY + dY + I + X - mY$, since $G - tY = dY$, so $Y = I + X / (s(1-t) + m - d)$

⁵⁹ See Neary and Stiglitz, 1983

the total multipliers requires assessing the fraction of future periods in which it is reasonable to assume that demand constraints will be binding.^{60 61}

In the periods at hand, Europe, the United States, and Japan were all demand constrained throughout the relevant time, and government expenditures were very much constrained by the level of revenues (especially in Europe). In the very short run, it was clear that such constraints were not perfectly binding in the U.S., but government expenditures were tempered from what they otherwise would have been by the looming deficit. This is clearly true for the states and localities (which make up a third of total expenditure) but even true at the Federal level. Accordingly, we believe a multiple period multiplier that is substantially in excess of that generated by the partial equilibrium American models (generating, as we have noted multipliers around 1.5) is warranted. Numbers of the order of magnitude generated by the IMF model are totally reasonable, but to stay on the conservative side, we use a much smaller multiplier of 2 as our (conservative) “moderate” estimate. (We even believe the very large multipliers implicit in Hamilton’s study are not implausible.)

However, we do believe that great care must be used in employing studies based on the impact of earlier oil price shocks. Changes in the structure of the economy, the nature of

⁶⁰ When supply constraints are binding, individuals may displace consumption to other periods, so the net effect may be not much different from that which would prevail if demand constraints were always prevailing.

⁶¹ Consider a simple two period model in which there is not the second feedback, but in which increased savings this period does lead to increased consumption next period. Then the two-period ($Y_1 + Y_2$) multiplier associated with increased investment the first period is, instead of $1/m$ (where $m = s(1-t)$), $(1 + \alpha(1+r))/m$, where α is the marginal propensity to consume out of wealth. In a simple life cycle model with no bequests, where the only reason to save is for consumption in “the” future period(s), $\alpha = 1$, so the multiplier has more than doubled.

the policy responses, and the state of the economy (the extent to which it was at or near full employment) can have large effects on the full response of an oil price increase. Earlier increases occurred at a time when the global economy was already facing inflationary pressures (the U.S. from trying to ignore the fiscal costs of the Vietnam War.) Under doctrines of monetarism, there were large responses—excessive-- to the inflation resulting from the oil price shock. Globalization has put greater downward pressure on prices, so today, inflation is much more benign. Monetarism has been discredited, and even if de jure or de facto inflation targeting has meant that some countries put excessive focus on inflation, including the inflation generated by high oil prices—and thus monetary policy exacerbates the contractionary pressures of oil--it does so less than it did in the earlier oil price shocks.

Thus, while we believe that these global general equilibrium effects are significant, and should raise the multiplier considerably about 1.5 or 2, given the uncertainties associated with these global general equilibrium effects, we do not include them in our conservative estimate. For our “moderate” estimate, we use a 6-year impact and a multiplier of 2. We believe, however, that a substantially larger multiplier might be justified.⁶²

Budgetary costs

The most difficult to estimate macro-economic costs are those associated with the increased expenditure. If we were not spending the money on the war, would we be

⁶² For instance, the IMF study cited earlier with much larger multi-year multipliers, near 4, would be associated with a total impact of \$1.2 billion over 6 years.

spending it on something else? Would we have cut back spending, and had a smaller deficit? Would we have had the same deficit, but just more tax cuts?

But this is only part of the counterfactual analysis. How would the Federal Reserve have responded to the different macro-economic situation? Would it have dampened or exacerbated these effects?

These are standard questions in *incidence analysis*, in which public sector economists attempt to ascertain the consequence of one policy or another. One standard methodology focuses on *expenditure switching*: it is assumed that the government simply substitutes Iraq expenditures for other expenditures (some defense, some non-defense). This is the methodology upon which we focus here.

Another methodology focused on *marginally balanced budgets*, where taxes are assumed to increase in tandem (from what they otherwise would have been; there may still be tax cuts, but they are somewhat smaller than they otherwise would have been.) The Bush Administration seems undeterred in its commitment to make its tax cuts permanent, unaffected by the War, but Congress is showing some sensitivity to the size of the deficit.

A third methodology assumes that the increased expenditure leads to higher deficits. We comment on the implications of this at the end of this section.

The expenditure switching methodology focuses on two critical differences between expenditures on the war in Iraq and other public expenditures, such as investments in research, infrastructure, or education. The first is that the *domestic content and leakages* differ. Consider, for instance, a \$1000 spent to hire Nepalese workers to perform services in Iraq. There is no “first round” effect on domestic GDP, and little impact on subsequent rounds (only to the extent that the Nepalese contractors buy goods made in the United States). By contrast, a \$1000 spent on university research in the United States has a full \$1000 first round impact, and high impacts in subsequent rounds. While “multipliers” associated with different kinds of expenditures are known to differ, there may be few expenditures with a lower multiplier than those in Iraq.

There are no data on the basis of which to provide accurate estimates of the differences in multipliers and leakages. Assume, however, that in the case of normal investment expenditures (like university based research) the first round and subsequent rounds of expenditure have a leakage of .67, generating an overall multiplier of 1.5. (The numbers are chosen to be deliberately very conservative.) By contrast, if the first round expenditure for Iraq is three-fourths that amount (again a conservative number, since it may well be much less) and leakages are the same thereafter, then the overall multiplier is 1.1. Switching \$500 bn (over the years of the war) to domestic investment would have resulted in increased GDP by \$200 bn.

(For some of the long run costs referred to in the first section of this paper, there are not likely to be large differences in multipliers. The increased disability and health care costs

of Iraq War veterans are likely to have multipliers similar to that for investment expenditures. That is why we have conservatively focused on the impact of switching only \$500bn.)

The second major difference is impacts on long run output. Investments in the public sector yield high returns, and so output would have been higher in the future.

Expenditures on the Iraq war have no benefits of this kind. As a result, output in the future will be smaller. Assume, for instance, that of the direct costs of the war estimated in the previous section \$500 billion⁶³ were put into investments yielding conservatively a 6% real return on the investment, and using a (conservative) 4% discount rate, the present discounted value of the lost income is \$750 billion.⁶⁴

If the government had, instead, simply let the deficit grow, one would have to calculate the additional growth costs of that deficit. The additional deficit could, for instance,

⁶³ Obviously, it is conceivable that far more than \$500 billion out of the nearly \$1 trillion in Iraq expenditures switch to investment.

⁶⁴ 6% is the certainty equivalent return. Investments in government research have been shown to have much higher rates of return. The natural discount rate to use (for discounting certainty equivalents) is the real T-bill rate, which in recent years has been close to zero or negative. Historically, it has been around 1.5%. The present discounted value of lost income of an investment I yielding a return of g at a discount rate of r is Ig/r , i.e. a "multiplier" of g/r . We have been conservative in choosing a low g and a high r , generating a multiplier of 1.5. The standard cut-off for government projects is 7%, and research yields are even higher. Using a value of $g = .07$ and $r = .015$ yields a multiplier of 4.67, which is substantially higher. In the case at hand, with forgone investment of \$500 billion, the PDV of future lost income is \$2.3 trillion.

Note that it would be double counting to both count the value of the investment (the opportunity cost) and the value of the benefits that would have been generated by the investment. In a world with perfect markets and no costs to raising taxes, presumably there would be no difference between the discount rate and the marginal return to investment, in which case, the value of the investment would be equal to the present discounted value of the benefits generated by it. In the public sector, however, it is clear that there are often large discrepancies. A relatively modest investment in levees in New Orleans would have saved hundreds of billions of dollars.

crowd out private investment, and calculations similar to those just performed would provide an estimate of the cost, somewhat larger than the costs estimated above.⁶⁵

Other macroeconomic costs (stock market, housing)

Higher oil prices and higher interest rates to which the oil prices give rise also have effects on asset values. To the extent that these effects are greater than just the current year effects on profits, they suggest a persistence of the consequences that our previous analysis did not fully take into account, and the existence of large non-linearities. This is evident in the industries that are particularly sensitive to oil prices, like the airline industry, where many firms face the prospect of bankruptcy.

The surge in corporate profits in the last couple of years has not been accompanied by an increase in stock prices of the magnitude that would have been expected. Robert Wescott⁶⁶ estimates that the value of the stock market is some \$4 trillion less than would have been predicted on the basis of past performance. Assuming that the major factor contributing to that is the increase in oil prices, and that 20% of that increase in oil prices is due to Iraq leads to a cost of some \$800 billion. This is several times the increase in the direct energy costs over the next few years. This may reflect the fact that we have grossly underestimated the effects by limiting our analysis to six years; or to the fact that

⁶⁵ If the private investment yields a return of 8%, and we discount at the rate of 4%, then the \$500 billion of displaced investment has a PDV costs of \$1 trillion, or \$500 billion in excess of the direct costs. If the United States borrows the full amount abroad, and there are no effects on the interest rates at which the U.S. can borrow, then there is no displacement effect, and the only costs are the direct costs already estimated. At the same time, the deficit-financed expenditures will give rise to a positive aggregate demand effect. \$500 billion of expenditures, in the assumptions given earlier, would have an additional multiplier effect of \$50 billion. Note that in the case of full deficit financing, in the moderate scenario, the total budgetary impact is \$1.185 trillion; if just 25% of this displaces private investment, the estimated macro-economic costs would be greater than under the expenditure switching analysis.

⁶⁶ Personal correspondence

there are large non-linearities.⁶⁷ But this decrease in corporate wealth does imply that consumption was lower than it otherwise would have been, with the attendant multiplier effects.⁶⁸

Uncertainty about future oil prices also has a dampening effect on investment. Firms do not know what technology is appropriate for the economic environment that will prevail, and respond to that uncertainty by postponing investment. This has both an effect on aggregate demand and aggregate supply in the short run. Again, we have not estimated the magnitude of these effects

Summary

The macro-economic costs are potentially very large; possibly even a multiple of the direct costs. Clearly, though ensuring supply of oil was one of the sometimes stated or inferred goals, the risks of Middle East instability that might result was often noted as one of the main risks of the venture. What has happened is certainly within the range of predicted consequences to the price of oil⁶⁹; and experiences in the 1970s should have made us aware of how large the macro economic consequences could be. In short, while large, when adjusted for the larger size of the economy today, they are, we believe, totally plausible.⁷⁰

⁶⁷ For example, bankruptcy exerts a strong non-linearity. Some key American industries (automobile, airlines) have been pushed near bankruptcy as a result of oil prices.

⁶⁸ Similar issues arise in the case of housing. Though there has been a boom in housing, presumably if the costs of operations were lower, the demand for housing services would have been higher, and prices would have been still higher. We have not estimated the value of the implied reduction in the value of housing *from what it otherwise would have been*.

⁶⁹ See, in particular, Nordhaus [2002].

⁷⁰ For most of the analysis, we have assumed that there has been excess capacity in the economy, i.e. the economy during the period of concern has been operating below its potential. This is evidenced not only

Figure 5: Macro-economic effects (\$ billion)

Impact	Conservative	Moderate
Oil price increase		
Transfer (supply side) effect	125 ⁷¹	300
Aggregate demand ⁷²	62	150
Global General Equilibrium		150
Budgetary impacts		
Expenditure switching		200
Growth impacts (PDV)		250
Total	187	1050

by figures on capacity utilization and by the fact that the employment ratio (fraction of working age population working) is significantly below the level of the 90s. Even the unemployment rate is significantly higher than the 3.8% reached in the 90s (and there appeared to be no significant inflationary pressures even at that unemployment rate.) The factors that have led to a decrease in the NAIRU, including the competitive supply of goods from abroad, have continued to operate, so that there is every reason to believe that the NAIRU remains far lower than current unemployment rates. (See Stiglitz, 2000). Stagnation and declines in real wages, higher than normal levels of "disability," and large numbers of individuals claiming to be working part time involuntarily are consistent with this view of significant weaknesses in the labor market, i.e. significant potential for increasing incomes without generating increases in inflation. Our analysis assumes that potential output will exceed actual output for (in the conservative scenario) the next two years. This is consistent with most forecasts which see a slowing of growth to between 3.25% and 3.5% in the period 2006-2008, particularly as consumption growth is dampened from its unsustainable levels fueled by rising real estate prices and low interest rates. Even if productivity growth slows from the 3% that marked the nineties, these rates are not sufficient to overcome the "jobs deficit" created in 2001-2003. In any case, even our "moderate" estimate projects that had oil prices not been as high, output would have been higher by amounts that are a fraction of the estimated gap between potential and actual output.

⁷¹ Conservative: \$5 barrel for 5 years; moderate: \$10 barrel for 6 years

⁷² Conservative: (multi-year) multiplier of 1.5; moderate: (multi-year) multiplier of 2

We therefore estimate that the total economic costs of the war, including direct costs and macroeconomic costs, lie between \$1 and \$2 trillion, as shown in Figure 6.

Figure 6: Total Economic Costs of the Iraq War (\$BN)

Scenario	Conservative	Moderate
Direct costs	839	1189
Macroeconomic	187	1050
	1026	2239

List of Omitted Costs

Defense and destruction costs

- Costs of planning war⁷³
- All costs borne by other countries, including Iraq
 - Military costs
 - Destruction of property
 - Loss of life
- All costs of increased insecurity⁷⁴
 - Increased costs of cross border flows
 - Reduced investment
- Consequences of Loss of credibility

⁷³ Estimated at \$2.5 billion

⁷⁴ Other than the indirect impact of increased insecurity in impeding oil supply response

- Value of reduced capability of responding to national security threats elsewhere in the world

Value of reduced capability of responding to domestic situations in which the National Guard or the Reserves might have been called upon (as in New Orleans)

Macroeconomic costs

- All costs of increased insecurity⁷⁵
 - Increased costs of cross border flows
 - Reduced investment
- Indirect aggregate demand effects (as a result of reduced incomes in trading partners)⁷⁶
- Costs of oil price volatility
 - Including on investment
 - Costs of bankruptcy⁷⁷
- Reduced demands as a result of anti-American sentiment
- Consequences of losses of asset values (arising from increase in oil prices or otherwise)
 - Equity markets
 - Housing
- Consequences of tighter monetary policy as a result of increased inflation⁷⁸

⁷⁵ Other than the indirect impact of increased insecurity in impeding oil supply response

⁷⁶ Other than as reflected in higher multiplier in "conservative" case

⁷⁷ Other than as reflected in the multiplier analysis. The multiplier analysis focuses on demand side effects; bankruptcy costs are more correctly viewed as supply side effects (not included in the standard neoclassical model.)

- Consequences of worsening fiscal position
 - As a result of increased government expenditures on oil⁷⁹
 - As a result of increased expenditures on the war⁸⁰

Other costs

- Costs of risks borne by individuals⁸¹ (including compensation that would be required to make them willingly bear risks)
- Economic Cost of impairment to earnings potential and quality of life for veterans who claim partial disability (est. 160,000) but were not wounded during the conflict
- Health care costs not borne by the government.

IV. Concluding Remarks

The most important things in life—like life itself—are priceless. But that doesn't mean that topics like defense, involving the preservation of our way of life and the protection of life itself, should not be subject to cool, hard analysis of the kind for which economics has long earned a reputation.

Take the decision of when to go to war. Here, economic analysis employs the concept of *option value*. Even if one thinks war is inevitable or highly likely, there is a question of timing because there are costs and benefits to postponement. The enemy may be better

⁷⁸ Other than as reflected in multiplier analysis.

⁷⁹ Other than as reflected in multiplier analysis.

⁸⁰ In the "Conservative" scenario. In the "moderate" scenario, we perform an expenditure switching incidence analysis, which provides a number that may partially reflect these costs.

⁸¹ Other than as reflected in increased recruitment costs.

prepared, but so may we. Normally, one goes into such a war under the presumption that one is going to win, and therefore a critical issue is managing the post-war occupation. Without adequate preparation, weapons may easily fall in the hands of insurgents—as in fact they did—enormously increasing the occupation costs. With adequate armor, fewer American troops are likely to be injured or killed. As even the Secretary of Defense has admitted, in the rush to war, there was not time to provide adequate protection for the troops, protection that clearly the richest country in the world could have afforded and that its citizens would have expected.

Economists also think about the *value of information*. In this situation, postponing war might have allowed us to gather better information with which to judge whether Iraq posed a real threat. This is not, as Americans say, Monday morning quarterbacking: there were already strong suspicions regarding our sources of intelligence on Iraq's alleged weapons of mass destruction. More time would have enabled the verification of this evidence. The value of this information would have been enormous. The possibility of war later on would have still been an option. Tens of thousands of lives would have been spared, and hundreds of billions of dollars saved.

All of this leads to economists' constant urging that politicians undertake a *cost benefit analysis* before undertaking any project—especially one with as significant consequences as war. This can and should be done even if certain elements of the costs and benefits are hard to value.

If Congress had been informed of the range of costs, perhaps if they had been told that the costs might exceed a half trillion, or a trillion dollars, perhaps, in the end, they would have made the same decision. But perhaps they would have been a bit more cautious in making that decision, looked a little harder at the evidence, thought differently about how best to conduct the war.

We have not attempted in this paper an overall assessment of whether the war was conducted in the most cost efficient manner, i.e. whether, given what has been achieved (however that is defined), those objectives could have been achieved at lower costs. We have taken the expenditures, as they have occurred, not as they might have been. The Administration has explicitly tried to fight the war on the cheap, that is limit direct commitments of American troops, even shortchanging body and personnel armor. In violating the Powell doctrine, this may be one of those instances of “penny wise-pound foolish”. Certainly, the long run costs to the individuals and to society of the individuals who died or were badly maimed (not to mention the additional costs of recruitment) far exceed the savings from not purchasing better body protection. Many observers believe that the manner in which the War was conducted led to the extended insurgency, which too has greatly increased cost.

Though we have suggested that many of the costs were within the range of what could have been anticipated, we have not sought in this paper to ascertain whether on the basis of the information available, the Administration could have made more reliable estimates. We do not address the question of whether the disparity between the predicted numbers

and the actual numbers is a result of a deliberate attempt of the Administration to mislead the American people on the cost of the war, or of incompetence, going to War with information of low reliability and with best estimates that were far from the mark. In response to accusations about the existence of weapons of mass destruction and the connection with Al Qaeda, the Administration has been adamant that it did not intentional deceive the American people; it prefers charges of incompetence to those of malevolence. We have not attempted to ascertain the relative role of each in the failure to provide the American people with an accurate cost of the venture. At the very least, though, honesty would have required laying out the various scenarios, even if it attached low probabilities to those that in fact turned out to be the case.⁸²

Americans could, and should have asked, are there ways of spending that money that would have enhanced our long run well being—and perhaps even our security—more. Take the conservative estimate of a trillion dollars. Half that sum would have put social security on a firm grounding for the next seventy-five years. If we spent even a small fraction of the remainder on education and research, it is likely our economy would be in a far stronger position. If some of the money spent on research were devoted to alternative energy technologies, or to providing further incentives for conservation, we would be less dependent on oil, and thereby more secure; and the lower prices of oil that would result would have obvious implications for the financing of some of the current threats to America's security. While we may not know what causes terrorism, clearly the

⁸² An excellent example of the kind of analysis that could and should have been provided is that of Nordhaus (2002), who lays out various scenarios. The CBO and the House Budget Committee provided some estimates. Nordhaus points out, however, that they did not include scenarios involving extended engagement, occupation, and reconstruction.

desperation and despair that comes from the poverty that is rife in so much of the Third world has the potential of providing a fertile feeding ground. For sums less than the direct expenditures on the war, we could have fulfilled our commitment to provide .7% of our GDP to help developing countries—money that could have made an enormous difference, for the better, to the well being of billions today living in poverty. We could have had a Marshall Plan for the Middle East, or the developing countries, that might actually have succeeded in winning the hearts and minds of those in the Middle East.

What is clear is that the Administration's original estimates were strikingly low.⁸³ Would the American people have had a different attitude towards going to war had the known total cost? Would they have thought that there might be better ways of advancing the cause of democracy or even protecting themselves against an attack, that would cost but a fraction of these amounts? In the end, we may have decided that a trillion dollars spent on the War in Iraq was better than all of these alternatives. But at least it would have been a more informed decision than the one that was made. And recognizing the risks, we might have conducted the War in a manner different from the way we did.

⁸³ It is of interest that our "moderate" estimate is not dissimilar to Nordhaus' "high" (protracted and unfavorable) case, \$1.9 trillion. His estimate of direct military spending, occupation, and reconstruction was \$745. However, he did not include a number of the long run costs (such as health costs and disability benefits and increased recruiting costs), nor the adjustments between economic and budgetary costs noted in section III. His estimate of the direct impact on oil markets (the transfer effect) was \$778 billion, which we believe to be more accurate than estimate of \$300 million (in the moderate case), which was deliberately chosen to be conservative. He uses a "macro-economic oil" multiplier that is similar to ours, but because he (realistically) assumes a large oil price effect, he obtains a larger macro-economic effect. He does not include any "growth investment/displacement" or "expenditure switching" effects in his analysis. Nordhaus' historical analysis puts some perspective on the magnitude of the expenditures: the projected direct expenditures in Table 1 are comparable to those of the Vietnam War (\$494 billion), somewhat greater than the Korean war (\$336 billion) and more than twice as large as World War I (\$190 billion).

References

- Abeysinghe, Tilak, "Estimation of direct and indirect impact of oil price on growth", *Economics Letters* 73 (2001) 147–153
- Belasco, Amy. "The Cost of Iraq, Afghanistan and Enhanced Base Security Since 9/11", Congressional Research Service, Report for Congress, October 7, 2005
- Bennis, Phyllis and Leaver, Erik, "The Iraq Quagmire: The Mounting Costs of the War and the Case for Bringing Home the Troops", Institute for Policy Studies and Foreign Policy in Focus, August 2005
- Blinder, Alan and Robert Wescott, "Higher Oil Prices Will Hurt the U.S. Economy," August 10, 2004, unpublished
- Congressional Budget Office, "Estimated Costs of a Potential Conflict with Iraq," September 2002, available at <http://www.cbo.gov/> and reports and estimates published in 2003, 2004, and 2005
- Hamilton, James D., "What is an oil shock?" NBER Working Paper Series 7755, June 2000
- Hartung, William, "The Cost of the Iraq War", Taxpayers for Common Sense, 2004
- House Budget Committee, Democratic Staff, *Assessing the Cost of Military Action Against Iraq: Using Desert Shield/Desert Storm as a Basis for Estimates*, September 23, 2002
- Kniesner, Thomas, Viscusi, Kip, Woock, Christopher, and Ziliak, James, "How the Unobservable Productivity Biases the Value of a Statistical Life", NBER W.P.11659, September 2005
- Neary, Peter, and J. E. Stiglitz, "Toward a Reconstruction of Keynesian Economics: Expectations and Constrained Equilibria," *Quarterly Journal of Economics*, 98, Supplement, 1983, pp. 199-228.
- Nordhaus, William D. "The Economic Consequences of a War with Iraq", Cowles Foundation Discussion Paper Series, Yale University, December 2002
- Rodriguez, Rebeca and Marcelo Sanchez, "Oil price shocks and real GDP growth: empirical evidence for some OECD countries", *Applied Economics*, 2005, 37, 201–228
- Stiglitz, J. E. "Reflections on the Natural Rate Hypothesis," *Journal of Economic Perspectives*, 11(1), Winter 1997, pp. 3-10.
- U.S. Government Accountability Office, "Global War on Terrorism: DOD Should Consider All Funds Requested for the War When Determining Needs and Covering Expenses"; GAO-05-767
- Wallsten, Scott and Kosec, Katrina, "The Economic Costs of the War in Iraq", AEI/Brookings, working paper 05-19, September 2005

PREPARED STATEMENT OF ROBERT D. HORMATS, VICE CHAIRMAN, GOLDMAN SACHS
(INTERNATIONAL)

Mr. Chairman and Members of the Joint Economic Committee,

It is a great pleasure for me to appear before this Committee once again, and especially so because the topic you have chosen to consider today—the cost of the Iraq War—is of great importance to our country. This hearing also is particularly timely, because next month will mark the beginning of the fifth year of that war. What was originally expected to be a short and cheap military exercise has become the second longest war in American history (Vietnam being the longest) and the second most expensive (World War II having been considerably more costly).

Now is a good time for a deeply divided nation to develop a better understanding of the costs of this war and to use that information—factoring in a variety of other national security considerations as well, of course—to determine whether these costs are still worth paying. And if they are considered worth paying, we need to consider how to cover the costs in a way that is fiscally responsible and that will put America's longer-term finances on a stronger footing.

To be sure, the decision on whether, and at what level, to continue the American military presence in Iraq is not primarily an economic one—nor should it be. It must depend heavily on a range of considerations that relate to the positive or negative consequences of changes in troop levels (or of the in-country mission of our troops) for US national security and for the future stability of Iraq and the Middle East. It must also factor in other important considerations such as whether political reconciliation and stabilization in Iraq are moving forward rapidly enough, and whether or not the continued loss of life and the injuries suffered by Americans are worth the outcomes we seek. Whatever the case, the Congress should use this period to consider—in as non-partisan a way as possible—how in the future this country can avoid the mistakes that have been made in the funding of this conflict.

LACK OF A CANDID NATIONAL DEBATE ON WAR COSTS

Democracies function best when policies are based on the informed consent of the governed. And here I emphasize the word informed. In most wars there is a tendency to underestimate the cost at the outset—in part because of wishful thinking that they will be short and cheap and in part because leaders often cannot immediately judge at the outset. That was certainly true in Civil War, World War I and the Vietnam War. But there was generally a very candid, open and robust debate in the Congress and among the American people about how to pay for a war once its costs became apparent—and in some cases even in anticipation of rising costs.

During this war there has been a surprising absence of vigorous public or Congressional debate over war costs and how to pay them. In large measure that is because this war represents only a small portion of American GDP—roughly 1 percent annually in direct budgetary terms—compared to World War II (around 40 percent at its peak) the Korean War (around 15 percent) and Vietnam (around 10 percent). So paying for the current war has not appeared to impose large visible costs on the American economy—although, as I shall later point out, that is a deceptive illusion.

Also, in other wars higher taxes, and elevated borrowing that pushed up interest rates, forced Americans to come to grips with the price of the war and political leaders to feel a greater sense of accountability about war costs. This war so far has seen taxes lowered and has had no impact on interest rates; for the better part of the war the Federal Reserve was cutting rates and long term bond rates were quite stable.

Moreover, the fact that this war has been financed almost entirely by using “emergency budget supplementals” that circumvent the normal budget process has meant that the executive branch and the Congress have skirted the issue of trade-offs in the budget. Thus a great deal of unnecessary and non-essential spending, including climbing numbers of “earmarks,” has occurred even as the cost of the war has increased—a development that never before occurred in American wartime history.

Normally when America goes to war, non-essential spending programs are reduced to make room in the budget for the higher costs of the war. Individual programs that benefit specific constituencies are sacrificed for the common good. FDR himself slashed or removed from the budget entirely many of his pet New Deal programs to pay for World War II. And taxes have never been cut during a major American war; for example, President Eisenhower adamantly resisted pressure from Senate Republicans for a tax cut during the Korean War.

PAYING FOR PAST WARS—COMPARED TO THIS ONE

One month after the attack on Pearl Harbor plunged America into World War II, President Roosevelt appeared before Congress to deliver his 1942 State of the Union Address. He was straightforward about the massive expenses the war would require. “War,” he said, “costs money. That means taxes and bonds and bonds and taxes. It means cutting luxuries and other non essentials.”

Higher taxes as well as cuts in luxuries and non-essential spending have been hallmarks of fiscal policy during every major war in which the U.S. has engaged—until now. The Iraq War has been paid for in a very different way. As noted above, it is the first war during which taxes have been cut and non-essential government spending has increased, and quite substantially at that. This has meant that the bond part of FDR’s equation (i.e. Federal borrowing) has been the sole source of funding for the costs of this War. This has made it easier for Americans to avoid coming to grips with the cost of the war, because no popular programs were cut and no taxes were levied—no economic inconvenience to them.

By the end of fiscal year 2008, the Iraq War will have cost \$608 billion in *direct* budgetary appropriations, plus another and far larger set of costs that are not directly in the budget. These have been described in a Joint Economic Committee Report entitled “War at Any Price?” released in November 2007, and in my friend and co-panelist Joe Stiglitz’s recent book entitled *The Three Trillion Dollar War*. This \$608 billion figure also does not include the interest that has been paid on funds previously borrowed to cover the costs of the war since 2003 (which itself must be borrowed). That brings total borrowing for the war close to \$650 billion dollars. [The direct costs of the War in Afghanistan for the U.S. come to around \$200 billion so far, although I do not include them in this analysis, even though many of the same considerations apply; but that war is dissimilar in one major respect, because it was and is a “war of necessity,” and there is far greater foreign engagement.]

The Iraq War differs from other major American wars of the past in yet one more respect as well: a substantial portion of the money borrowed to pay for it (roughly 40 percent) comes from abroad. That has been the case on only one other American War—the Revolution, when borrowing from France and the Netherlands proved critical to the success of the Continental Army.

I make these points of differentiation between this war and past wars because it is important to understand the unique character of the funding of this war and to put it in historical perspective. The methods by which American wars have been paid for since 1776 are described in greater detail in a book I have written recently called *The Price of Liberty: Paying for Americas Wars from the Revolution to the War on Terror*. There is merit in studying how presidents and Congresses have paid for wars in the past as we attempt to put the policies used to pay for this war in historical context—and seek to do a better job in the future.

ABSENCE OF SHARED SACRIFICE

There is another point of history worth emphasizing: war financing is not simply about money. Clearly wars, as FDR emphasized, cost a lot of money. But throughout history national leaders also have recognized the importance of conducting war financing in ways that connect Americans at home to the armed forces abroad, demonstrating that as American forces are making sacrifices on the battlefield—and many thousands of them are making major sacrifices every single day during this war—the American people are making sacrifices in their behalf at home. Woodrow Wilson’s Treasury Secretary, William Gibbs McAdoo, stated during the early months of World War I that “a man who could not serve in the trenches of France might never the less serve in the financial trenches at home” by buying war bonds (called Liberty Bonds). He coined the term “capitalizing patriotism” to emphasize that patriotism required all Americans to make financial sacrifices to support the nation’s troops when they were at war, putting their lives at risk. He did not see this as a partisan measure—but as one of support for American troops.

FDR was even more blunt, emphasizing the need for shared sacrifice. “Battles are not won,” he stated, “by soldiers or sailors who think first of their own safety. And wars are not won by people who are concerned primarily with their own comfort, their own convenience and their own pocketbooks.” Yet the American people as a whole have been asked to give up nothing for this war—they have been treated to tax cuts and increases in government programs of various sorts. The only sacrifices are those being made by the troops and their families.

I believe that in the current environment Americans would willingly support enactment of a “tax surcharge for veterans” levied on citizens in the top income bracket. The tax would not be to pay for the war itself—because so many Americans either oppose this war or find it futile and therefore would not, at this point, support

a tax that appeared in any way to perpetuate an American presence in Iraq. The tax revenues would go into a fund dedicated *specifically* to ensure that wounded and disabled veterans receive the highest quality care for as long as they need it, which for many will be their entire lifetimes.

The cost of treating the many thousands of returning men and women who receive various kinds of serious wounds, among which are the much discussed traumatic brain injury (TBI), or are victims of post-traumatic stress disorder (PTSD), will be enormous. These wounds and conditions also take a heavy toll on the families of victims. I believe that even Americans who are bitterly opposed to this war would support such a tax to ensure the provision of lifelong disability and medical care for these veterans; estimates for such costs range into the hundreds of billions of dollars over many decades, especially since disabilities often manifest themselves years after veterans have come home from the battle field.

BORROWING FOR THE WAR

I have been asked by the Committee to focus a portion of my remarks on the issue of borrowing for this war—which, sadly, receives little public attention. In all major wars in our past (with the exception of the first Iraq War when President George H.W. Bush, Secretary James Baker and Secretary Nicholas Brady organized massive and direct financial support from America's friends and allies to pay the lion's share of the war), a significant amount of additional Federal borrowing has occurred. This is because administrations and Congresses did not want to place the entire burden of the war cost on the current generation of tax payers and sought to spread out the cost over time. Such a policy was prudent, because the Nation could not absorb tax increases large enough to pay the full cost of the war during the course of the conflict without crippling the economy. But they also believed that taxes should pay some portion of the cost, i.e. that the entire cost burden should not be shifted to future generations of taxpayers through borrowing.

So before, or in the early stages of, every major war in the past there was an active debate in the Congress and the Executive branch—and in parallel among the American public—over what proportion of the war should be paid for by taxes and what proportion by borrowing. This was true in the Civil War, in which Secretary Salmon P. Chase informed President Lincoln and the Congress that he proposed to divide up the incremental costs of the war on the basis of 25 percent taxes and 75 percent borrowing; Secretary McAdoo set and nearly achieved the goal of paying for one third of World War I through taxes; and Secretary Henry Morgenthau set a goal of paying half the cost of World War II through taxes, although in the final analysis he only got to 45 percent (a nonetheless impressive feat); President Harry S. Truman aimed to pay almost all of the Korean War through taxes, although he fell short.

The underlying point is that during all of these conflicts there was a vigorous national debate on how best to pay the bill—how much current taxpayers should pay and how much should be borrowed and therefore shouldered by future taxpayers through debt service. Usually there were frequent and well attended Congressional hearings on the matter. Sadly, we haven't had that kind of debate regarding this war.

The notion that national security can be paid for “on the cheap”—using borrowed funds alone—is a dangerous one, especially for a nation that is likely to be engaged for several decades in what the Pentagon refers to as the Long War on Terrorism. If that is the case, and there is good reason to believe it is, Americans should be candidly told the costs and exactly how the money will be used. The American public should understand the long term resource requirements not only for the military but also for national intelligence, improved diplomacy, increased foreign assistance, augmented homeland defense, and better support for police, firefighters and public health authorities. The last of these will also be important if the Nation is hit by a pandemic—for which all authorities acknowledge we are grossly ill-prepared.

Funding this war on terror or any other war without presenting Americans with a comprehensive package that relates the various components to the overall goal does not enable the electorate to understand the full costs or consider the most appropriate way of paying them. Once they understand these, they will be better able to decide whether they wish to give up other programs to make room in the budget to cover some of the costs, or pay higher taxes, or borrow more or simply not fund some of these national security items at all.

A robust debate on the topic of war spending (for this or for any other war) and how to allocate the burden between current and future taxpayers is an unambiguously good idea for our democracy, in part because in debating taxes and borrowing for a war, Americans can also debate the wisdom of the *war itself* when it is—as

the Iraq War is—a war of choice. It also brings into play the issue of budgetary priorities and tradeoffs. In debating whether to engage in a “war of choice,” Americans should be cognizant of the important government programs that could be paid for with the resources that would otherwise be devoted to paying for that war. Dwight Eisenhower—certainly no pacifist but a former Supreme Allied Commander—recognized that war diverts resources from other purposes and therefore a decision to enter one should be thoughtfully and carefully taken. He put the tradeoffs as follows: “Every gun that is made, every warship launched, every rocket fired, signifies in the final sense a theft from those who hunger and are not fed, those who are cold and are not clothed.”

The November JEC Report points out that the money spent on the Iraq War during one single day could enroll an additional 58,000 kids in Head Start, make college more affordable for 160,000 low-income students through Pell Grants, hire nearly 11,000 border patrol agents, or put an additional 14,000 police officers on our streets. The large sums so far spent also could have helped to put Social Security and Medicare on a more sustainable basis. And a small fraction of them could have helped to eradicate or contain diseases that devastate the lives of millions in Africa and Asia. But we have had no such debate over what economists call the “opportunity costs” of war spending and thus no such tradeoffs were considered.

The broader implications of paying for the war entirely by increasing the Federal debt are inter-generational. Borrowing to pay the full cost of the war passes the cost wholly to future taxpayers. The JEC Report calculates that by the end of fiscal year 2008 the additional Federal debt resulting from the war will total \$660 billion—and that this figure will grow to \$1.7 trillion by the end of 2017. It further points out that within the coming year the debt service cost for Iraq War spending alone will exceed Federal spending for education and health research.

Again, the point is that there are major tradeoffs here. Is the continued cost of the Iraq War worth the commitment of resources that potentially could be used otherwise for national social programs or to shore up homeland security or for other purposes? Or, if we do wish to pursue the war at current troop levels—or bring troop levels down to a Korean War-like presence as suggested by Secretary Gates, or engage in a sharp drawdown as recommended by the House Plan—are we willing to give up other programs that are now being funded to pay the costs? These questions cannot be decided here, but what can be agreed on is that a vigorous debate should be held about national priorities and tradeoffs for the use of Federal budgetary resources before any new decisions are taken about whether to undertake a war of choice. It may well be that we will undertake such a war after all the considerations are aired, but at least then Americans will understand the resource implications of the decision, and recognize that certain things must be given up to pay the price of that war. And even in a war of necessity, resource decisions need to be taken in the context of a transparent dialog about the optimum way to pay the bill.

There is also the issue of the degree to which borrowing for the war draws money away from productive investment. (Of course, it is worth noting that higher taxes would do that too, but I will focus in the borrowing side of the equation here.) It is difficult to know precisely the degree to which money not borrowed by the Federal Government to pay for the war would have gone into productive private sector investment as opposed to one-shot consumption. Presumably less Federal borrowing for the war would have lowered the cost of capital and thus encouraged some additional private sector investment—although there is little evidence in recent years that the cost of capital was an inhibiting factor in capital investment in the United States. So it is difficult to measure with any precision how much private investment was *actually* displaced by Federal borrowing for the war. Conceivably, the major impact of less Federal borrowing and thus a lower cost of capital could simply have been to encourage even more consumer borrowing (which was already enormous)—and that would have contributed little to national productivity.

More troubling is that borrowing for war, or for any other current purpose for that matter, will impose a large debt burden on future generations at a time when Federal borrowing in the future will climb dramatically to pay for the skyrocketing costs of social security and health care for the aged and the poor. These vital but costly programs will put enormous stress on the Federal budget in coming decades, causing an additional increase in borrowing and/or taxes—or cuts in other programs. Placing added burdens on Federal finances by accumulating additional war debt now simply makes the management of this problem more difficult. In his celebrated Farewell Address, President Washington enjoined Congress and his fellow citizens to “discharge the debts which unavoidable wars may have occasioned, not ungenerously throwing upon posterity the burdens we ourselves ought to bear.”

But it is not simply war debt that is the problem. Our analysts at Goldman Sachs anticipate that overall Federal borrowing over the next 10 years will amount to over three trillion dollars—so there are other fiscal issues at play here besides the war. There has been a general absence of fiscal discipline in Washington for nearly a decade. War costs would not have added to Federal debt to the degree that they have if non-essential programs had been cut and earmarking been better contained—or if taxes had been raised to pay for even a portion of the added costs of America's military efforts in Iraq.

A century and a half after President Washington's Farewell Address, President Eisenhower gave his own Farewell Address in which he counseled Americans "to avoid the impulse to live only for today, plundering for our own ease and convenience the precious resources of tomorrow" and to avoid "mortgaging the material assets of our grandchildren. . . ." And yet we seem to have heeded neither of these calls in recent years. That is not the fault of the war but of a less than rigorous process of budgeting and resource allocation in Washington—and a seeming indifference to that by Americans in general.

Finally, as noted above, because roughly 40 percent of all Treasury securities are sold abroad, that portion of war borrowing is financed by China, Japan, the Middle East and Western Europe. Thus, Americans are accumulating large interest and debt repayment obligations to a number of other nations because of our budget deficits. After the US had accumulated debts to France and the Netherlands during the Revolution, Treasury Secretary Hamilton and the Federalists, followed by the Jeffersonian Republicans, insisted that they be paid down promptly to preserve American creditworthiness.

That will not happen this time; America's debt to other nations and its continued dependence of their capital will climb dramatically in coming years. To be sure, this country can sustain large foreign obligations today far better than the America of the late 18th century, but growing amounts could still present problems. It is worth noting here that while there appears to be consternation among many Americans about this nation's growing dependence on foreign capital, there is little apparent recognition that we Americans have it in our power to reduce this dependence. We can do so by saving more, running government surpluses, curbing the rate of growth of consumption financed by borrowing, and using less imported oil. So far we are moving in the wrong direction on all four counts (although consumer borrowing now appears to be slowing) and thus will depend increasingly on foreign capital inflows.

It is also worth noting that this dependence constitutes a security vulnerability. Were there to be another catastrophic terrorist attack in the near term, at a time when foreign confidence in American finances is already low due to the crisis in our credit markets and to the expectation of rising Federal deficits in coming years, the massive sums of foreign funds that we count on—roughly \$2–3 billion net every working day—could decline precipitously. That would sharply slow an already weak U.S. economy that would have been weakened further by the attack. It is worth recalling that in September 2001 the Federal Government had been running a budget surplus for 4 years and the Nation was only half as dependent on foreign capital as it is today—and we had no credit crisis. At that time foreign capital inflows slowed for a while but resumed quickly, and the dollar proved remarkably resilient. In current circumstances a drop on foreign flows could last longer, push up interest rates due to a fall in available capital, and cause the dollar to plunge.

CONCLUSIONS

Several lessons can be drawn from the way this war has been paid for:

(1) *Avoid paying for wars by supplementals.* The process circumvents the need to make budgetary tradeoffs, set resource priorities or sufficiently scrutinize how the funds are being used. Even during the very poorly and non-transparently financed Vietnam War, emergency supplementals were used to finance only about a quarter of the costs. Democratic leaders in the Senate insisted that President Johnson and Defense Secretary McNamara stop using this technique as it was undermining support for their policies in the Congress.

(2) *Cut way back on earmarks, especially during war.* During wars, such programs divert budgetary funds from higher national priorities. Moreover, they create the notion that America can pay for its national security with no sacrifices—and indeed new programs not on the national priority list can be funded with no heed being paid to the need for even slight national sacrifices.

(3) *Exercise more rigorous Congressional oversight over war spending.* It is possible that even if the party in control of the White House and the party in control of Congress are the same, there can be rigorous oversight of spending to curb waste. The Truman Commission (formally known as the Special Senate Committee to In-

investigate the National Defense Program) reportedly saved the American taxpayer an estimated \$15 billion during World War II. As historian David McCullough wrote, “Unquestionably [Truman’s] relentless watchdog role . . . greatly increased public confidence in how the war was being run.” In the future the demands of the country for greater attention to social programs at home will grow, so the military will need to demonstrate that it is using its funds with maximum efficiency and on essential requirements.

(4) *Recognize the advantage of coalition diplomacy in paying for a war.* The first Iraq War demonstrated the military and the financial benefits of forging a strong international coalition. That coalition provided additional fighting forces, greater legitimacy for the effort and foreign funds that helped to relieve the burden on the American taxpayer.

(5) *Take a long-term look at national finances.* If the US allows its finances to deteriorate in coming years there will be serious consequences for the nation’s security and its ability to address growing social needs such as education and health care—as well as to provide for the requirements of what will soon become a rapidly retiring group of 76 million baby boomers. A new administration and a new Congress will need to examine closely the future resource requirements of this nation—including the obligations we are accruing to retirees through Social Security and Medicare—and the likely budgetary resources that will be available to meet them. Congress and the president will need to find ways to ensure that projected outlays and resource availability converge as opposed to diverge—which will be the case absent changes in anticipated spending and revenue trajectories. It is difficult to see how America’s growing needs can be met without tax increases, and if they are required, they should be structured in ways that boost growth and savings and are consistent with the longstanding principle on which the income tax was based starting during the Civil War—fairness and progressivity.

I thank the Committee for giving me the opportunity to testify at this hearing and welcome your questions.

PREPARED STATEMENT OF DR. RAND BEERS, PRESIDENT, NATIONAL SECURITY NETWORK, WASHINGTON, DC

Thank you, Chairman Schumer, Vice Chair Maloney, Ranking Member Brownback, Ranking Member Saxton and other Distinguished Members of the Committee, for giving me the honor of testifying today on the additional costs to our national security as a result of the War in Iraq.

The cost of the war in Iraq in terms of lives and treasure has been tremendous: nearly 4,000 American troops have been killed; 30,000 American servicemen and women have been wounded; and according to a report released by this committee, the American economy has already incurred \$1.3 trillion dollars in costs—a sobering \$16,500 per family of four.

What has that spending bought us? Diminishing respect for America around the globe; the reconstitution of our terrorist and extremist enemies; and the over-extension of our military and diplomatic capacity. In Pakistan and Afghanistan Al Qaeda and the Taliban have regained their strength and now operate with impunity. In the broader Middle East, Iran has been let out of its strategic box and now wields greater power. The war has severely overstretched and depleted our military, leaving us vulnerable and unable to respond effectively elsewhere. Freedom and democracy around the world have slid backwards, as American moral authority has been tarnished and our ability to mobilize others to meet global challenges and the needs of our citizens has been undermined.

AFGHANISTAN, PAKISTAN AND TERRORISM

The most direct costs to America’s security have come in the fight against Al Qaeda. The war has empowered Al Qaeda and undermined American interests. It has acted as a distraction, causing the United States to divert assets that were necessary to fight Al Qaeda in Afghanistan and Pakistan and put that time and energy into Iraq—a country that had no operational relationship with Al Qaeda. Thanks to this Administration’s strategic misallocation of resources, today Al Qaeda’s central leadership has established a new safe haven in northwest Pakistan even as Afghanistan continues to deteriorate.

The National Intelligence Estimate, released this past summer on The Terrorist Threat to the U.S. Homeland, concluded that the greatest threat to the American homeland emanates from Al Qaeda’s “central leadership,” which is based in the tribal areas of northwest Pakistan. The NIE also concluded that, thanks to its new safe

haven the organization has increased its capacity to directly attack the United States.

Al Qaeda is and will remain the most serious terrorist threat to the Homeland, as its central leadership continues to plan high-impact plots, while pushing others in extremist Sunni communities to mimic its efforts and to supplement its capabilities. We assess the group has protected or regenerated key elements of its Homeland attack capability, including: a safe haven in the Pakistan federally Administered Tribal Areas (FATA), operational lieutenants, and its top leadership.”

The security situation in Afghanistan also continues to deteriorate as the Administration focuses its energy on Iraq. The Chairman of the Joint Chiefs, Admiral Mullen, admitted that the main focus of U.S. efforts is on Iraq: “In Afghanistan, we do what we can; in Iraq, we do what we must.” As a result, the Taliban has returned to lead a growing insurgency against the Afghan government and U.S. and NATO forces. The security situation has grown worse every year since late 2002 when we were preparing to invade Iraq—a concern which I raised while still in government in the months before the invasion to no avail. 2007 was the deadliest on record for U.S. forces in Afghanistan, with fatalities four times higher than in 2004. The number of suicide bombings has also increased dramatically and civilian casualties have also increased. The Taliban has regained strength and confidence and operates with impunity in large parts of the country. Though unable to hold territory, the Taliban remain a force for intimidation and instability, increasingly operating in battalion-sized units of 400 or more. And despite the near-total eradication of poppy during the Taliban’s time, opium production has again become a routine part of life in rural Afghanistan—providing more than 90 percent of the world’s supply while helping corrupt the government and fund terrorism and the insurgency.

In the last year, we have also seen our Iraq preoccupation contribute to Pakistan’s political instability. While we focused on the “surge” in early 2007, we ignored a brewing crisis in Pakistan—a country that is not only at the heart of our struggle against terrorism but also happens to be a nuclear power. We were slow to realize that our strategy of using Musharraf to keep Al Qaeda at bay was failing, and that instead his autocratic rule was creating instability in Pakistan proper. By conducting a Musharraf policy, instead of a Pakistan policy we alienated the people of Pakistan. The hope that Benazir Bhutto would bridge the divide collapsed with her assassination. While the election last week was a welcome step forward, the attendant instability and the questions about how to deal with Al Qaeda and Taliban elements remain serious strategic issues—issues that that this Administration could have addressed more carefully and thoughtfully if its efforts weren’t so heavily focused on Iraq.

Meanwhile, the conflict in Iraq has also given terrorists a new tool for recruitment, fundraising, training and indoctrination of terrorists. Prior to 2003, Al Qaeda had no formal presence on the ground in Iraq. But, as a result of the U.S. invasion, Iraq has become a magnet for foreign fighters—many of whom pledge allegiance to Al Qaeda. In 2006, the nation’s 16 intelligence agencies agreed that the war has created a “cause celebre” for terrorists around the world. And the July 2007 National Intelligence Estimate concluded that “its association with Al Qaeda in Iraq helps al Qaeda to energize the broader Sunni extremist community, raise resources, and to recruit and indoctrinate operatives, including for Homeland attacks.”

Thus, it is no surprise that 84 percent of foreign policy experts recently told an independent bipartisan survey by the Center for American Progress and Foreign Policy Magazine that they do not think the United States is winning the war on terror.

IRAN AND THE MIDDLE EAST

The War in Iraq has also had grave consequences for our position in the Middle East. Iran has been one of the greatest beneficiaries of the Iraq War. For years, American policy in the Persian Gulf was based on playing Iran and Iraq off each other, thus containing both. The Bush Administration’s catastrophic Iraq policy tipped the balance, allowing Iran to step into the power vacuum inside Iraq and increase its influence in the region. Iran is now an ascendant power, which uses its influence to oppose American interests.

In Iraq, Iran’s influence has increased tremendously. Many of the Shi’a political leaders, whom the United States has empowered, spent years in exile in Iran during Saddam Hussein’s rule. They maintain close political ties with Tehran. To take just one example, the Islamic Supreme Council of Iraq (ISCI), which represents one of the two largest Shi’a political movements in Iraq, was originally formed in Iran. In

addition, there is little doubt that Iran has contributed weapons and tactical guidance to some of the insurgent groups that have attacked American forces.

Meanwhile, Iran also increased its influence throughout the Middle East. While Iran spent the 1990s and early parts of this decade concerned primarily with the security of its own borders against the threat of Saddam Hussein and the Taliban, today it finds itself unfettered. This has left it free to pursue a more aggressive and anti-U.S. strategy throughout the region through the support for extremist groups, most notably Hezbollah and Hamas. As a result, it is more difficult to achieve any progress in ending the Arab-Israeli conflict or stabilizing Lebanon.

The Iraq War has also improved Iran's position vis-a-vis its uranium enrichment program. The fact that the United States went to war based on the threat of weapons of mass destruction, only to find none, undermined our global authority on this issue, making it more difficult to bring allies together to oppose Iran's uranium enrichment program. Moreover, our large military presence in Iraq today makes any military threats against Iran's nuclear facilities less credible. Limited attack capabilities reduce the likelihood of success against difficult known targets and the uncertainty of having identified all the targets only complicates the situation. With no assurance of success, an attack will invite an asymmetric insurgent/terrorist response against our forces in Iraq as well as attacks in Lebanon and Israel.

Thus, on just about every measure Iran finds itself more powerful today than it did 5 years ago—before the start of the war.

THE STRAINS ON OUR MILITARY

The Iraq war has severely overstretched our ground forces and has taken a tremendous toll on the Army, the Marines and National Guard. Not since Vietnam have our ground forces been in such a state.

Of the Army's more than 40 combat brigades, all but the First Brigade of the Second Infantry Division, which is permanently based in South Korea, have served at least one tour, often longer than the 12 month "limit." More than three fourths have served more than one tour in Iraq and Afghanistan. The Army has been continually forced to violate its own dwell-time policy, which calls for troops to receive 24 months for recuperation and retraining for every 12 months deployed. In many cases soldiers have been sent back to Iraq after being home only 9 months.

The pace of deployments is severely affecting combat readiness. Two-thirds of the Army—virtually all of the active Army's combat brigades not currently deployed to Iraq or Afghanistan—are rated "not combat ready." In fact General Casey, Chief of Staff of the Army, told the Senate Armed Services Committee on Tuesday that, "The cumulative effects of the last six-plus years at war have left our army out of balance, consumed by the current fight and unable to do the things we know we need to do to properly sustain our all-volunteer force and restore our flexibility for an uncertain future."

The war is also placing great strain on the Marine Corps. The Marines were charged with pacifying Anbar province and signs of severe strain are appearing in America's 911 force. As the Marine Corps Commandant James Conway has noted, as reported in the Los Angeles Times, "back-to-back deployments were stretching the Marine Corps thin, giving it little or no time to train young enlisted personnel and officers for amphibious assaults, cold-weather warfare and other 'core competencies.'

Just as worrisome is the state of our Army National Guard. The National Guard and Reserve are already suffering from severe shortages of equipment and available combat personnel. The National Guard has become a shell of its former self and in many states around the country the Guard would struggle to respond to a natural or man-made disaster—just as the Kansas National Guard struggled to respond to the severe tornados last year.

WORKING WITH OUR ALLIES,

The Iraq War has also caused the world's respect for America—one of the fundamental sources of our strength—to evaporate, even among our closest allies. The latest Pew Global Attitudes survey from June 2007 found some disturbing trends regarding how America is viewed in the world.

In Germany, one of our most strategically important European allies, only 30 percent of the people have a positive view of the United States, down from 78 percent in 2000. In Turkey, a Muslim democracy and NATO ally, approval ratings of the United States have dropped from 52 percent to a dismal 9 percent. In Britain—our partner in Iraq and most reliable ally—favorability ratings have dropped from 83 percent in 2000 to only 51 percent last year.

This is not just a question of wanting other countries to like us. It is a question of being able to mobilize others around our ideas and interests. It is a question of having the moral authority to press others not to torture political prisoners. It goes to the very questions of America's ability to lead. These are among the most significant strategic costs associated with the unpopularity that has come from the Iraq War.

Take for example the question of more NATO troops for Afghanistan. We need a greater military commitment from the Alliance, to help stabilize Afghanistan and prevent the reemergence of a terrorist haven—one of our core national interests. Yet, public opinion in Europe has conflated the necessary war in Afghanistan with the unnecessary war in Iraq. The whole venture is now so unpopular, and the domestic political cost of providing more troops for Afghanistan has become so high, that it has created a major impediment in getting the support we need for the mission. Meanwhile, in Turkey, the United States' unpopularity has made it much more difficult for the current government to show restraint in pursuing the PKK into Iraq.

For months the Turkish government beseeched the United States to do more, but its calls went unanswered as we were preoccupied in Baghdad and Anbar. As a result, America's popularity dropped and domestic pressure to respond grew ever stronger. Now, we are faced with an even more dangerous situation in Northern Iraq. Finally, in countries across the Muslim world from Pakistan to Morocco our image is so tainted that local politicians who work closely with the United States are viewed with suspicion or simply discredited, making it far more difficult for us to win the ideological struggle with Al Qaeda.

These are only some concrete examples of the very real strategic costs that we face because of our damaged image around the world.

THE QUESTION OF STRATEGIC FOCUS

Finally, there is the question of strategic focus. Iraq has occupied the majority of our political leadership's attention and a huge proportion of the national security budget. As long as our troops remain there in large numbers this will not change, nor should it. But the question is: should our troops be there or should our focus be elsewhere?

As a government servant, who spent thirty-five years working on national security issues, I understand that we can never address all of the serious national security concerns that we face at once. Tradeoffs need to be made on time and resources, and the day is never long enough. But the reality is that as long as this government's efforts are so strongly focused on Iraq, other priorities will not get the attention they deserve, other national security issues will find funds limited; and, when situations around the world explode, we will find ourselves surprised and trying to make up time.

To understand this dynamic one need only take a look at some of the most recent serious international incidents: Kosovo's declaration of independence and the burning of the American embassy; the ongoing crises in Pakistan and Kenya; the increasing tensions between Turkey and the PKK in Northern Iraq and the looming friction with a muscle-flexing Russia. In all of these cases, the United States was caught off guard and had to scramble for the right policy, instead of seeing the crisis coming in advance and acting to mitigate the danger. This is not to say that our people on the ground did not see the development building, but that those in Washington are so absorbed with Iraq that they did not have the capacity to respond effectively. As long as we are in Iraq with such large numbers of troops, we will continue to be in a reactive posture to events in the rest of the world. Other threats and opportunities such as an increasingly powerful China, Russia's turn away from democracy, instability in Africa or growing anti-Americanism in Latin America will be neglected to the detriment of our security.

CONCLUSION

In conclusion, the Iraq war has not only made the world a more dangerous place, but has distracted the United States from pivotal foreign policy priorities, harmed America's prestige and international credibility, and hurt our ability to respond to emerging challenges.

The world is a complex place full of threats and dangers, and the United States has many interests and values to protect. By its strategic misstep into an ill-conceived war in Iraq, this Administration has found itself unable to handle more significant threats elsewhere—and that is costing us abroad and at home.

For years now the debate in this country has been about whether the situation in Iraq is getting better or worse, whether this benchmark or that benchmark has

been met, or whether or not violence in Iraq is down by this percent or that percent. I fear that these arguments miss a central point. It is not a question of whether or not the surge is working—the surge is a short-term security band-aid to a longer-term political problem.

The question we need to be asking is one of opportunity costs and strategic costs to the United States. We're seeing a new debate emerge—one where we look at the financial costs of Iraq and their impact on U.S. priorities. I want to make sure Americans fully understand the global consequences of where we are now. The strategic sinkhole in Iraq means that our priorities at home and around the world are not being met. It is difficult to see how remaining in Iraq will offer this country the opportunity to move forward on any of these concerns. And it is equally difficult for me to understand how remaining in Iraq without a disengagement strategy will break the culture of dependency and ensure an Iraqi government and security force more committed to Iraq's future than we are.

Thank you for the opportunity to present these ideas, and thank you to the Committee for highlighting such an important topic.

PREPARED STATEMENT OF SCOTT WALLSTEN, PH.D., VICE PRESIDENT FOR RESEARCH AND SENIOR FELLOW, I-GROWTHGLOBAL, SENIOR FELLOW, GEORGETOWN CENTER FOR BUSINESS & PUBLIC POLICY

Mr. Chairman and members of the Committee, thank you for inviting me to testify today on the costs of the war.

I estimate that the expected net present value of the total direct costs of the war are approximately \$1 trillion to the U.S., and closer to \$2 trillion globally.

The real direct economic costs of the war include not only expenditures from the U.S. budget allocated for the war, but also injuries, lives lost, and lost productivity from reservists who cannot do their civilian jobs because they have been called up for service.

My coauthor, Katrina Kosec, and I began this project in 2005 and have updated our numbers periodically since then. (I submitted the original 2005 paper, which explains our methodology in detail, to the Committee). We have found that the total direct economic costs of the war at any given point in time tend to exceed budget appropriations by about 20–25 percent.

As wealthy as our nation is, our resources are limited and must be spent carefully. Other areas of policy attempt to explicitly take into consideration the full economic costs and benefits of government actions. President Ronald Reagan signed an executive order requiring certain agencies to conduct a cost-benefit analysis for any proposed major regulation and to adopt it “only upon a reasoned determination that the benefits of the regulation justify its costs.”

President Bill Clinton renewed this order, as did the current president.

And now cost-benefit analysis has become an important and accepted, though certainly not the only, tool for evaluating many proposed policies.

But this approach has yet to be explicitly incorporated into decisions regarding defense and security.

Admittedly, the current tools we have for evaluating costs and benefits are not perfectly suited for evaluating the costs of war since they were developed for use in a different setting. The tools are blunt and imprecise, meaning that the cost estimates all of us are presenting today are measured with a great deal of error. That's why Katrina and I included in our paper ranges of estimates and also built an online estimator that allows people to change underlying assumptions to see how those affect the costs.

Nevertheless, this type of analysis can provide valuable information to help inform policymakers as to the best course of action going forward.

In addition, we should apply these tools to other, related, areas, like homeland security. The Office of Management and Budget estimated last year that major homeland security regulations imposed a cost of \$2.2 to \$4.1 billion dollars a year on the economy.¹ But those rules were passed with no estimates of their expected benefits. Those costs may sound small compared to the costs of the war, but they are not. The net present value of those costs is close to \$100 billion.

Estimating the benefits of homeland security measures or of military operations is difficult because, as OMB acknowledges, they depend on the probability and severity of outcomes like terrorist attacks, which are difficult to quantify.

¹White House Office of Management and Budget. 2007. “Draft 2007 Report to Congress on the Costs and Benefits of Federal Regulations.” Washington, DC.

Just because expected costs and benefits are difficult to estimate doesn't mean they don't exist. And if you can't estimate the benefits, you should still follow through on a policy only if you have good reason to believe those benefits exceed the costs.

Professor William Nordhaus of Yale was the first to do this exercise for a war in Iraq, and he did it before the war when it could have helped inform policy.² He acknowledged that there would be some benefits of a war. The world would be better off if Saddam Hussein were not in power. But Professor Nordhaus meticulously estimated ranges of the likely costs under different scenarios and concluded that a war in Iraq could cost between \$100 billion and \$2 trillion. And he further qualified the results by noting factors that he did not include, such as costs to other countries or, as he put it, "fallout that comes from worldwide reaction. . . against perceived American disregard for the lives and property of others."

The point, aside from noting that Professor Nordhaus was far more insightful than any of us by doing this exercise in advance, is that even under tremendous uncertainty, these tools can provide us with useful information to help inform decisions. If Congress and the public had seriously considered Professor Nordhaus's projected cost estimates, would we still have gone to war? Perhaps. Some might have still believed it was worthwhile. But perhaps not.

We can't do anything about the costs we have already incurred. Those resources are gone. But we do have some control over what happens next. The lesson, I believe, is that policymakers can use the tools of cost benefit analysis to help evaluate whether proposals regarding what to do next in Iraq are likely to yield net benefits to us and to the world.

And hopefully that additional information will lead to better decisions.

Thank you.

²Nordhaus, William D. 2002. "The Economic Consequences of a War With Iraq." NBER Working Paper. Cambridge, MA.



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AEI-BROOKINGS JOINT CENTER FOR REGULATORY STUDIES

The Economic Costs of the War in Iraq

Scott Wallsten and Katrina Kosec*

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Executive Summary

Government policies are routinely subjected to rigorous cost analyses. Yet one of today's most controversial and expensive policies—the ongoing war in Iraq—has not been. The \$212 billion allocated by the U.S. Treasury has been widely reported. But the real, direct economic costs include more than budgetary allocations. Other costs include lives lost, injuries, and lost civilian productivity of National Guard and Reserve troops mobilized for the conflict. The conflict, however, also has generated cost savings, especially in terms of resources no longer being used to enforce UN sanctions and people no longer being killed by Saddam Hussein's regime.

In this paper we monetize these direct costs and avoided costs of the war in Iraq, both to-date and the total expected net present value of costs through 2015. Our estimates are imprecise. The data are not of high quality and every calculation requires a number of assumptions. In addition, we do not calculate indirect effects of the conflict, such as its impact on oil prices or other macroeconomic impacts, or certain intangibles, like the benefits of a stable democratically elected government in Iraq, should one emerge. Nonetheless, our best estimates suggests that the direct economic costs to the U.S. through August 2005 are about \$255 billion, about \$40 billion to coalition partners, and \$134 billion to Iraq. These estimates suggest a global cost to date of about \$428 billion. The avoided costs, meanwhile, are about \$116 billion. We estimate that the expected total net present value of the direct costs through 2015 could be \$604 billion to the U.S., \$95 billion to coalition partners, and \$306 billion to Iraq, suggesting a global total expected net present value of about \$1 trillion. The net present value of total avoided costs, meanwhile, could be about \$429 billion.



The Economic Costs of the War in Iraq

Scott Wallsten and Katrina Kosec

1. Introduction

Government policies are routinely subjected to rigorous cost analyses. These analyses are difficult, imprecise given uncertainty about the future, and controversial. Yet they are widely recognized as important tools for deciding how best to allocate society's limited resources. Despite the widespread use of cost-benefit analyses in governmental policy analysis, its tools have not been rigorously applied to one of today's most controversial public policy issues: the U.S. involvement in Iraq. U.S. budgetary allocations are widely reported, but that amount does not reflect the true economic cost of the conflict. This paper takes a small step in correcting this omission by attempting to calculate the direct costs of the conflict.

Several caveats regarding this analysis are in order. First, our estimates are necessarily imprecise. The available data are not of high quality, each calculation requires several assumptions, and the tools of cost benefit analysis are themselves controversial.¹ While we carefully note our sources and explain our assumptions in detail, we recognize that these estimates contain a great deal of error. Second, we estimate only the direct impacts that we can monetize, not indirect macroeconomic impacts.² Third, we do not calculate intangibles, such as benefits of a stable, democratic government in Iraq should one emerge, or the impact of the war on other U.S. interests and international relations. Finally, one of the biggest impacts may be how the war has affected the probability of terrorist attacks. Unfortunately, experts do not agree on whether the war has increased or decreased this probability, let alone by how much.

The implication of these caveats is that our analysis *cannot* determine whether the benefits of the war exceed the costs. The analysis simply applies tools to this problem to begin to assess the war's actual economic costs and, we hope, contribute in some small way to providing an analytical framework for the policy debate.

Recognizing the inherent imprecision, we calculate high, medium, and low estimates for costs and avoided costs, and round to the nearest billion. Table 1 presents our medium estimates

¹ See Hahn (2005) for a discussion on this controversy and arguments supporting the uses of cost-benefit analysis.

² These effects can be large. Hassett (2005) noted that bad news about Iraq could depress the economy even in the face of positive economic reports.



while Figure 1 shows the full range of estimates. Table 2 presents the estimate ranges in detail. Using our medium estimates, we conclude that the direct measured economic cost to the U.S. from March 2003 through August 2005, including incremental military and other government resources allocated to Iraq, the opportunity cost of National Guard troops' lost civilian productivity, lives lost, the costs of treating wounded soldiers and other costs of their injuries to be \$255 billion. The conflict has cost coalition partners an additional \$40 billion. Costs to Iraq itself are more difficult to calculate. Still, under assumptions described below, we estimate that the costs to Iraq are about \$134 billion. Thus, the gross global direct costs of the conflict to date appear to be \$428 billion.

Table 1
Costs of the War in Iraq
Billions of 2005 dollars
 (medium estimate)

	Mar 2003 - Aug 2005	Sept 2005 - Dec 2015	Total March 2003 - 2015
Costs			
United States	255	349	603
Non-U.S. Coalition	40	55	95
Iraq	134	173	306
TOTAL	428	576	1005
Avoided Costs			
United States	32	85	117
Iraq	85	228	313
TOTAL	116	313	429

Because the conflict is not over, it is useful to estimate the total expected net present value of the conflict into the future. Using projections from the Congressional Budget Office regarding budget allocation and troops deployed in Iraq, we estimate the net present value of the conflict from 2003 through 2015 to be \$603 billion to the U.S., \$95 billion to coalition partners, and \$306 billion to Iraq, for a total expected net present value of \$1 trillion (with the estimate ranging from a low of \$820 billion to a high of \$1.2 trillion).

The main avoided costs of the war include no longer enforcing U.N. sanctions such as the "no-fly zone" in northern and southern Iraq and people no longer being murdered by Saddam



Hussein's regime. We estimate the value of the first to be \$32 billion and the second \$85 billion to date. The net present value of these avoided costs through 2015 could be \$429 billion.

Another possible impact of the conflict is a change in the probability of future major terrorist attacks. Unfortunately, experts do not agree on whether the war has increased or decreased this probability. Clearly, whether the direct benefits of the war exceed the costs ultimately relies at least in part on the answer to that question.

Figure 1
Estimated Costs of the War in Iraq, 2003–2015

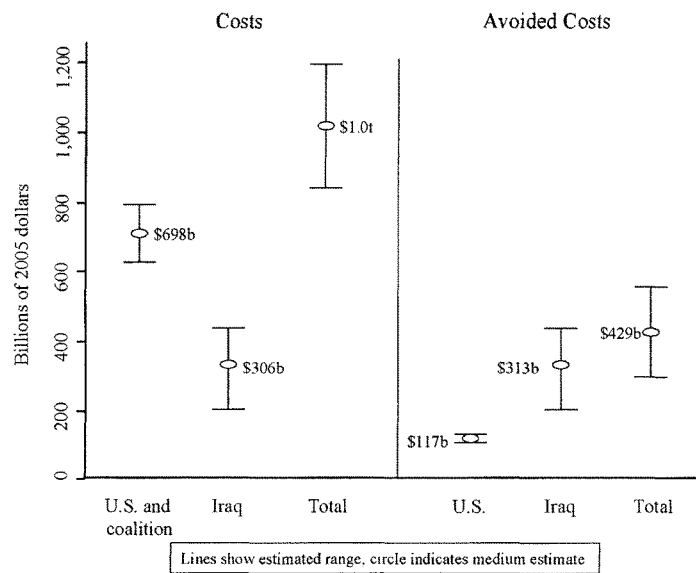




Table 2
Costs of War in Iraq
Billions of 2005 Dollars

COSTS			
	Low	Mid	High
March 2003 - August 2005			
United States			
Military and other real government expenditures	212	212	212
Fatalities	9	14	19
Injuries	9	18	27
Lost wages of reserves	10	10	10
Total U S	240	255	269
Non-US Coalition Countries			
Military and other real government expenditures	36	36	36
Fatalities	1	1	2
Injuries	1	2	3
Total non-U S coalition countries	38	40	41
Iraq			
Damaged infrastructure	20	20	20
Fatalities	65	106	147
Injuries	5	8	11
Total Iraq	90	134	178
Total direct costs March 2003 - August 2005	368	428	488
September 2005 - December 2015			
United States			
Military and other real government expenditures	272	295	322
Fatalities	15	24	33
Injuries	13	29	47
Total U S	300	349	402
Non-US Coalition Countries			
Military and other real government expenditures	46	50	55
Fatalities	1	2	3
Injuries	1	3	4
Total non-U S coalition countries	49	55	62
Iraq			
Fatalities	81	131	182
Injuries	22	41	65
Total Iraq	103	173	246
Total expected NPV future costs 2005 - 2015	452	576	711
March 2003 - December 2015			
United States	540	603	672
Non-US Coalition Countries	87	95	103
Iraq	192	306	424
TOTAL EXPECTED NET PRESENT VALUE	820	1005	1199
BENEFITS (Avoided costs)			
	Low	Mid	High
March 2003 - August 2005			
Avoided containment costs (United States)	32	32	32
Avoided murders by Saddam Hussein (Iraq)	52	85	117
TOTAL avoided costs	84	116	149
September 2005 - December 2015			
Avoided containment costs (United States)	78	85	93
Avoided murders by Saddam Hussein (Iraq)	140	228	316
TOTAL expected costs avoided	219	313	409
March 2003 - December 2015			
United States	110	117	125
Iraq	192	313	433
TOTAL EXPECTED COSTS AVOIDED	302	429	558

*Note: low implies lowest estimate lifetime cost of care for injuries, a 7% discount rate, and a U S VSL of \$4 million in 2000 dollars
mid implies midpoint of estimates of lifetime cost of care for injuries, a 5% discount rate, and a U S VSL of \$8.5 million in 2000 dollars
high implies highest estimates of lifetime cost of care for injuries, a 3% discount rate, and a U S VSL of \$9 million in 2000 dollars



2. Background

There has been much discussion regarding the costs of the conflict in Iraq. Most of it has focused on budgetary allocations, currently estimated to be \$212 billion.³ The actual direct cost, however, is the opportunity cost of resources used in the conflict that cannot be used elsewhere and the welfare losses of those killed and wounded. This cost to the U.S. includes not only resources used by the government, but also lost productivity of National Guard and Reserve troops (hereafter, “Reserves”) mobilized because of the Iraqi venture not available to do their civilian jobs, the value of lives lost, and injuries. Direct global costs of the conflict also include similar costs by countries other than the U.S., including Iraq.

This paper is not the first to estimate the economic costs of a war in Iraq. Prior to the war several economists conducted prospective cost estimates.⁴ Nordhaus (2002) noted that the costs of wars are typically underestimated *ex ante*. He estimated that the net present value of the cost of prosecuting a war, rebuilding, and the resulting macroeconomic effects could range from \$100 billion to \$1.9 trillion. McKibbin and Stoeckel (2003) model the impacts on the macroeconomy and agree that the costs of a war would exceed the budgetary outlays. Davis, *et al.* (2003) compare the expected costs and benefits of a war to those of continuing the policy of “containment” (e.g., enforcing the no-fly zone in northern and southern Iraq). Assuming a moderate but steady improvement in Iraqi GDP over the following 20 years and taking into account the dramatic contraction in the Iraqi economy under Saddam Hussein, the authors conclude that the expected net benefits of a war would exceed the net benefits of containment and ultimately lead to welfare improvements.

Those papers were all written before the war began. To our knowledge, there has been no similar rigorous analysis of the costs of the war since the war began. We hope to fill that gap. The remainder of the paper explains our methods, data, assumptions, and details our results.

³ This figure includes Iraq-specific appropriations, in 2005 dollars.

⁴ Some government agencies projected fiscal costs. The Congressional Budget Office (2002) projected a cost to the U.S. Treasury of \$9-\$13 billion to deploy troops, \$6-\$9 billion a month for fighting a war, \$1-\$4 billion a month for occupying the country, and \$5-\$7 billion to return the troops to their home bases. The House Budget Democratic Committee Staff (2002) estimated that a war would cost the Treasury \$100 - \$200 billion.



3. Costs to the United States

The total direct economic costs to the U.S. of the conflict in Iraq are comprised of a number of factors. In this section we describe those factors, discuss issues involved in calculating their costs, and then attempt to estimate those costs. In some cases, expenses commonly counted as costs are, in an economic sense just pecuniary transfers, while other factors typically ignored are real economic costs.

Military and government expenditures

The most widely-reported cost of the conflict is the cost to the federal treasury as reflected in incremental budget allocations approved by Congress. These allocations have included funds for moving troops, military hardware, combat pay, reconstruction, training and equipping Iraqi security forces, and support for allies. This amount is expected to be nearly \$213 billion by September 2005.⁵ While all of these expenditures affect the federal budget, some of them are not real costs in the economic sense. Real costs are economic resources not used for other purposes. Transfers are dollars moved from one place to another but do not represent economic resources diverted to, in this case, the Iraqi venture. Transfers do have a real cost—the distortions to the economy caused by raising revenues (taxing or borrowing)—but the transfers themselves are not real economic costs.⁶

Most of the appropriations for Iraq represent real costs. Moving troops, using munitions, reconstruction, training and equipping Iraqi security forces, supporting allies, and replacing and repairing military hardware are real costs. Regular compensation for active-duty soldiers is not a cost of the war as they would be paid regardless of the conflict. Their combat pay, however, is included in the incremental budgetary allocations and is properly considered a cost of the war assuming it reflects troops' risk-adjusted opportunity cost. We are unsure if the best measure of Reservists' opportunity cost is their military pay. Paying the Reserves is costly to the Treasury, but most Reservists probably did not expect to spend so much time in combat zones away from their civilian occupations. As a result, their opportunity cost is probably better represented by

⁵ Cost is in 2005 dollars. This includes Iraq-specific appropriations from April 2003, November 2003, August 2004, and April 2005

⁶ These costs may be substantial. Feldstein (1999) estimates that the deadweight loss of income taxes could be more than 30 percent of revenue raised.



their lost civilian productivity, not their military pay. From government expenditures, therefore, we subtract Reservists' pay, and in a section below we add back the opportunity cost of using the Reserves based on their civilian wages. Table 3 shows the economic cost of the extra budget appropriations in 2005 dollars to be \$210 billion.

Table 3
U.S. Iraq-specific appropriations
(Billions of dollars)

Date of appropriation	Nominal	2005 Dollars⁷
April 2003	57	59
November 2003	70	73
August 2004 ⁸	22	22
April 2005	59	59
Subtotal	206	213
Less reserve/guard pay	3	3
Total⁹	203	210

National Guard and reserves

Reserves play a crucial role in Iraq. In 2005, about 40 percent of the approximately 140,000 troops on active duty have been from the National Guard or Reserves¹⁰ and an additional 63,000 have been mobilized to replace active-duty troops who are now in Iraq.¹¹ The opportunity cost of using these troops is their productivity lost from the U.S. economy. If we assume that as civilians they are paid their marginal product, then their lost civilian wages reflect the economic cost of their participation in the war. Data from the Department of Defense, U.S. Census, and the Bureau of Labor Statistics allow us to estimate their lost wages. In 2005, the Congressional Budget Office published data gathered from the Department of Defense on the civilian occupations of selected reservists.¹² Combined with data from the Bureau of Labor and

⁷ Real amounts calculated using monthly GDP deflator. See Bureau of Economic Analysis (2005).

⁸ Note: Nominal and real dollar amounts are equal only because of rounding.

⁹ Differences between subtotal and total and individual appropriations are due to rounding error.

¹⁰ The Brookings Institution (2005).

¹¹ Congressional Budget Office (2005).

¹² Congressional Budget Office (2005).



Statistics on average hourly wages and hours worked in each of these occupations, we calculate the average annual salary of the typical reservist from their civilian occupation.

Table 4 shows the share of Reserve troops that work in various industries, the average hourly wages of those industries, and the average number of hours worked each week. These figures suggest that, on average, the Reserve soldiers earn about \$33,000 per year as civilians. As the table shows, these numbers imply that the opportunity cost of using Reserve troops at current levels is \$3.9 billion per year, or \$10.3 billion to date.

Table 4
Reservists' Civilian Occupations and Wages

Industry	Percent reserves in this industry	Average hourly wage, 2003 \$	Average hours worked	Average annual income, 2005 \$	Num reservists employed in these industries ¹³
Management, professional, and related	33%	23.33	36.1	44,925	38,324
Sales and office	18%	14.41	34.35	26,403	20,904
Service	17%	10.40	31.5	17,475	19,743
Production, transport, and materials moving	16%	14.78	37.5	29,565	18,581
Construction	15%	18.89	39.6	39,902	17,420
Farming, forestry, and fishing	1%			20,056	1,161
Total				33,465	116,133

Lives lost

The most striking cost of the conflict is the lives lost as a result. Soldiers' deaths and the suffering of their families are reported daily, but have not been included in any analyses of the costs of the war. Monetizing life is understandably controversial—how can a dollar figure reflect the death of a child, spouse, or parent? Indeed, economic analyses do not attempt to value any particular individual's life. Instead, they assess how much individuals are willing to pay to

¹³ Includes both reserve troops stationed in Iraq and reserve troops called to duty to fill the positions of normal active-duty soldiers called to Iraq (reserve troop "backfill"). This is the average number of Reserve and National Guard troops required at any given moment (we took the average over 2003-August 2005).



reduce their risks of death and use that information to calculate a “value of a statistical life” (VSL). In policy analysis these assessments are a crucial tool for evaluating whether benefits outweigh costs and whether society’s limited resources are being deployed in an effective way. Even if analysts try to avoid this sensitive issue by not explicitly monetizing statistical lives, policies will implicitly do so anyway. For example, if a proposed policy is expected to cost \$1 billion and its benefit is to save two lives, then the policy has implicitly valued a statistical life at \$500 million. Policy makers and analysts need some way of deciding whether such a policy would be a good investment. Monetizing statistical lives by measuring how much people actually pay to reduce risks provides a coherent way of making this decision.

The process of estimating these values, however, is fraught with uncertainty and error.¹⁴ Economists use observed responses to risks to estimate how people value their own lives. As discussed above, one can evaluate what people’s actions reveal about how much they are willing to pay to reduce their risks of dying by a small amount. One common way to estimate how much people are willing to pay to mitigate risks is to evaluate the inverse question of how much more must people be paid to take riskier jobs. Viscusi and Aldy (2003) review the enormous body of literature on the subject, and find that studies tend to yield values between \$4 million and \$9 million per statistical life in 2000 dollars, though Viscusi (2004) shows that estimated values can vary across industries, occupations, and individual characteristics.¹⁵

In this paper we use this range of VSL estimates from the economics literature.¹⁶ While we calculate a range for all of our estimates, here we present costs based on a VSL of \$6.5

¹⁴ Valuing statistical lives is controversial in other ways, too. For example, should age matter so that the lives of the elderly are valued differently from the lives of younger people (see, e.g., Hahn and Wallsten 2003)? Because individual’s willingness to pay is correlated with ability to pay, do these methods imply that poor people are worth less than rich people (see, e.g., Sunstein 2004)?

¹⁵ Sometimes other methods are used to calculate a value of life. Unlike the economic approach that values statistical lives (VSL), other approaches try to value individual’s lives. Tort law, for example, in most states estimates the net present value of an individual’s lost future income as compensation for wrongful death. As Posner and Sunstein (2004) note, this approach has the advantage of allowing flexible values that can differ across individuals, but has disadvantages including, for example, automatically valuing poor people less than rich people and children less than adults (because they will not begin earning money until far into the discounted future). The authors find that the average wrongful death settlement in 2001 was \$3.1 million and the median \$1.1 million. The lost-wages approach was generally used to compensate survivors of 9/11 victims. Compensation ranged from \$250,000 to \$7.1 million, and the average award was \$2.1 million per family (Posner and Sunstein 2004).

¹⁶ Most American deaths in Iraq are military, which calls into question the use of established VSL from the literature. Data on active-duty soldiers are typically excluded from VSL analyses in part because data collected by the Bureau of Labor Statistics excludes the military and in part because soldiers face atypical nonlinearities in their compensation and job risks. In particular, military service is voluntary, but once someone has volunteered he cannot generally refuse to be sent into combat. In addition, soldiers have a standard compensation schedule but receive additional imminent danger (combat) pay when sent to an area classified as a combat zone. We attempted to derive



million, the midpoint of those estimates. Between March 20, 2003 and August 25, 2005, 1,877 U.S. troops and an additional 97 U.S. contractors were killed in Iraq. We thus find the cost of lives lost, in 2005 dollars, to be \$14 billion.

Wounded

The injured and wounded represent another real cost of the war. The economic cost of these injuries is the net present value of the cost of treatment and future care plus the cost of the injury to the person wounded. None of these costs is easy to estimate.

In a *New York Times* editorial, Bilmes (2005) used disability payments and health care expenditures from the 1991 Gulf War to extrapolate an annual cost for the number of wounded in the current conflict. She then assumed these payments would be required for the next 45 years, concluding that they could ultimately reach \$1.3 trillion. Her approach, while a good start, is problematic. First, disability payments themselves are a budgetary transfer and not a real cost. To the extent that they differ from lost productivity they may over- or under-state the loss to the economy resulting from injured soldiers' inability or reduced ability to work. In addition, they are unlikely to be based on values that individuals themselves place on avoiding injuries. Second, the types of injuries sustained during the first Gulf War may be different from those sustained by troops today. Third, the calculation did not discount future expenditures. One dollar spent 45 years from now is worth much less than one dollar spent today.

We use data from the Defense Department, the Bureau of Labor Statistics, and medical journals to estimate the number of wounded, the types of injuries, and typical costs of treating those injuries. The appendix describes our methodology in detail. The cost of the injuries extends beyond the resources employed for treatment and care. It also includes the welfare loss to the wounded individual. This value, or the value of a statistical injury, can be inferred by measuring what people are actually willing to pay to reduce the risks of certain types of injuries (Viscusi and Aldy 2003).

Using these types of studies, the National Highway Traffic Safety Administration and the Centers for Disease Control Trauma research program has classified injuries by their severity

a rough method for estimating a military VSL based on combat pay and the expected probability of death in a combat zone derived from U.S. experience in Operations Desert Shield, Desert Storm, Restore Hope in Somalia, and Uphold Democracy in Haiti. Our approach yielded a military VSL of \$6.1 million, with a range of \$5.5 million to \$7.5 million, well within ranges established in the existing literature. However, our model of military VSL is not complete, and we leave it to future research to more fully derive and estimate the model.



and calibrated them to value of statistical life.¹⁷ They classify injuries as minor, moderate, serious, severe, critical, and fatal. Relative to the value of a statistical life, these injuries are 0.0020, 0.016, 0.058, 0.19, 0.76, and 1, respectively.¹⁸ We use information from the Department of Defense¹⁹ on the types of injuries sustained by soldiers, information from various medical experts on the severity of injuries,²⁰ estimates from NIH, the Neurotrauma registry, and the National Association of State Head Injury Administrators on the typical costs of rehabilitation and care for such injuries,²¹ and the VSL calibration method discussed above to derive a cost of different types of injuries.

Table 5 presents data on numbers of wounded, types of injuries, average lifetime treatment costs, and statistical value of such injuries. Based on these estimates and assuming that the lifetime cost of care numbers represent their total discounted net present value, we estimate the net present value of caring for those injured to date to be \$6.6 billion. We classify the types of injuries sustained on the scale of minor to severe and calculate the costs of those injuries calibrated to our estimated military VSL, as described above. The total cost of injuries is \$11.5 billion. Using our medium cost of care estimates, we thus estimate that the net present value of total cost of injuries to date is \$18.2 billion.

¹⁷ National Highway Traffic Safety Administration (1994).

¹⁸ Thanks to Bob Hahn for pointing me to Hahn and Tetlock (1999), which employed NHTSA's methodology for estimating costs of injuries, and for thinking through a reasonable way to measure military VSL. These estimates assume that individuals take into account the financial costs that they would bear if suffering from injuries when choosing how much to pay to reduce risks. If individuals had to bear the full cost of treatment and care, then it would be inappropriate to also add in those costs as they should be incorporated into the willingness-to-pay estimates. The studies, however, are generally conducted on data on workers or employed people likely to have health insurance. Those with comprehensive health insurance are unlikely to consider the financial costs of their care when making decisions that affect their risk of injury, making it appropriate to consider those costs separately.

¹⁹ See Mishra (2004).

²⁰ See Woodford (2005), Marchi *et al.* (1999), and Ross *et al.* (1998).

²¹ See NIH (2005), Neurotrauma Registry (2005), and National Association of State Head Injury Administrators (2005)



Table 5
Costs of Injuries, 2003-August 2005

Type of Injuries	Pct of wounded suffering injury	Number suffering this injury	Lifetime treatment costs	Value of Statistical Injury (Millions of 2005 \$) ²²	Total cost (Billions of 2005 \$)
Severe head injury	20%	2824	\$600,000 to \$4.3 million	\$3.4	16.0
Amputation	6%	847	\$58,000 to \$158,000	\$0.88	0.9
Injury resulting in inability to return to duty (not including brain injury or amputation)	24%	3389	0	\$0.26	0.9
Injured, but able to return to duty	50%	7060	0	\$0.06	0.4
Total	100%	14,120			18.2

Other costs

In addition to the major economic costs discussed above, the conflict involves a number of other relatively small, but real, costs. These include:

- The cost to military families of additional armor and equipment they purchase and send directly to troops. In October 2004 an amendment included in the FY2005 National Defense Authorization Act authorized the government to reimburse families for “protective, safety, and health equipment” up to the lesser of the amount the family paid or \$1100.
- The costs to employers of finding and training temporary replacements for civilian jobs vacated by Reserves.²³

²² See Appendix for more detail.

²³ The Congressional Budget Office (2005) notes that “hiring a new employee may require significant expenditures for recruiting, administration, and training...” but does not estimate those costs.



Net present value of the cost of the conflict to the U.S.

Aggregating together the cost to date of military operations, lives lost, injuries, and lost civilian production of Guard and Reserve troops, we find that through August 2005, the war has cost the U.S. about \$255 billion.

4. Costs to Other Coalition Countries

While the United States bears a great deal of the costs, the other countries in the coalition also have real costs. We do not have good data on coalition costs. Non-US coalition troops have averaged 17% of U.S. troop levels,²⁴ most of those from the U.K. If we assume that real military costs are proportional to U.S. costs, then non-U.S. military coalition costs have been \$36 billion.

Most of the research that estimates values of statistical lives has focused on U.S. data, complicating our calculation of the cost of these deaths. Studies of VSL in other countries, however, when examined together reveal a positive correlation between national income and the value of a statistical life (Viscusi and Aldy 2003). In a meta-analysis of 49 studies, Viscusi and Aldy (2003) find an elasticity of income with respect to value of life ranging from 0.5 to 0.6. We thus take the midpoint of this estimate (0.55) and per capita income figures from coalition countries to estimate the value of non-American lives lost.

According to the Brookings Institution (2005) and Iraq Coalition Casualty Count (2005), between March 20, 2003 and August 21, 2005, at least 237 non-U.S. coalition troops and non-U.S. coalition civilians died in the conflict.²⁵ With these estimates, we use the U.S. figure of \$6.5 million (2000 dollars) per statistical life, the average income of coalition countries, and Viscusi and Aldy's (2003) elasticity estimates to calculate a value of lost non-U.S. coalition lives. Table 6 shows the data, calculations, and results. The table reveals that under these assumptions, the cost of lost lives to non-U.S. coalition members has been \$1.4 billion.

²⁴ Averaged over May 2003 to August 2005.

²⁵ The Brookings Institution offers a breakdown of these deaths by country



Table 6
Costs of lives lost in coalition countries

Country	Total killed	2005 nominal GDP (2005 \$)	VSL relative to U.S. (using Viscusi-Aldy elasticity estimate of 0.55)	VSL (Million 2005 \$)	Total VSL loss (Millions 2005 \$)
United Kingdom	124	38098	0.950	6.7	831
Bulgaria	19	3347	0.494	3.5	66
Denmark	2	49182	1.095	7.7	15
El Salvador	2	2410	0.482	3.4	7
Estonia	2	9112	0.570	4.0	8
Hungary	2	10978	0.594	4.2	8
Italy	28	31874	0.868	6.1	172
Kazakhstan	1	3453	0.495	3.5	3
Latvia	1	6559	0.536	3.8	4
Netherlands	3	38320	0.953	6.7	20
Poland	19	8082	0.556	3.9	75
Slovakia	3	9305	0.572	4.0	12
Spain	11	27074	0.805	5.7	63
Thailand	2	2665	0.485	3.4	7
Ukraine	18	1748	0.473	3.3	60
Total					1,351

Non-U.S. coalition troops and civilians have also been wounded. We assume that the types of injuries sustained occur in the same proportion, that the costs of treatment are identical across countries, and that the value of statistical injuries has the same income elasticity as the value of statistical lives across countries (0.55). With that information combined with per capita income for each country, we can calculate the economic costs of injuries. We find that the net present value of injuries to coalition troops and civilians is \$2 billion. Thus, the net present value of costs to-date for non-US coalition countries is \$40 billion.

5. Costs to Iraq

Iraq has obviously been affected more than any other country by the conflict, and calculating the costs to that country involves by far the most uncertainties. Direct costs include



infrastructure destroyed, deaths, and injuries. The available data on all of these costs is questionable, so the calculations presented here must be considered carefully.

Infrastructure destroyed

A thorough tally of destroyed infrastructure is not publicly available, but the World Bank estimated reconstruction costs (O'Hanlon 2005; World Bank 2003). We can use these estimates as proxies for the value of destroyed infrastructure. According to these estimates, infrastructure and agriculture and water resources will require \$27.2 billion between 2004 and 2007.²⁶ The Iraq Relief and Reconstruction Fund from the United States includes about \$7 billion for infrastructure and water resources and is included in the budget allocations discussed above.²⁷ We assign the remaining \$20 billion of damaged infrastructure as a cost to Iraq.

Death and injuries

Few sources provide information on the number of Iraqis who have died. Nonetheless, sources that seem the most reliable suggest that 5,091 Iraqi military and police officers and 23,654 civilians have died since the war began.²⁸ We use the income elasticity of 0.55 from Viscusi and Aldy (2003) and Iraq's pre-war per capita income levels to derive an Iraqi VSL of about \$3.5 million.²⁹ These estimates yield a cost of loss of life to Iraq to be about \$106 billion.

Data on Iraqi injuries are even scarcer than on deaths. We assume that Iraqi troops face the same types of injuries faced by U.S. troops (and in the same proportions), that the costs of treatment in Iraq are proportional to the costs in the U.S. (where the proportion is the ratio of Iraq's pre-war GDP to U.S. GDP), and that the value of statistical injuries has the same income elasticity as the value of statistical lives across countries (0.55). With that information we can calculate the economic costs of injuries. We find that the net present value of the cost of injuries to Iraqis to date is \$8 billion.

²⁶ O'Hanlon (2005) shows that the World Bank and CPA estimated that an additional \$28 billion is required for other reconstruction efforts, including "health, education, employment creation," oil, and environment. We exclude these expenditures from our estimate because it is not clear from the report that these funds are to repair infrastructure damaged during the war.

²⁷ See U.S. Department of State (2005).

²⁸ As of August 16, 2005. See Iraq Body Count Database (2005).

²⁹ This figure is reasonably close to results of studies conducted in other developing countries. Shanmugam (1996/7) estimated a value of \$1.2 million to \$1.5 million per statistical life in India (in 2000 dollars as reported by Viscusi and Aldy 2003).



6. Expected Net Present Value of Costs

The estimates above provide the net present value of the cost of the war to-date. We are also interested in the expected costs going forward. Nobody knows how long the conflict will last, so projections regarding the future should be treated with some skepticism. Nonetheless, the Congressional Budget Office (2005) projected budget outlays and the number of troops in Iraq to 2015. To estimate an expected net present value, we assume that the death and injury rate will be the same as the average over the past two years. With that assumption, the CBO's budget and troop estimates, and a five percent discount rate, we estimate that the expected net present value of the cost of the conflict from September 2005 through 2015 could be \$349 billion to the U.S., \$55 billion to non-U.S. coalition countries, and \$173 billion to Iraq, for a global expected net present value from September 2005 through 2015 of \$576 billion.

Combining the expected net present value of future costs with the net present value of costs to-date, we estimate the net present value of the conflict from 2003 through 2015 to be \$603 billion to the U.S., \$95 billion to coalition partners, and \$306 billion to Iraq, for a total expected net present value of \$1 trillion

7. Avoided Costs

The costs outlined above are not the net incremental costs of the war. Regardless of the war's impact on future terrorism, it has also resulted in two cost savings. The main benefit to the U.S. is no longer using resources to enforce U.N. sanctions. One direct benefit to Iraq is the people not murdered by Saddam Hussein.

U.N. sanctions

Prior to the war, the U.S. was enforcing U.N. resolutions such as "no-fly" zones, sanctions, and inspections. Davis, *et al.* (2003) estimated the annual economic costs of that operation to be \$13 billion. Having avoided that cost since March 2003 yields a benefit of about \$32 billion to date.

Davis, *et al.* (2003) also estimated the expected net present value of enforcing this policy for the next three decades. The authors used a two percent discount rate and assumed a three



percent chance in any given year that the Iraqi leadership would change in a way that would allow the U.S. to cease enforcing a containment policy. We adopt the Davis, *et al.* (2003) assumption of a three percent chance of regime change in any year, but use a five percent discount rate to be consistent with other calculations in our analysis and with government recommendations regarding discounting. With the five percent discount rate, the net present value of avoiding containment costs, from March 2003 through December 2015 is \$117 billion.

Iraqi deaths under Saddam Hussein

As discussed above, many Iraqis have died as a result of the war. By all accounts, however, Saddam Hussein's regime was particularly brutal, with hundreds of thousands killed under his regime. We use the Davis, *et al.* (2003) assumption, based on a large number of other sources, of about 10,000 people dying premature deaths annually under Saddam Hussein's regime and a three percent chance of regime change each year. With those assumptions, our value of Iraqi VSL derived above, and a five percent discount rate, we estimate that removing Saddam Hussein has saved, in expected terms, 83,018 lives over the next ten years, for a net present value of \$228 billion between September 2005 and December 2015.

8. Change in Likelihood of Terrorism: Cost or Benefit?

One justification for the conflict is to reduce the risks of terrorism. Unfortunately, while supporters of the war argue that the conflict has made the world safer from terrorism, opponents counter that it has increased the risk of terrorism. The U.S. State Department tracks terrorist attacks around the world.³⁰ We reproduce this information in Table 7. These reports cannot provide enough data to answer the crucial question: would terrorism have been lower or higher without the Iraqi conflict, and what is the change in the future probability of terrorist attacks?

³⁰ U.S. Department of State (2005)



Table 7
Global terrorist attacks

Year	Number of Attacks	Killed	Wounded
2000 ³¹	423	405	791
2001 ³²	348	4655	1,080
2002 ³³	199	725	2,013
2003 ³⁴	208	625	3646
2004 ³⁵	651	1907	9300

Bram and Orr (2002) estimate that the 9/11 terrorist attacks cost between \$33 and \$36 billion.³⁶ If removing Saddam Hussein from power reduced the probability of such an attack by 10 percent in each year, this would result in expected benefits of about \$3.5 billion per year. Conversely, if the war has increased the probability of a major terrorist attack by 5 percent in each year, then this becomes an extra cost of \$3.5 billion per year. Clearly, one key determinant in whether the conflict in Iraq has a net positive or negative economic impact depends crucially on how it has affected the probability of terrorism.

9. Conclusions

In this paper we estimate the direct costs and avoided costs of the war in Iraq from three perspectives: the United States, coalition partners, and Iraq. The conflict, however, has economic implications beyond these direct impacts. The most obvious is its indirect macroeconomic impacts on the U.S. and the world. The war may influence oil prices, for example, with ripple effects through the economy. In January 2003, oil cost about \$32 per barrel but increased to around \$70 per barrel by the end of August 2005. Estimates of the conflict's macroeconomic impact to date will depend crucially on assumptions regarding how much of this increase is due to Iraq and regarding how much future changes up or down are due to Iraq.

³¹ U.S. Department of State (2001).

³² U.S. Department of State (2002).

³³ U.S. Department of State (2003).

³⁴ U.S. Department of State (2004).

³⁵ Brennan (2005)

³⁶ Davis, *et al.* (2005) believe this estimate is too low, and that the true costs probably exceeded \$50 billion.



Iraq's economy, meanwhile, was decimated by Saddam Hussein and U.N. sanctions before the war and probably nearly completely destroyed during the war. Its economy, however, as measured by GDP, has apparently begun a substantial recovery. Kamp, *et al.* (2005) note that Iraq's GDP more than doubled between August 2003 and August 2005. The war could also result in other, intangible, costs and benefits. A successful, stable, democratically elected government in Iraq could yield substantial benefits. Contrarily, some are concerned about future costs of an emerging theocracy or more severe civil conflict. We do not deal with these important questions.

In addition, even the costs that we can monetize must be considered skeptically. Good, publicly-available data are largely unavailable, each calculation requires a number of assumptions, and we push the already-controversial tools of cost-benefit analysis beyond their standard uses.

Nonetheless, this analysis is, we believe, the first to attempt to rigorously examine the direct economic costs of the war in Iraq. We estimate that through August 2005 the war has cost the U.S. \$255 billion, coalition partners \$40 billion, and Iraq \$134 billion. The costs avoided by Saddam Hussein no longer being in power are about \$116 billion. Using Congressional Budget Office estimates regarding the expected additional time U.S. troops will be in Iraq, we estimate that the expected net present value of the conflict from September 2005 through 2015 could be \$349 billion to the US, \$55 billion to coalition partners, and \$173 billion to Iraq. The net present value of avoided costs during that time is \$313 billion. We thus find that the total direct costs of the war could exceed \$1 trillion, while the costs avoided could be \$429 million.

We recognize that our estimates are incomplete and crude. Nonetheless, they show the substantial costs involved in fighting this war. Some costs are already sunk, but the analysis suggests that future costs may be significant. Hopefully policy makers and others that have better data than we have can refine our approach and assess whether the benefits justify the costs.



Appendix: Injury Value Calculation Methodology

This appendix is a detailed description of how we valued injuries to U.S. and coalition troops. In particular, it describes our estimates of the lifetime costs of injuries already incurred as well as our predictions for the remainder of 2005 through 2015. Where possible, we have used U.S. government estimates of the level of U.S. involvement in Iraq to date and in the future and conventional values of injury and lifetime care derived from economists and experts in the fields of risk analysis and medicine.

U.S. calculations, 2003 - August 2005

Not all troops injured in Iraq sustained the same types of injuries. A large number of injuries appear to be relatively mild and less costly than others. We create four categories of injuries. First, severe brain injuries afflict 20% of injured troops.³⁷ Second, about 6% of injured troops face amputations.³⁸ Statistics also show that over 50% of those wounded in Iraq are unable to return to duty.³⁹ To be conservative in our estimates, we assumed that exactly 50% of injured soldiers could not return to duty and the 26% of troops with severe brain injuries or amputations is included in this group. That leaves an additional 24% who did not receive a severe brain injury or amputation but whom are unable to return to duty. We thus assume that the 50 percent of troops who could return to duty suffered only minor to moderate injuries.

In order to quantify the severity of each of these types of injuries, we used an index commonly used by medical experts called the abbreviated injury scale (AIS), shown in Table A.1. Empirical economics research has used the AIS scale to calculate the value of statistical injuries. For example, the National Highway Transportation Safety Administration (1994) has endorsed and used the scale as a tool for trying to estimate the costs of traffic accidents. This scale categorizes injuries into five groups—minor, moderate, serious, severe, and critical. Hahn and Tetlock (1999) map injury severity into willingness to pay to avoid the injury, also shown in

³⁷ This is a highly cited statistic from the U.S. military. See, for example, Schlesinger (2003).

³⁸ Data compiled by the U.S. Senate that was part of the 2005 defense appropriations bill indicates that 6% of those wounded in Iraq have required amputations. See Mishra (2004).

³⁹ Data are from the Pentagon. See Mishra (2004).



Table A.1. Using these willingness to pay ratios as well as conventional values of statistical life,⁴⁰ we calculate a value of statistical injury for each of the main categories on the AIS scale.

Table A.1
Injuries by Type and Implied Values of Statistical Injury

Score on AIS scale	Types of injuries with this score ⁴¹	Willingness to pay to avoid injury relative to VSL	Implied Value of Statistical Injury (U.S., 2005 \$, assuming VSL of \$7.057m)
AIS 1 (minor)	Includes contusion or sprain of acromion, elbow, etc, or fracture of finger	0.002	14,115
AIS 2 (moderate)	Includes knee or ankle sprains, finger amputation, carpal, tarsal, or leg uncomplicated fractures	0.016	112,923
AIS 3 (serious)	Includes open or displaced fractures of long bones, arterial lacerations, hand or foot amputation, tendon ruptures	0.058	409,347
AIS 4 (severe)	Includes leg amputation or crush and pelvic crush, moderate to severe head injury	0.19	1,340,963
AIS 5 (critical)	Includes severe head injury	0.76	5,363,852

Because the types of injuries faced by troops in Iraq do not neatly fit into each of these categories, we specify a range of AIS scores for each injury type. This range is detailed in Table A.2. We calculate the willingness to pay to avoid each type of injury by taking the midpoints of the two AIS scores in the range.

⁴⁰ See, for example, Viscusi and Aldy (2003). Our calculations are based on a value of statistical life (U.S.) in 2000 dollars of \$6.5 million. This is the midpoint of two common values of statistical life (in 2000 dollars). \$3 million (low) and \$9 million (high). We estimated the value of each statistical injury with an assumed value of statistical life of \$3 million, \$6.5 million, and \$9 million. Table A.1 and A.2 show the calculations for the case of \$6.5 million.

⁴¹ See Marchi *et al.* (1999) and Ross *et al.* (1998).



Table A.2
Injuries Experienced in Iraq and Implied Values of Statistical Injury

Score on AIS scale	Types of injuries with this score	Willingness to pay to avoid injury	Value of Statistical Life (U.S., 2005 \$)	Implied Value of Statistical Injury (U.S., 2005 \$)
Severe to Critical (AIS 4 to AIS 5)	Severe head injury	0.475	7,057,700	3,352,408
Serious to Severe (AIS 3 to AIS 4)	Amputation	0.124	7,057,700	875,155
Moderate to Serious (AIS 2 to AIS 3)	Injury resulting in inability to return to duty (does not include brain injury or amputation)	0.037	7,057,700	261,135
Minor to Moderate (AIS 1 to AIS 2)	Injured, but no brain injury or amputation and able to return to duty	0.009	7,057,700	6,3519

In addition to the lifetime costs of injury indicated by the value of statistical life figures, it was necessary to take into account the direct costs associated with each type of injury. These include lifetime costs of care. We made the conservative assumption that only those with severe brain injuries and amputations would require lifetime care. Estimates commonly used by medical experts suggest a lifetime cost of care for brain injuries ranging from \$600,000 to \$4,000,000 per person⁴² and about \$45,000 to \$57,000 for amputees⁴³ plus the cost of prosthetic limbs ranging from about \$12,500 to about \$100,000.⁴⁴

The Department of Defense periodically announces the number of troops injured in Iraq. As of August 25, 2005, that number was 14,120. Using this number and the statistics cited above, we were able to calculate the predicted lifetime cost of injuries of all types experienced by soldiers from the start of the war to the present. As of August 25th, that number stood at about \$18 billion.

⁴² See, for example, National Association of State Head Injury Administrators (2005) and Neurotrauma Registry (2005).

⁴³ See, for example, Reiber *et al.* (1995).

⁴⁴ See, for example, Sweeney (2005) and Associated Press (2004). We make the conservative assumption that the patient purchases only one prosthetic limb in their lifetime.



U.S. calculations, 2003-2015

We assume that there will be injuries as long as U.S. troops remain in Iraq. In a 2005 report, the Congressional Budget Office projected troop levels in Iraq through 2015 (see Table A.3).⁴⁵ In order to similarly calculate the costs of injuries out to 2015, we assumed that the annual injury rate (about 4.3% of all troops deployed)⁴⁶ will continue through 2015. We also assumed that injuries would occur in the same proportions as they are currently (6% are amputations, 20% are brain injuries, 24% are moderate to serious, and 50% are minor to moderate). With these assumptions, projections of the number of future troops, and our discount rates of 3, 5, and 7 percent, we are able to estimate a range of injury costs into the future. Using the midpoint figures of a 5% discount rate, a value of statistical life of \$6.5 million (in 2000 dollars), and lifetime costs of care, we estimate that the expected net present value of injuries to the U.S. from 2003-2015 is about \$48 billion.

Table A.3
U.S. troop strength projected into the future

Year	Predicted troop strength	Percent of 2005 troop strength
2006	136602	0.95
2007	107379	0.75
2008	80874	0.56
2009	56408	0.39
2010	33981	0.24
2011	33981	0.24
2012	33981	0.24
2013	33981	0.24
2014	33981	0.24
2015	33981	0.24

Coalition calculations

We were able to make similar calculations for coalition countries. We assumed that the lifetime cost of treating brain injuries and amputees is identical in the U.S. and in the coalition countries. We also assumed that only coalition countries reporting the death of at least one soldier between 2003 and August 2005 experienced any injuries of troops and that only these

⁴⁵ See Congressional Budget Office (2005).

⁴⁶ Number of troops deployed are available from several sources. See, for example, Brookings Institution (2005), which uses Department of Defense data.



countries will experience injuries to troops in the future (a conservative assumption). In addition, we assumed that coalition countries would reduce their troop strength at the same rate at which the U.S. reduces its troop strength (see Table A.3).

Viscusi and Aldy (2003) find an elasticity of income with respect to value of life ranging from 0.5 to 0.6. We can thus take the midpoint of this estimate (0.55) and per capita income figures from coalition countries to estimate the value of a statistical life in each of the coalition countries. Adding up the totals and using a value of a statistical life in the U.S. of \$6.5 million (in 2000 dollars), we found the cost of injuries to coalition countries to be about \$2 billion through August 2005. Using a 5% discount rate, the total for 2003-2015 is expected to be about \$4.5 billion.

Iraq calculations

Iraq presented unique problems because of conflicting estimates of the country's security force strength in Iraq over the last two and a half years,⁴⁷ vague estimates regarding the expected growth in security force strength, and the fact that U.S. costs for the average lifetime care of injuries is likely to be much higher than in Iraq (and this data are not readily available for Iraq). Based on a number of assumptions, we were able to resolve these issues, but inaccuracy in our assumptions could affect the accuracy of our estimates.

In general, all Iraq injury costs were computed in a similar way as the coalition costs. However, there are two main differences:

First, for the coalition countries, we assumed that their numbers of troops in Iraq decreased over time at the same rate as the number of U.S. troops are expected to decrease. For Iraq, however, the size of the security force is actually growing. By August 2005 it was at about 180,000, with a stated goal of 272,566.⁴⁸ In order to project troop size into the future, we assumed that the rate of grow in the later half of 2005 continues until the number of security forces reaches its target. We expect Iraq to reach its target by 2007. Table A.4 shows the predicted change over time in Iraqi security force strength as well as how it compares to the projected levels of U.S. troops in Iraq. We used the third column of Table A.4 as the factor by

⁴⁷ This problem is further complicated by the fact that there has been general dispute over whether to count untrained troops as troops or not.

⁴⁸ The Brookings Institution (2005)



which to multiply expected U.S. injuries over 2005-2015 in order to arrive at expected Iraqi injuries.

Table A.4
Iraqi Security Force Strength Projected into Future

Year	Troop Strength	Percent of U.S. Total
2006	265,728	1.95
2007	272,566	2.54
2008	272,566	3.37
2009	272,566	4.83
2010	272,566	8.02
2011	272,566	8.02
2012	272,566	8.02
2013	272,566	8.02
2014	272,566	8.02
2015	272,566	8.02

Second, we assume that the lifetime costs to care for severe brain injuries and amputations, in Iraq, are the U.S. costs multiplied by the ratio of Iraq's pre-war (2002) nominal GDP to the 2002 nominal GDP of the U.S.. This assumption was the best one we could think of to account for the fact that Iraqis likely spend far less than Americans on treatment and care of debilitating injuries. Iraq's nominal GDP in 2002 was about 9% of the U.S. GDP. We thus assume that whatever amount of money Americans spend on lifetime care of injuries, Iraqis with similar injuries will spend 9% of the total. Thus, because the lifetime care costs of a severe head injury in the U.S. range from \$600,000 to \$4,000,000, we expect them to range from \$54,000 to \$360,000 in Iraq. Because the lifetime cost of care of an amputation in the U.S. is \$45,000 to \$57,000, we expect it to be between \$4,100 and \$5,100 in Iraq. And because the cost of a prosthetic limb ranges from \$12,500 to \$100,000 in the U.S., we expect it to range from \$1,100 to \$9,100 in Iraq.



References

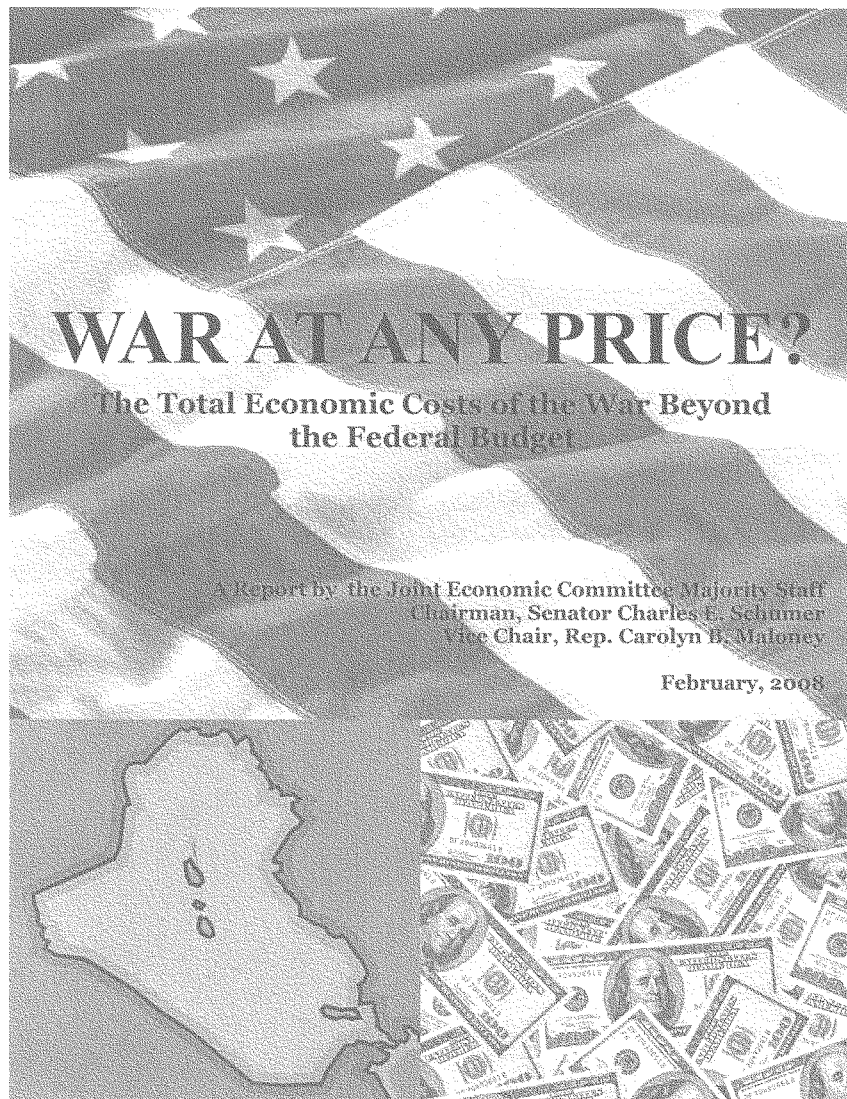
- Associated Press. 2004. "Iraq War Amputees Get New Limbs, New Life." March 8.
- Bilmes, Linda. 2005. "The Trillion-Dollar War." *The New York Times*.
- Bram, Jason and James Orr. 2002. "Measuring the Effects of the September 11 Attack on New York City." *Economic Policy Review*, 8:2.
- Brennan, John. 2005. "Remarks on Release of Country Reports on Terrorism." April 27.
- Bureau of Economic Analysis. 2005. "Selected NIPA Tables."
<http://www.bea.gov/bea/dn/dpqa.pdf>.
- Congressional Budget Office. 2002. "Estimated Costs of a Potential Conflict with Iraq." Washington, DC.
- _____. 2005. "Budget and Economic Outlook." January.
- _____. 2005. "The Effects of Reserve Call-Ups on Civilian Employers." Washington, DC.
- Davis, Steven J., Kevin M. Murphy, and Robert H. Topel. 2003. "War in Iraq versus Containment: Weighing the Costs." Chicago.
- Feldstein, Martin. 1999. "Tax Avoidance and the Deadweight Loss of the Income Tax." *The Review of Economics and Statistics*, 81:4, pp. 674-680.
- Hahn, Robert W. 2005. *In Defense of the Economic Analysis of Regulation*. Washington, DC: AEI Press.
- Hahn, Robert W. and Paul C. Tetlock. 1999. "The Economics of Regulating Cellular Phones in Vehicles." *AEI-Brookings Joint Center*, Working Paper 99-9: Washington, D.C.
- Hahn, Robert W. and Scott Wallsten. 2003. "Is Granny Worth \$2.3 Million or \$6.1 Million?" *Washington Post*, June 1.
- Hassett, Kevin. 2005. "Why Are Americans Sour About Everything? Iraq." *Bloomberg.com*, August 15.
- House Budget Committee Democratic Staff. 2002. "Assessing the Cost of Military Action Against Iraq: Using Desert Shield/Desert Storm as a Basis for Estimates: An Analysis by the House Budget Committee Democratic Staff." Washington, DC.
- Iraq Body Count Database. 2005, www.iraqbodycount.org.



- Iraq Coalition Casualty Count. 2005. "Military Fatalities: By Time Period." <http://icasualties.org/oif/>.
- Kamp, Nina, Michael E. O'Hanlon, and Amy Unikewicz. 2005. "The State of Iraq: An Update." *The New York Times*, September 9.
- Marchi, Alberto G, Daniela Di Bello, Gianni Messi, and Giuseppe Gazzola. 1999. "Permanent Sequelae in Sports Injuries: A Population Based Study." *Archive of Diseases in Childhood*, 81:October, pp. 324-328.
- McKibbin, Warwick J. and Andrew Stoeckel. 2003. "The Economic Cost of a War in Iraq." Washington, DC.
- Mishra, Raja. 2004. "Amputation Rate for US Troops Twice that of Past Wars." *Boston Globe*, December 9.
- National Association of State Head Injury Administrators. 2005. "Traumatic Brain Injury Facts: An Overview." <http://www.nashia.org/pdocfiles/tbioverviewfactsheetrsa.pdf>.
- National Highway Traffic Safety Administration. 1994. "Motor Vehicle Accident Costs Technical Advisory." Federal Highway Administration: Washington, D.C.
- National Highway Transportation Safety Administration. 1994. "Motor Vehicle Accident Costs Technical Advisory." Federal Highway Administration: Washington, D.C.
- National Institutes of Health. 2005. "National Diabetes Education Program, Feet Can Last a Lifetime: A Research Review." <http://www.ndep.nih.gov/resources/feet/prevent.htm>.
- Neurotrauma Registry. 2005. "Traumatic Brain Injury Statistics." <http://www.neurotraumaregistry.com/Index.cfm?file=brainstat.htm>.
- Nordhaus, William D. 2002. "The Economic Consequences of a War With Iraq." *NBER Working Paper*: Cambridge, MA.
- O'Hanlon, Michael E. 2005. "Iraq Index: Tracking Variables of Reconstruction & Security in Post-Saddam Iraq." The Brookings Institution: Washington, DC.
- Posner, Eric A. and Cass R. Sunstein. 2004. "Dollars and Death." *AEI-Brookings Joint Center Working Paper*: Washington, DC.
- Reiber, G.E., E.J. Boyko, and D.G. Smith. 1995. "Lower Extremity Foot Ulcers and Amputations in Diabetes." *National Institutes of Health, Pub. No. 95-1468*.
- Ross, Steven E., Catherine Leipold, Carol Terregino, and Keith O'Malley. 1998. "Efficacy of the Motor Component of the Glasgow Coma Scale in Trauma Triage." *Journal of Trauma-Injury Infection and Critical Care*, 45:1, pp. 42-44.



- Schlesinger, Robert. 2003. "Brain injuries take toll on US soldiers." *Boston Globe*, October 16.
- Shanmugam, K.R. 1996/7. "The Value of Life: Estimates from the Indian Labour Market." *Indian Journal of Applied Economics*, 6:3, pp. 125-136.
- Sunstein, Cass R. 2004. "Are Poor People Worth Less Than Rich People? Disaggregating the Value of Statistical Lives." *AEI-Brookings Working Paper*: Washington, DC.
- Sweeney, Emily. 2005. "Cost of Prosthetics Stirs Debate." *Boston Globe*, July 5.
- The Brookings Institution. 2005. "Iraq Index: Tracking the Variables of Reconstruction and Security in Post-Saddam Iraq."
- U.S. Department of State. 2001. "Patterns of Global Terrorism 2000."
<http://www.state.gov/s/ct/rls/pgtrpt/2000/>.
- _____. 2002. "Patterns of Global Terrorism 2001." <http://www.state.gov/s/ct/rls/pgtrpt/2001/>.
- _____. 2003. "Patterns of Global Terrorism 2002." <http://www.state.gov/s/ct/rls/pgtrpt/2002/>.
- _____. 2004. "Patterns of Global Terrorism 2003." <http://www.state.gov/s/ct/rls/pgtrpt/2003/>.
- _____. 2005. "Counterterrorism Office, Country Reports on Terrorism."
<http://www.state.gov/s/ct/rls/>.
- _____. 2005. "Iraq Relief and Reconstruction Fund (IRRF) - Status of Funds."
<http://www.state.gov/documents/organization/44292.pdf>.
- Viscusi, W. Kip and Joseph E. Aldy. 2003. "The Value of Statistical Life: A Critical Review of Market Estimates throughout the World." *Journal of Risk and Uncertainty*, 27:1, pp. 5-76.
- Woodford, Maralyn. 2005. "Trauma Scoring." *Trauma Audit Research Network*,
<http://www.tarn.ac.uk/resources/traumascoring.htm>.
- World Bank. 2003. "UN/World Bank Present Iraq Reconstruction Needs To Core Group." News Release No:2004/2103/S.



WAR AT ANY PRICE?

The Total Economic Costs of the War Beyond
the Federal Budget

A Report by the Joint Economic Committee Majority Staff
Chairman, Senator Charles E. Schumer
Vice Chair, Rep. Carolyn B. Maloney

February, 2008

Executive Summary

The long wars in Iraq and Afghanistan have cost the United States in many ways. For the American Armed Forces, the human toll has been profound: as of November 9, 2007, 4,578 American soldiers have lost their lives, and 30,205 have been wounded, many of them gravely. The damage to our international reputation at a time when the United States faces grave security challenges all over the world has also been severe. And the full economic costs of the war to the American taxpayers and the overall U.S. economy go well beyond even the immense federal budget costs already reported. These "hidden costs" of the Iraq war include the ongoing drain on U.S. economic growth created by Iraq-related borrowing, the disruptive effects of the conflict on world oil markets, the future care of our injured veterans, repair costs for the military, and other undisclosed costs.

In this report, the Joint Economic Committee estimates the total costs of the long war in Iraq to the American economy as a whole:

- The total economic costs of the wars in Iraq and Afghanistan so far have been approximately double the total amounts directly requested by the Administration to fight these wars.
- The future economic costs of a prolonged military presence in Iraq would be massive. Even assuming a considerable drawdown in troop levels, total economic costs of the wars in Iraq and Afghanistan (with the vast majority of costs a result of in the war Iraq) would amount to \$3.5 trillion between 2003 and 2017. This is over \$1 trillion higher than the recent Congressional Budget Office (CBO) Federal cost forecast for the same scenario, which counted only direct spending and interest paid on war-related debt resulting from that spending.
- The total economic cost of the war in Iraq to a family of four is a shocking \$16,500 from 2002 to 2008. When the war in Afghanistan is included, the burden to the American family rises to \$20,900. The future impact on a family of four skyrockets to \$36,900 for Iraq and \$46,400 for Iraq and Afghanistan when all potential costs from 2002 to 2017 are included.

The American people and Democrats in Congress have urged a dramatic change of course in Iraq. This war has cost Americans far too much, in terms of lives, dollars, and our reputation around the world. This report also demonstrates that a change in course would bring substantial economic savings to our country.

Through 2008, the True Cost of the War has been Double the Administration's Budgeted Cost

To date, the President has requested a total of \$607 billion for the Iraq war alone since 2003. This is over ten times higher than the \$50 to \$60 billion cost estimated by the Administration prior to the start of the war. Costs have increased every year since the start of the war in 2003. The Administration has requested \$804 billion for the Iraq and Afghanistan wars combined (CRS 2007, Bumiller 2003).¹

To provide some perspective on these figures, just the funds requested for the Iraq war through 2008 would have been sufficient to provide health insurance coverage to all of America's uninsured for the 2003-2008 period. (There were approximately 45 million uninsured Americans at the start of the war in 2003 and this number rose to 47 million by 2006, which is the latest figure available from the U.S. Census Bureau).

But even beyond these direct fiscal impacts, there are a large number of costs that do not appear directly in Administration funding requests for the Iraq war. The most important of these include the following:

- **Borrowed money to finance the Iraq War has displaced productive investment.** Since taxes have been cut and other spending has increased since the beginning of the Iraq war, it seems clear that the war has been and continues to be funded using borrowed money. The increase in government borrowing displaces substantial amounts of productive investment by U.S. businesses, thus reducing productivity in the economy over many future years. Interest costs paid by taxpayers are only a subset of these costs.
- **Substantial Iraq-related costs have been borrowed from foreigners.** The interest payments on this debt constitute a flow of funds from Americans to those foreigners who have bought our debt.

Table 1: Requested Appropriations and Total Costs Accrued So Far
Period: FY 2002-2008

	IRAQ WAR ONLY	IRAQ AND AFGHANISTAN
Direct Appropriations*	\$607 Billion	\$804 Billion
Total Costs**	\$1.3 Trillion	\$1.6 Trillion
Costs per Family of Four***	\$16,500	\$20,900

Budget costs in nominal dollars, flow of economic costs discounted to the relevant budget year. See Appendix B for discussion of methodology.

* Based on CRS and CBO cost estimates of direct appropriations. Includes Administration's FY 2008 request for war funding, which has not been passed by Congress.

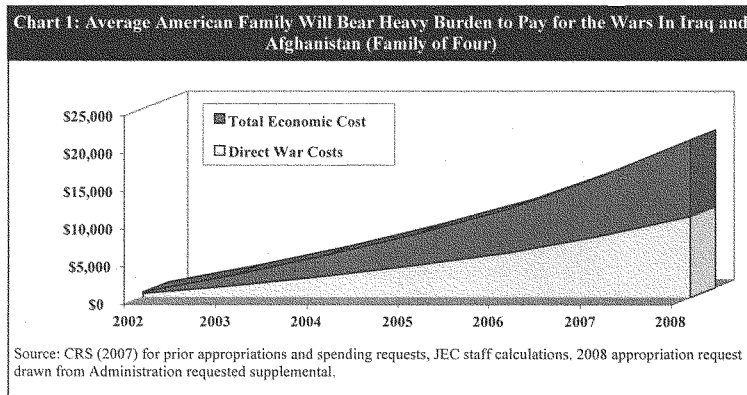
** Based on total sum of present value costs accrued in each budgetary year from 2002-2008

*** Total over 2002-2008 period.

¹ As of November 2007, the Congress had already appropriated \$449 billion of spending on Iraq, and \$609 billion for both Iraq and Afghanistan combined.

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- The war in Iraq has disrupted world oil markets leading to increased prices.** The Iraq war has occurred in a context of greatly increasing world demand for oil, as well as declining excess production capacity. Both the direct effect of the war in reducing Iraqi oil production and the indirect effect of creating greater instability in the Middle East can act to increase oil prices. Relatively small increases in oil prices can have substantial economic effects.
- Other economic and budgetary costs have grown due to the Iraq war.** These expenditures include the costs of treating the wounded and disabled, lost productivity from those injured, potential future expansions in the size of the military made necessary by the war, the costs of repair and refit for military equipment, increases in recruitment and retention costs for the military, and economic disruptions created by the deployment of the Reserves.

The sum of the costs listed above raises the economic costs of the war from \$607 billion in direct funding for the Iraq war to \$1.3 trillion. If spending in Afghanistan is included, costs could reach \$1.6 trillion by the close of FY 2008.

There are numerous other impacts of these wars that are not listed above and are difficult if not impossible to measure. These include the horrible human cost of the nearly 4,000 U.S. fatalities since the start of military operations in Iraq, the impact on our reputation and credibility throughout the world, and the budgetary and economic costs to other nations besides the U.S. (most notably Iraq). Finally, the debate over the broader national security impacts of the Iraq war, and related costs or benefits, is a complex issue that goes beyond the scope of this report (DoD 2007).

If We Don't Change Course, the Cost of the War will Balloon to \$3.5 Trillion

The costs described above represent only the impacts of the Iraq war through the close of FY 2008 (if the President's current budget requests are approved in full). Yet at least some spending on the war will continue beyond FY 2008. Assumptions about the future course of the war are necessary to forecast the full eventual fiscal and economic impacts. Because the Administration has not been clear about future plans for U.S. forces in Iraq, these assumptions must be hypothetical.

This study mainly examines potential future costs over a ten year window, up to the year 2017, similar to the budget spending window that the CBO used. The paper focuses on a scenario corresponding to the recent statement by Secretary of Defense Robert Gates that a protracted "Korea-like" presence would be required in Iraq. This scenario involves a drawdown in Iraq troop levels of 66 percent by the year 2013, and a smaller drawdown of 33 percent in Afghanistan forces. The scenario also assumes that some active conflict with insurgents continues over the period (CBO 2007a).

In recent testimony, the nonpartisan CBO detailed Federal direct appropriations and interest costs for this scenario (CBO 2007b). These CBO estimates are used as a base for the analysis in this report. Once the full economic costs of the war are added to the approximately \$2.4 trillion in Federal spending forecast under the CBO scenario, the total economic cost of the wars in Iraq and Afghanistan rise by over \$1 trillion to \$3.5 trillion.

Costs could far exceed these projections if the significant drawdown assumed in this scenario does not materialize. This CBO budgetary scenario projects that appropriations for the Iraq war

Table 2: Possible Economic Costs of Staying the Course (Through 2017)

Scenario (Troop Strength)	IRAQ WAR ONLY	IRAQ AND AFGHANISTAN
	Gradual drawdown from 2007 level of 180,000 troops to 55,000 troops by 2013. Troop strength constant from 2013-17.	Drawdown from 2007 level of 210,000 troops to 75,000 troops by 2013. Troop strength constant from 2013-17.
Direct Appropriations*	\$1.3 Trillion	\$1.7 Trillion
Total Federal Spending Including Interest**	\$1.9 Trillion	\$2.4 Trillion
Total Economic Cost***	\$2.8 Trillion	\$3.5 Trillion
Costs per Family of Four	\$36,900	\$46,400

Budget costs in nominal dollars, flow of economic costs discounted to the relevant budget year. See Appendix B for discussion of methodology.

*Based on Administration funding request for FY 2008, CRS and CBO cost estimates of direct appropriations.

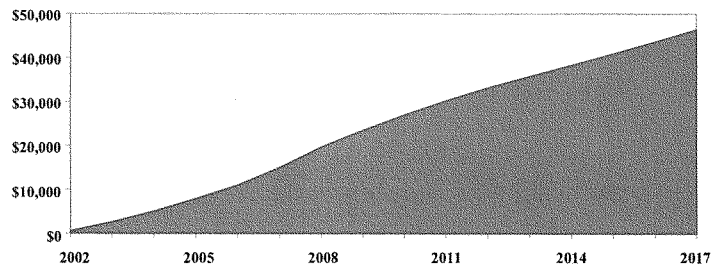
**CBO estimate from 10/24/2007 testimony to House Budget Committee (CBO 2007b).

***Based on total sum of present value costs accrued in each budgetary year over 2002-2017 period.

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Chart 2: With No Change In Course, Total Costs Incurred Per Family Reach Almost \$50,000 By 2017 (Costs For Wars In Iraq and Afghanistan)



Source: JEC staff calculation based on CRS (2007), and CBO projection of budgetary cost for "considerable drawdown" scenario.

will begin to drop significantly in 2009. But historically appropriations for the Iraq war have increased every year since the invasion, by between 12 and 40 percent annually (CRS 2007).

This report also presents costs for several alternative budgetary scenarios (Appendix A). These include costs for a rapid withdrawal from Iraq while maintaining troops in Afghanistan, and the costs to maintain current (post-surge) troop levels in Iraq for the next decade. These scenarios generate very different economic costs over the next decade. For example, maintaining post-surge troop levels in Iraq over the next ten years would result in costs of \$4.5 trillion.

Each state is assumed to bear a share of the total war costs proportional to its share of the total national economy. On this basis, the report presents total state costs accrued through FY 2008, as well as potential future costs through 2017.

Part I: Taxpayer Costs of the War

This section estimates current and future taxpayer expenditures for the war, based on budgetary information from the Congressional Research Service (CRS) and Congressional Budget Office (CBO).² The taxpayer costs can be divided into direct appropriations for the war and interest costs for Iraq-related debt. (These interest costs are a subset of the wider economic costs calculated in this report).

DIRECT APPROPRIATIONS FOR THE WAR

Prior to the start of the Iraq war in 2003, the Bush administration estimated the total cost of the war at between \$50 to \$60 billion (Bumiller 2003).

The President has now requested over ten times this initial estimate just in direct appropriations for the war between FY 2003 and 2008. If the President's latest request for supplemental funding is approved, the direct expenditures authorized specifically for the Iraq war from FY 2003 to FY 2008 will total some \$607 billion (CRS 2007; JEC estimates). This includes \$450 billion already authorized by Congress between FY 2003 and FY 2007, plus an estimated \$158 billion for Iraq from the supplemental request that the administration has made for FY 2008.³

Estimates of budgetary costs after 2008 depend on assumptions about the future course of the war. Appendix A of this report outlines costs for a variety of alternative scenarios, ranging from a rapid drawdown of troops to a continuation of post-surge funding and troop levels through the foreseeable future.

In the main body of this report, we focus on the CBO "considerable drawdown" scenario, which corresponds to the "Korea-like presence" recently predicted by Secretary of Defense Robert Gates. Following the war in Korea, force levels dropped to a level of between 50,000 and 60,000 troops throughout the 1960s and 1970s (Kane 2004). This scenario assumes that force levels in Iraq drop from their current level of 180,000 troops down to 55,000 by 2013, and are maintained at this level through 2017.

This level of drawdown implies that beginning in FY 2009 funding levels for Iraq will begin to drop for the first time in the history of the war. The scenario predicts direct appropriations for the

BOX A: HOW IS WAR IN IRAQ FUNDED?

War funding has been borrowed from the public. Since 2001, Federal government revenues as a share of Gross Domestic Product have decreased by one percent, while outlays have grown significantly and debt held by the public has increased by approximately \$1.5 trillion (CBO 2007a). In this environment of growing public debt, it seems evident that the marginal dollar spent by the Federal government has been borrowed. The characterization of the Iraq war as a "war of choice" and the funding of the war through a series of off-budget emergency supplemental bills makes this even clearer.

Given the already steep fiscal demands on the Federal government, and the Administration's unwillingness to offer a proposal to pay for the war, it is fair to assume that the future costs of the war through 2017 will also be paid for by borrowing from the public.

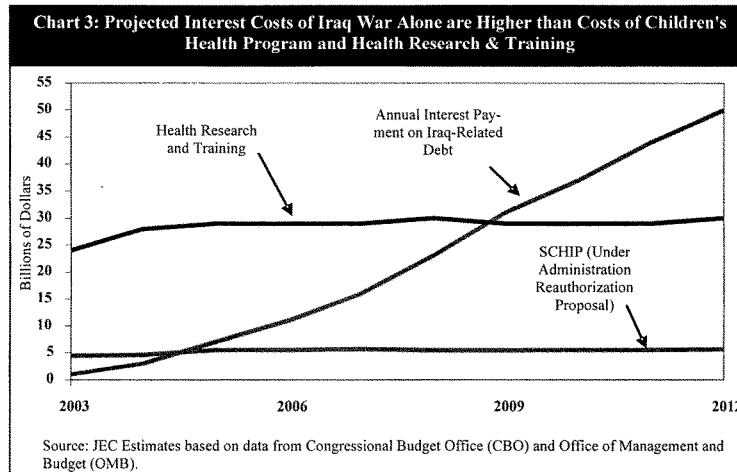
The assumption that Iraq war spending is borrowed drives a number of findings in this report. These include the level of government interest costs incurred, and also the assumption that some of the borrowed funding would have remained available for additional U.S. capital investment.

² CRS 2007; CBO 2007a and 2007b. See Appendix B for full explanation of budgetary estimates.

³ These direct budgetary costs include estimates of all of the additional spending so far for the Iraq war by the Defense Department, State Department, and the Veterans Administration, as well as reconstruction payments to Iraq.

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war drop from \$135 billion in FY 2007 to less than \$60 billion in FY 2013. For these reasons, the scenario should be seen as a conservative one. This CBO scenario implies an additional \$690 billion in Iraq war spending through 2017 (CBO 2007a).

IRAQ RELATED DEBT AND INTEREST COSTS TO TAXPAYERS

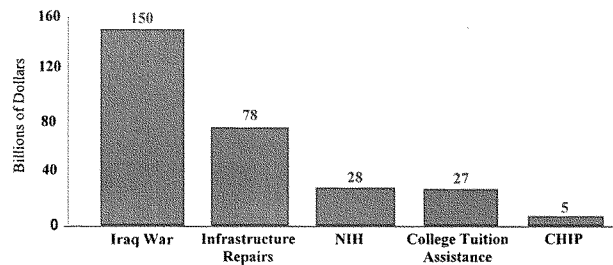
Since war costs have been borrowed, taxpayers must also pay interest costs on the war until Iraq-related debt is retired. If the president's FY 2008 budget request is fully approved, this debt will total almost \$660 billion by the close of FY 2008. It will reach almost \$1.7 trillion by the close of 2017.

This debt has many economic implications, but the immediate impact on taxpayers will be the annual interest payments required. If the President's FY 2008 supplemental request for Iraq funding is passed, almost 10 percent of total Federal government interest payments in 2008 will consist of payments on the Iraq debt accumulated so far.

Interest costs on Iraq-related debt will be over \$23 billion in FY 2008, and are projected to far exceed spending on programs that address key national priorities such as education and health. Chart 3 shows the current and projected future time path of interest spending through 2012. The chart shows that the annual interest costs on accumulated war debt already far exceed spending for such national priorities as health insurance for children (under the proposed Democratic SCHIP expansion recently vetoed by the President) and health research.

Under the "considerable drawdown" scenario, by the year 2017 projected interest costs on Iraq-

Chart 4: Taxpayer Spending on Iraq War vs. Federal Spending on Other Priorities (FY 2007)



Source: Budget of the United States Government Fiscal Year 2008, JEC staff estimates based on CRS budgetary figures; Estimated interest costs for Iraq debt

related debt will rise to \$80 billion annually. The sum of interest paid on Iraq-related debt from 2003-2017 will total over \$550 billion.

These interest costs are based on the assumption that interest rates will remain constant at a rate of 4.5%. Interest payments could grow significantly compared to this forecast if interest rates rise in the future.

Interest costs will continue to accrue beyond 2017 so long as the debt is not paid down. Paying down the debt will require cuts in government spending and/or increases in taxes. Alternatively, interest payments can simply be continued after 2017. Because this report projects costs accrued only through 2017, economic effects of the choices made about handling the debt after 2017 are not reflected in these estimates. It is assumed that the debt remains outstanding through the end of the forecast period.

TOTAL TAXPAYER COSTS

Total taxpayer spending is the sum of direct budget costs and interest costs. The total increase in taxpayer spending over 2003-2017 due to the Iraq war is a projected \$1.9 trillion under the "considerable drawdown" scenario. If declines in future spending projected by CBO do not materialize, war spending could be substantially higher than forecast here (this issue is discussed further in Appendix A).

To put annual spending on the war in perspective, it is useful to consider the spending on other national priorities that could be funded by just one year of Iraq spending. Chart 4 shows how Iraq funding just in the recently completed 2007 fiscal year compared to spending on various other public investment priorities. The FY 2007 total of \$150 billion is greater than the combined sum of Federal spending on such priorities as the nation's transportation infrastructure, health research,

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customs and border protection, higher education aid, environmental protection, Head Start, and the CHIP program.

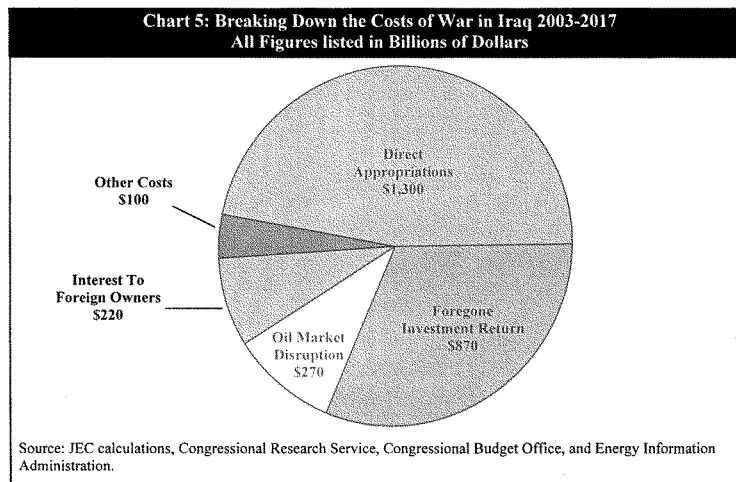
Should the President's recent supplemental request be fully approved, total taxpayer spending for Iraq would be even higher in FY 2008, approximately \$180 billion or \$500 million per day.

Part II: Additional Economic Costs

The budgetary costs alone of the war are high. But there are many additional economic costs of the war that go beyond the direct budgetary costs. In terms of magnitude, the most significant economic costs are:

- Displacement of productive investment by U.S. companies due to increases in government borrowing.
- Interest payments to foreign capital owners for Iraq-related debt.
- Impact of the war on oil markets.

In addition, there are a number of other, smaller, costs that we discuss below. Chart 5 shows the estimated division of all economic costs from the Iraq war alone.



THE EFFECT OF GOVERNMENT BORROWING

As discussed above, the Iraq war has likely resulted in major increases in government borrowing. There is widespread consensus among economists that such borrowing has two effects (Friedman, 2005):

- First, it reduces the growth in productive private investment in the economy. Funds are diverted from private investment to purchase government securities. This depresses the future stock of productive capital below what it otherwise would have been without the borrowing.
- Second, part of the debt is funded through borrowing from foreign capital owners. Interest payments on this debt flow out of the country and constitute an economic cost.

Both of these effects have costs to the U.S. economy. For government borrowing that fully displaces productive investment, all the future returns on this capital investment are lost. The future growth rate of the economy is reduced.

For government borrowing that is funded from world capital markets, investment is not displaced, but interest payments on this debt flow out of the economy to foreigners. (Interest payments to U.S. bond purchasers are a subset of the economic costs from displaced private investment in the U.S.).

Although there is little dispute that both of these impacts occur to some extent, the exact balance between the two effects and the proper way to evaluate them is a subject of some controversy among economists. Appendix B describes the assumptions used in this report to estimate the economic costs of Iraq-related deficit spending.

Because of these two economic impacts, the JEC estimates that Iraq-related borrowing between 2003 and 2017 will create an additional income loss of almost \$1.1 trillion in present value to U.S. citizens.⁴

This loss of investment returns is the single largest cost of the Iraq war to the U.S. economy beyond the direct budgetary cost of the war itself.

IMPACT ON WORLD OIL MARKETS

Iraq is a significant oil producer, and is also located in a strategically vital region which is the center of world oil production. Since the start of the Iraq war in 2003, the price of oil has increased, from \$37 per barrel (in the week prior to the war) to a recent peak of well over \$90 per barrel in November 2007 (EIAa). This price increase has likely affected U.S. economic growth, and has transferred many hundreds of billions of dollars from U.S. consumers to foreign oil producers.

The war in Iraq is certainly not responsible for all of this increase. Many other factors are also affecting oil prices, including large growth in oil demand from China and India. But the consistent disruptions resulting from the war have affected oil prices.

⁴ This is the present value of the lost returns to investments that did not take place due to the diversion of capital into Iraq war spending, as well as the present value of post-tax returns to investments that were funded with foreign capital. The assumptions used to generate this estimate are further described in Appendix B.

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The Iraq War and Oil Prices

The war in Iraq has two potential effects on world oil markets. The first is a direct effect, stemming from disruption in Iraqi oil exports to the world market. The second is an indirect psychological effect.

The direct effect can be examined by considering Iraqi oil exports compared to capacity. The Energy Information Administration has stated that current Iraq production of roughly 2 million barrels per day (BPD) is "down from around 2.6 million BPD of production and a nameplate capacity of 2.8 to 3 million BPD in pre-invasion January, 2003." (EIA 2007c).

Taking the EIA estimate of 2.6 million BPD of actual pre-war production, the reduction in direct Iraqi oil production has ranged from roughly 1.3 million BPD (in the invasion year of 2003) to about 600,000 BPD today. These shortfalls likely impact world oil prices. As a CBO report discussing oil market developments from 2003-2006 stated:

"Today, however, worldwide production is close to its short-term limits. As a result, oil markets appear much more vulnerable than before to an interruption in supply or a rapid increase in demand. Even the threat of a reduction in supply of a few hundred thousand barrels a day causes sharp fluctuations in prices" (CBO 2006).

As a rule of thumb, the Department of Energy estimates that a 1 percent decline in world oil supply generally leads to about a 10 percent rise in prices (EIA 2004, GAO 2006). Using this rule leads to the prediction that shortfalls of the levels discussed above might be expected to increase oil prices by around 15% in 2003, and 7-9% in 2004-2007. Because of rising prices, this percentage increase creates a consistent rise in the price of oil of roughly \$5.00 per barrel. The Iraq war could have a second, indirect effect on oil prices if events in Iraq have led to concerns about wider regional conflict, or increases in terrorism in the region that could affect oil fields. These kinds of fears would cause investors to bid up the price of oil on futures markets, and increase the stockpiles of oil they hold against an emergency.

BOX B: MARKET PSYCHOLOGY

A recent CRS report on world oil prices singled out the Iraq war as having an important impact on market psychology:

"The war in Iraq has contributed to high oil prices in different ways as events have progressed. The predominant effect of the conflict on oil prices has been an increase in uncertainty. During the early stages of the conflict, concerns about a possible disruption of oil supply out of the Persian Gulf and disruption of Iraqi production due to military operations were prominent....Later, market uncertainty revolved around the ability of Iraq to export oil in the midst of political transition in which pipeline and other oil facilities were attacked by hostile groups within the country. Uncertainty with respect to terrorist attacks, both in Iraq, and spilling over to other Gulf nations, including Saudi Arabia, continue to unsettle the oil market and contribute to a "fear factor" being built into the price of oil." (CRS, 2005)

It seems likely that indirect psychological factors related to the Iraq war did contribute to increases in oil prices in 2003, and been one of several factors contributing to oil price volatility since then.

It is hard to quantify the size of this effect on prices. But it seems clear that the Iraq war has been one factor contributing to a generally unsettled state of oil markets over the past several years. This is due to the combination of the timing of the war during a period when world oil markets have been under unusual stress from increased demand, and the psychological effects of the increased geopolitical uncertainty due to the war. The combination of direct and psychological effects helps to support the price effect discussed above.

The Economic Impact of Higher Oil Prices

What impact does this increase in oil prices have on the U.S. economy? There are two separable effects. The first impact is a direct transfer to wealth from U.S. consumers to foreign oil producers driven by the rise in oil prices. This estimated effect can be counteracted somewhat by reductions in oil consumption by consumers or if foreign oil profits are spent in the U.S. JEC estimates find that from 2003-2008 this effect will transfer approximately \$124 billion from U.S. oil consumers to foreign producers.⁵

Most economists agree that there is likely a further impact of oil price increases on the economy. Beyond any direct transfer effect, oil price shocks reduce economic growth, due to reductions in consumer demand and various adjustment costs by industries that use oil. However, there is substantial controversy over the exact size of the effect. It is generally agreed that these economic impacts of oil price increases have declined in today's economy as compared to the 1970s (Nordhaus 2007). Estimates using macroeconomic simulation models often find small costs (CBO 2006). However, estimates based on examining the actual past responses of the U.S. economy to oil price changes often find much larger impacts, ranging from five to fifteen times those found in model-based estimates.

It seems likely that the impact varies substantially depending on the exact type of oil price shock and how it is sustained, with sharp, surprising increases in oil prices having the largest negative effects on growth, and slow and expected increases having smaller or potentially no effect (Li, Ni, and Ratti 1995; Huntington 2005). But the Iraq war has produced a consistent series of surprises as the insurgency has grown, unforeseen interference with oil fields has continued, and new political disruptions have occurred (such as tensions with Iran and conflict between Kurdistan and Turkey). As discussed above, this has taken place in an environment of limited spare production capacity, and new peaks in world oil prices almost every year.

For this reason, the analysis assumes that Iraq-related oil price increases have had a wider economic effect. In particular, the analysis assumes a consistent effect throughout the 2003-2008 period that is proportional to the roughly \$5 per barrel price increase described above. However, no further economic impacts from rising oil prices are assumed for 2009 or after.⁶ The magnitude of

⁵ This is based on the assumption of a -0.1 elasticity for oil consumption by U.S. energy consumers and a recycling of 10% of foreign oil revenues into the U.S. economy.

⁶ Such additional impacts in 2009 and following years are in quite possible, but since they cannot be reasonably predicted they have not been included in the analysis.

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the GDP impact is assumed to be moderate to low. It is consistent with a wide range of recent studies.⁷

Under these assumptions, oil price increases from 2003-2008 due to the Iraq war reduced total U.S. income GDP by a total of approximately \$274 billion, a direct transfer of about \$124 billion and a further GDP effect of \$150 billion.

OTHER ECONOMIC IMPACTS

There are numerous other costs of the wars in Iraq and Afghanistan that are not reflected in budget estimates. However, these impacts are even more difficult to estimate than the costs discussed above. They are also generally somewhat smaller than the impacts discussed above. The JEC estimates that a fuller accounting of these impacts would add at least \$110 billion to the total future costs of the two wars.

The Impact of Wounds and Disabilities

One such economic impact is the costs of care for wounded and disabled veterans. Some 28,000 troops have been wounded in Iraq through October 2007 and almost half could not be returned to duty within 72 hours (DoD 2007). Should the war continue through 2017, it is reasonable to expect additional casualties.

Estimates of the costs of disability compensation and medical care for these injured veterans vary significantly. CBO has estimated the direct Federal cost of disability payments and medical care for Iraq War veterans over the 2003-2017 period (CBO 2007b). This estimate of approximately \$10 billion is included in the budgetary estimates given above. The cost rises to \$13 billion when Afghanistan veterans are included.

Other estimates of the entire eventual economic costs of disability among all Iraq war veterans are far higher than CBO, running as high as several hundred billion dollars (Bilmes 2007). But these estimates may not fully separate out the incremental impact of the Iraq war. Some veterans would likely have incurred disabilities during their army service even if they served during peacetime. Further study is needed to determine the full increment in injury and disability to veterans serving in wartime as opposed to peacetime.

But it is still likely that the CBO estimate underestimates the total economic cost experienced due to injuries or disabilities created by the war. Since the CBO cost estimate runs only through 2017, it does not include the full lifetime cost of care for these injured veterans. In addition, CBO may have underestimated the number of veterans not wounded in action who will eventually seek disability benefits or medical care due to war-related health issues. Finally, there is evidence that veterans disability benefits do not always fully compensate for earnings losses due to certain conditions.

⁷ Specifically, the assumption is that a 10 percent rise in oil prices reduces GDP by two-tenths of one percentage point. This produces GDP impacts consistent with the recent Global Insight simulation of a \$10 rise in oil prices (Huntington, 2005). It is smaller than the effect found in a recent literature survey by Jones, Leiby and Paik (2004) and the most recent study by Hamilton (2004), who both estimate an impact of between five and sixth tenths of a percentage point of GDP per ten percent rise in oil prices. However, this GDP impact is somewhat larger than that estimated by the Congressional Budget Office (2006).

The types of injuries and disabilities sustained in the war add to the uncertainty about future medical costs. As battlefield medical care has advanced, the number of seriously injured soldiers who survive their wounds has increased. Iraq therefore has a higher ratio of wounded to fatalities than previous wars, and the severity of wounds has correspondingly increased (CBO 2007d). For example, about 800 wounded soldiers have been injured severely enough to require amputations.

In addition, the widespread use of improvised explosive devices by insurgents has led to a high incidence of traumatic brain injury (TBI) among both wounded troops and those soldiers who survive explosions without other injuries. A recent estimate is that 10 to 20 percent of returning soldiers who believed themselves to be healthy had in fact experienced mild to moderate TBI (PCCWW 2007). The future potential health impacts and costs of TBI (especially in its mild to moderate form) are not yet well understood.

Post-traumatic stress disorder (PTSD) is another important health issue related to the Iraq conflict. This psychological reaction to traumatic stress appears to affect a substantial number of returning soldiers. Estimates indicate that between 10 and 20 percent of returning soldiers show at least some symptoms of the disorder (Hoge et. al 2007; PCCWW 2007). Some 40,000 returning soldiers have already received an official diagnosis (CBO 2007d). Research on the economic effects of PTSD indicates that it can lead to substantial reductions in earnings and employment capacity (Veterans Commission 2007; Savoca and Rosenheck 2000). Advances in treatment have been made, but there is still a great deal of uncertainty about the future economic impacts of this disorder and the number of veterans who will eventually be affected.

The JEC estimates that these factors are likely to add \$25 billion to the total economic costs of injury in the Iraq war, beyond the 2003-2017 costs projected by CBO:

- A projection of the present value of the lifetime disability and medical care costs for injured veterans beyond 2017 gives a result of approximately \$11 to \$15 billion in additional expenses for the Iraq war.⁸ When the cost of the Afghanistan war is included, this rises to about \$13 to \$17 billion.
- There are additional economic costs of injury that are not reflected in VA disability benefits or medical expenses. One of these is earnings losses that are not fully compensated for by disability benefits. As estimate of earnings losses related to PTSD alone finds an additional \$10 billion in lost earnings to Iraq veterans that are not reflected in VA benefits.⁹
- The families of injured veterans expend considerable time and effort to provide care for their loved ones. This can have significant economic costs. A survey by the Dole-Shalala commission found that almost 20% of injured veterans stated a family member had to quit a job to provide care for them. This implies additional economic costs potentially as high as \$1 billion.
- Future disabilities resulting from past wars have typically been underestimated early in the conflict (Veterans Commission 2007). However, at this time it is very difficult to project what level of additional disabilities beyond CBO forecasts may result from the Iraq war.

⁸ Based on projecting the present value of CBO disability and medical care costs for the year 2017 over an additional 30 years, with an adjustment for the proportion estimated to come from Iraq. The exact figure depends on what the starting year of discounting is; discounting to 2008 dollars produces the \$9 billion figure, while discounting to 2017 dollars yields a \$12 billion cost.

⁹ See Appendix B. The cost rises to \$12 billion when Afghanistan veterans are included.

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These costs do not represent the total cost of injuries and disabilities to veterans. Instead they represent only the additional economic costs not already included in estimated Federal spending on injured veterans and should be understood as highly conservative.

Additional Military Costs

Between 2003 and 2006 alone, the cost of retention bonuses and re-enlistment incentives for the Army, Marines, Reserve, and National Guard have skyrocketed, rising by \$800 million annually (Associated Press 2007). If these increased costs stayed constant over the 2003-17 period, they would add \$13 billion to military budgets over the period. These costs are not reflected in the budgetary costs previously mentioned.

The military and other sources have also estimated a variety of potential repair and reset costs for replacing and repairing equipment damaged in the Iraq conflict. Iraq-related reset costs in the FY 2007 military budget alone totaled some \$27 billion (DoD 2007). This figure is included in the budgetary costs already totaled previously.

However, the Department of Defense estimates that approximately \$40 billion in reset costs will be required after withdrawal from Iraq (DoD 2007). These future costs are not included in the budget estimates described previously, and therefore they are added under "additional costs".¹⁰

Finally, the Administration has requested a significant long-term increase in the number of enlisted personnel in the Army and Marine Corps (CBO 2007e). This increase will eventually total 65,000 additional troops for the Army and 27,000 additional for the Marine Corps. The CBO calculated costs of approximately \$17 billion annually for this expansion between 2008 and 2012. But these costs were not included in CBO tallies of the costs of the Iraq or Afghanistan wars, since the Administration has not justified this proposed increase in the size of the military solely with reference to these wars (CBO 2007e).

However, it seems clear that the wars in Iraq and Afghanistan have contributed to the need for an expansion in the size of the military. For this reason, the JEC analysis adds one-quarter of the estimated cost of this increase in military forces (or \$4.25 billion annually) as an additional cost of the war beginning in 2009. This is a conservative estimate of the level of increase in military forces that could be required by these wars.

These additional military costs add approximately \$85 to \$90 billion to total war costs for Iraq and Afghanistan combined. Based on the split in force levels between Afghanistan and Iraq going forward, the report assigns 80 percent of this total, or about \$70 billion, to the Iraq war.

Costs of National Guard and Reserve Deployments

Some half a million of the National Guard and Reserve have so far been deployed in Iraq. Some of the costs of this mobilization are reflected in government budgetary costs. But some are not, including the disruption for employers created by the loss of staff.

¹⁰ CBO has raised some question over how much of the repair, reset, and reconditioning costs related to Iraq are in fact purchases of new equipment that was not made necessary by the Iraq war (CBO 2007f). However, in this report we accept the DOD estimate.

ADDITIONAL (UNQUANTIFIED) IMPACTS OF THE IRAQ WAR

This report does not attempt to quantify any demand-side macroeconomic effects of war spending on the economy. Because the war began in the wake of the 2001 recession, some of the war spending could have worked to close a small part of the recessionary gap between potential and realized production. However, the bulk of the war spending took place well after the recession and any additional demand-side macroeconomic effects (difficult to estimate in any case) are not likely to be large with respect to the ongoing effects of war spending on the economy.

The over 3,800 American fatalities that have resulted from the war so far are a tragedy that is difficult to quantify in economic terms. These losses can be seen as creating a direct economic effect of many billions of dollars in lost productivity and creativity for the nation. To this must be added the psychological costs of the loss to loved ones, families, and communities. The national security and foreign policy impacts of the war are beyond the scope of this study. Finally, the impact of the war on the nation of Iraq is also beyond the scope of the report.

Part III: State-by-State Cost Estimates for the War

War costs can also be expressed in terms of the costs to each U.S. state. Table 3 shows the budgetary costs and total economic costs divided between all fifty states, in proportion to each state's share of the Federal tax burden. Each state's share of total economic costs is also shown, divided in proportion to their share of national GDP. (States will incur the full economic costs of the war in proportion to their share of the economy). State shares of total costs vary from \$358 billion in California to \$5.5 billion in Wyoming.

Conclusion

The direct appropriations alone devoted to the Iraq war are staggering. President Bush has already requested Iraq war appropriations over ten times his original pre-war cost estimate. The President's appropriations request for FY 2008 for Iraq alone exceeds total U.S. state, local, and Federal spending on our entire surface transportation system. Yet this report has demonstrated that the indirect costs to the American economy are roughly twice these direct appropriations.

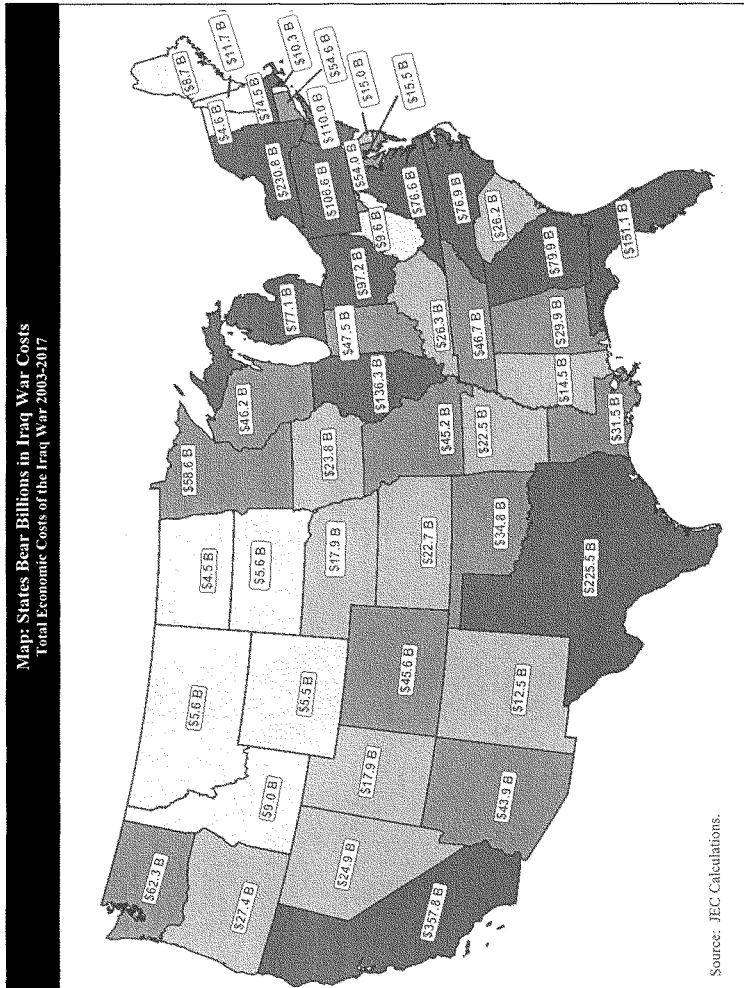
If the President's supplemental funding request for FY 2008 is approved, the accrued costs to the economy accrued through 2008 for the wars in Iraq and Afghanistan through FY 2008 will exceed \$1.6 trillion. This is over \$20,000 per family of four.

Yet the costs that we will incur if the war continues are far greater. Even assuming the optimistic scenario of a significant drawdown in troop strength and no further impacts on oil markets, a continuation of the war through 2017 will lead to total economic costs for Iraq and Afghanistan of some \$3.5 trillion over the 2003-17 period under the considerable drawdown scenario.

Table 3: State-by-State Breakdown of Total Iraq War Economic Costs

State	Costs 2003-2008 (Billions)			Costs 2003-2017 (Billions)		
	Budgetary	Economic	Total	Budgetary	Economic	Total
United States	\$600	\$700	\$1,300	\$1,300	\$1,470	\$2,770
Alaska	\$1.0	\$2.2	\$3.2	\$2.2	\$4.6	\$6.8
Alabama	\$5.5	\$8.5	\$14.1	\$12.0	\$18.0	\$29.9
Arkansas	\$5.7	\$4.9	\$10.5	\$12.3	\$10.3	\$22.5
Arizona	\$8.3	\$12.4	\$20.7	\$18.0	\$26.0	\$43.9
California	\$76.0	\$92.0	\$168.0	\$164.7	\$193.1	\$357.8
Colorado	\$9.2	\$12.3	\$21.4	\$19.9	\$25.8	\$45.6
Connecticut	\$14.7	\$10.9	\$25.5	\$31.7	\$22.8	\$54.6
District of Columbia	\$2.6	\$4.7	\$7.3	\$5.7	\$9.8	\$15.5
Delaware	\$3.8	\$3.2	\$7.0	\$8.3	\$6.7	\$15.0
Florida	\$32.9	\$38.0	\$70.9	\$71.3	\$79.8	\$151.1
Georgia	\$17.3	\$20.2	\$37.5	\$37.5	\$42.4	\$79.9
Hawaii	\$1.9	\$3.1	\$5.0	\$4.2	\$6.5	\$10.7
Iowa	\$4.6	\$6.6	\$11.2	\$10.0	\$13.9	\$23.8
Idaho	\$1.6	\$2.7	\$4.2	\$3.4	\$5.6	\$9.0
Illinois	\$32.5	\$31.4	\$63.9	\$70.4	\$65.9	\$136.3
Indiana	\$9.1	\$13.3	\$22.3	\$19.7	\$27.8	\$47.5
Kansas	\$4.7	\$5.9	\$10.7	\$10.3	\$12.5	\$22.7
Kentucky	\$4.6	\$7.8	\$12.4	\$10.0	\$16.3	\$26.3
Louisiana	\$4.6	\$10.3	\$14.8	\$9.9	\$21.6	\$31.5
Massachusetts	\$17.0	\$18.0	\$34.9	\$36.8	\$37.7	\$74.5
Maryland	\$11.6	\$13.7	\$25.4	\$25.2	\$28.8	\$54.0
Maine	\$1.6	\$2.5	\$4.1	\$3.4	\$5.3	\$8.7
Michigan	\$15.9	\$20.3	\$36.2	\$34.5	\$42.6	\$77.1
Minnesota	\$14.4	\$13.0	\$27.4	\$31.2	\$27.3	\$58.6
Missouri	\$9.2	\$12.0	\$21.2	\$20.0	\$25.3	\$45.2
Mississippi	\$2.4	\$4.5	\$6.9	\$5.1	\$9.4	\$14.5
Montana	\$0.9	\$1.7	\$2.6	\$2.0	\$3.6	\$5.6
North Carolina	\$16.2	\$19.9	\$36.1	\$35.1	\$41.9	\$76.9
North Dakota	\$0.7	\$1.4	\$2.1	\$1.6	\$2.9	\$4.5
Nebraska	\$4.3	\$4.0	\$8.4	\$9.4	\$8.5	\$17.9
New Hampshire	\$2.5	\$3.0	\$5.5	\$5.4	\$6.3	\$11.7
New Jersey	\$27.4	\$24.1	\$51.5	\$59.3	\$50.7	\$110.0
New Mexico	\$1.8	\$4.0	\$5.9	\$4.0	\$8.5	\$12.5
Nevada	\$5.4	\$6.3	\$11.7	\$11.7	\$13.2	\$24.9
New York	\$53.8	\$54.4	\$108.2	\$116.6	\$114.2	\$230.8
Ohio	\$21.0	\$24.6	\$45.6	\$45.6	\$51.6	\$97.2
Oklahoma	\$9.1	\$7.2	\$16.3	\$19.7	\$15.1	\$34.8
Oregon	\$4.8	\$8.1	\$12.9	\$10.5	\$16.9	\$27.4
Pennsylvania	\$22.9	\$27.2	\$50.0	\$49.6	\$57.0	\$106.6
Rhode Island	\$2.4	\$2.4	\$4.8	\$5.2	\$5.1	\$10.3
South Carolina	\$4.4	\$7.9	\$12.3	\$9.5	\$16.7	\$26.2
South Dakota	\$0.9	\$1.7	\$2.6	\$2.0	\$3.6	\$5.6
Tennessee	\$9.3	\$12.7	\$21.9	\$20.0	\$26.6	\$46.7
Texas	\$49.1	\$56.7	\$105.8	\$106.3	\$119.2	\$225.5
Utah	\$3.2	\$5.2	\$8.4	\$7.0	\$10.9	\$17.9
Virginia	\$16.3	\$19.7	\$36.0	\$35.4	\$41.3	\$76.6
Vermont	\$0.9	\$1.3	\$2.2	\$1.9	\$2.7	\$4.6
Washington	\$13.6	\$15.6	\$29.3	\$29.5	\$32.8	\$62.3
Wisconsin	\$9.6	\$12.1	\$21.7	\$20.8	\$25.4	\$46.2
West Virginia	\$1.6	\$3.0	\$4.5	\$3.4	\$6.2	\$9.6
Wyoming	\$1.0	\$1.6	\$2.6	\$2.2	\$3.3	\$5.5

Sources: Budgetary and Economic Costs derived from JEC calculations based on data from the U.S. Census Bureau, Congressional Budget Office and Office of Management and Budget.



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We have already experienced massive economic costs due to our failed strategy in Iraq. The nation will experience even more significant costs if we do not change course.

The Economic Burden of The Iraq War

The economic costs calculated in this report are a conservative estimate of the potential costs to the U.S. economy if we do not change course in Iraq. This study does not include such unquantifiable impacts as the cost of thousands of U.S. fatalities in these wars or the effect of the Iraq war on U.S. international prestige and security. The report assumes no oil market impacts of a continued Iraq occupation beyond 2008. The report uses conservative economic assumptions throughout, especially for the economic burden of injuries and disabilities resulting from the war. Finally, the report focuses on costs for a future scenario that assumes a substantial reduction in troop levels and budgetary costs of the war.

Despite these conservative assumptions, the economic cost of the war so far is already well over a trillion dollars. The combined costs of the wars in Iraq and Afghanistan is forecast to climb to some \$3.5 trillion over the next decade if the occupation of Iraq is maintained. This will be true even if a considerable drawdown takes place and annual direct appropriations for the Iraq war decline by more than half over the next five years. By any measure, the economic costs of continuing our current course in Iraq would be enormous.

Appendix A: Costs of Alternative Scenarios

War costs through 2007 can be directly calculated. In this study, war costs for FY 2008 were estimated by taking the figures in the President's supplemental spending request, as allocated by the Congressional Research Service.

Cost projections for FY 2009-17 require forecasting the future course of the war. The main body of the report focused on the CBO's "moderate drawdown" scenario to project future costs. This "moderate drawdown" scenario assumes a 64% drop in the number of troops in Iraq by 2013, and constant force levels from 2013-17. The scenario implies a sharp decline in war costs beginning in 2009.

This appendix supplements this scenario with two others. The first is a "sharp drawdown" scenario under which forces in Iraq are rapidly reduced to 10,000 by 2010, and withdrawn altogether by 2011. This scenario corresponds roughly to withdrawal scenarios advanced by House Democrats. The underlying budgetary figures are based on CBO fiscal estimates for a sharp drawdown scenario, with costs in later years assumed to occur entirely in Afghanistan and not in Iraq. FY 2008 funding is assumed to be somewhat lower than the President's request. The future costs for disabilities, as well as additional military costs such as recruitment, force expansion, and repair, are also assumed to be a total of \$35 billion lower under this scenario.

The second is a "no drawdown" or "status quo" scenario which assumes post-surge cost levels for the war continue throughout the budget window until 2017. This scenario corresponds to an indefinite continuation of the war. To perform this estimate, JEC staff adopted a CBO estimate of FY 2009 costs. At \$121 billion per year, this estimated spending would still be over \$10 billion lower than Iraq war spending in FY 2007, and over \$30 billion lower than FY 2008 spending will be if the President's supplemental is approved. (It would thus represent the first annual decline in Iraq spending since the start of the war). The "no drawdown" scenario then assumes this spending stays constant in real terms (adjusted for a 2% inflation level) through 2017. This reflects a continued commitment of 155,000 troops to the occupation of Iraq. The costs for disabilities, as well as additional military costs such as recruitment, force expansion, and repair, are also assumed to be a total of \$35 billion higher under this scenario.

Table A-1 and Chart A-1 show force levels and total costs in Iraq and Afghanistan for all three scenarios. Because such a large amount of war costs have already been incurred, all of the scenarios show large total expenses for the war. (For example, all three scenarios require continued interest payments on war-related debt accumulated so far). However, the difference between the "sharp drawdown" and "no drawdown" scenarios amounts to a savings of approximately \$2 trillion in total economic costs incurred between 2003 and 2017.

Table A-1: Descriptions and Costs of Alternative Future Scenarios

Scenario	Troop Levels in Iraq and Afghanistan		Estimated Total Economic Costs (2003-2017)	
	2007	2008-2017	Iraq and Afghanistan	Iraq Only
No Drawdown (Status Quo)	210,000 (180,000 in Iraq)	Reduction to 180,000 troops total (155,000 in Iraq) by FY 2009. No further reduction.	\$4.5 Trillion	\$3.5 Trillion
Considerable Drawdown (Korea-like Presence)	210,000 (180,000 in Iraq)	Gradual reduction to 75,000 troops total (55,000 in Iraq) by 2013. This force strength maintained through 2017.	\$3.5 Trillion	\$2.8 Trillion
Sharp Drawdown (House Democratic Plan)	210,000 (180,000 in Iraq)	Rapid reduction to 30,000 troops total (10,000 in Iraq) by 2010. Full withdrawal from Iraq after 2010; 20,000 troops maintained in Afghanistan	\$2.6 Trillion	\$1.7 Trillion

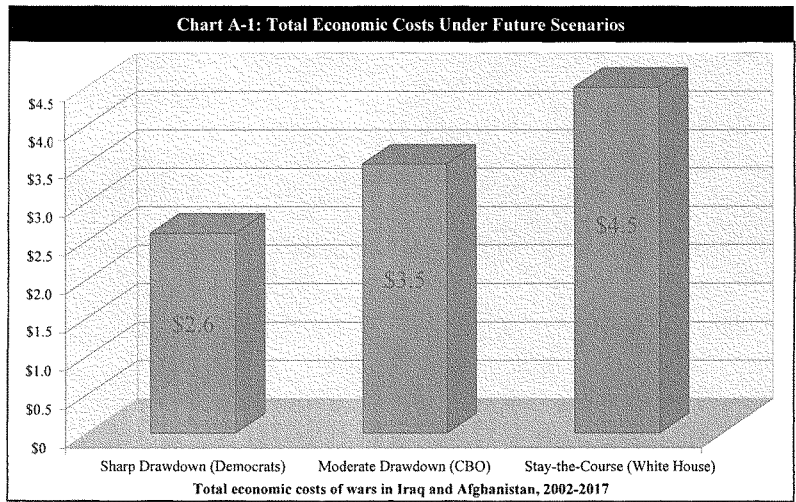
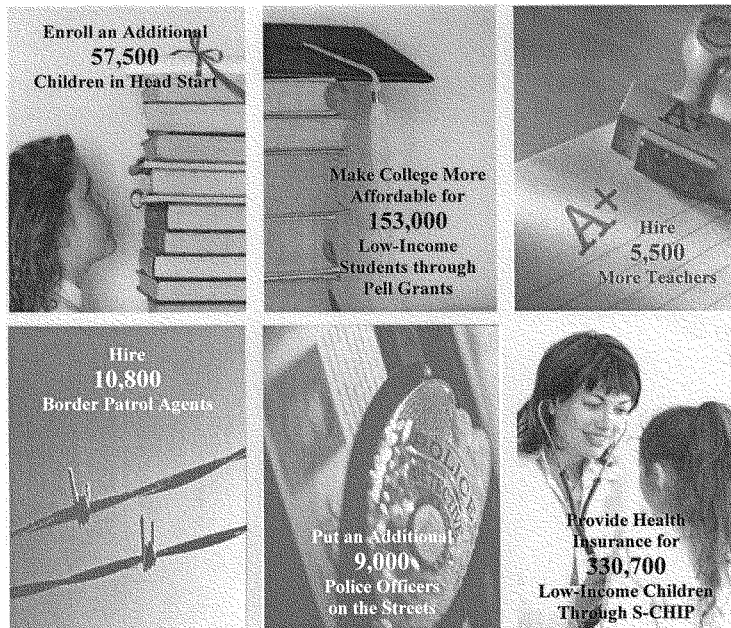


Table A-2 Alternative Ways to Spend the \$435 Million We Spend In Iraq Every Day

	Current Enrollment per Year	Potential Enrollment
People Insured through SCHIP	6,400,000	330,700
Head Start Participants	909,200	57,500
Pell Grants	5,000,000	153,000
Border Patrol Agents	17,800	10,800
State and Local Police	624,400	9,000
Teachers	215,600	5,500

Sources: Expect More Data (expectmore.gov), Congressional Budget Office Data (cbo.gov) and the President's FY 2008 Funding Requests for Appropriations



Appendix B: Methodology

The Economic Cost Concept

Conceptually, economic costs in this paper are the sum of all costs to taxpayers, plus additional costs to Americans that are not reflected in government budgets. To be a valid measure of total costs, this method requires the assumption that costs to taxpayers exactly reflect the true resource cost of the goods or services being purchased by government.

Of course, this assumption may not be completely true. Some government costs may include, for example, profits in excess of normal rates of return for government contractors. In many analyses of overall economic costs these profits would be scored as transfers and not costs at all (they would act as offsetting benefits to government costs). But in this case the results of adopting such a technique would be misleading and counterintuitive. For example, if profits were scored as transfers, this would imply that cases of contractor fraud in which Americans earned large profits by cheating the government would reduce the overall costs of the Iraq war to the taxpayer.

Because of the assumption that government costs reflect true resource costs, those resource costs that appear in government budgets are not counted twice. To take one example, when disability payments to injured veterans make up for part or all of their lost earnings, these lost earnings are not counted again in economic costs.

Calculations of Budgetary Spending

Figures from the Congressional Research Service (CRS) were used to determine the total amounts expended on the Iraq and Afghanistan wars through the close of 2007, and also in the President's 2008 supplemental request (CRS 2007).¹¹

Budgetary figures for 2009 and after were drawn from testimony by the Congressional Budget Office (CBO). These figures are drawn from Tables 5 through 7 of Robert Sunshine's testimony to the House Budget Committee in July, 2007. They are increased by 10% to reflect higher levels of spending than expected at that time. (This increase is explained in CBO director Peter Orszag's testimony before the House Budget Committee in October 2007). The scenario used in the main body of the report corresponds to Scenario 2 in this CBO testimony, with the 12-month sustained surge option assumed. Based on discussions with CBO staff, 80% of these budgetary costs are assumed to be incurred in the Iraq war.

The two other scenarios described in Appendix A also draw on these CBO budgetary figures, but are modified as described in Appendix A.

Accrued Costs of Foregone Investment

The accrued costs of foregone investment related to borrowed funds are estimated using a shadow cost of capital approach. This approach converts lost investment into the present value of a stream of future consumption. There is substantial agreement that this approach is theoretically correct (Cline 1992). However, there are a variety of methods to calculate the shadow cost. Some methods can have results that depend heavily on assumptions (Lyon 1990).

This report uses a comparatively stable and conservative means for calculating the shadow cost of capital, that is less fragile to assumptions than other methods. The description and justification for the technique is outlined in Cline (1992). This method involves summing the real present value of total returns to capital

¹¹ These figures differ slightly from CBO figures, as CBO is willing to leave some costs unallocated to either Iraq or Afghanistan while CRS analysts allocate the entire amount to a specific war.

over a 15 year time horizon. Capital investment returns are calculated using the marginal pre-tax return to private investment, and discounted by the social rate of time preference. All of the capital return is assumed to be consumed, except for whatever share is necessary to compensate for depreciation.

The key assumptions involved are:

1. The amount of borrowed money that represents displaced capital investment. This study assumes 60% of Iraq-related government borrowing represents displaced investment. The other 40% is assumed to be replaced by foreign investors. This figure is directly drawn from an estimate of the economic impact of deficits by the Bush Administration Council of Economic Advisors in 2003 (CEA 2003).
2. The pre-tax real marginal rate of return to capital. This report assumes a 7% real rate of return on capital, net of depreciation. This is the standard assumption that the Office of Management requests that agencies use as the alternative return to capital used in government expenditures (OMB 1992).¹²
3. The social rate of time preference, or discount rate. This report assumes a 3% discount rate. The inflation-adjusted cost of Treasury borrowing in recent years has been between 2 and 3% (OMB). The use of this Treasury borrowing rate is also recommended by OMB when using the shadow price of capital approach. The rate is higher than the standard 2% rate used by CBO. (OMB 1992; Kohyama 2006).

The economic costs of foregone investment are then summed in the following manner:

1. The increase in Federal borrowing each year is calculated using assumptions about the fraction of appropriations that are spent in each year.
2. Sixty percent of increased borrowing is assumed to displace capital.
3. The discounted real present value of the displaced capital is summed over a 15 year time horizon.
4. The present value of costs are counted as accrued in the year in which the Iraq-related borrowing took place.

The stream of foregone investment earnings is discounted to the year in which the borrowing took place. This is done to match economic costs with the reported budget figures from CBO reports and testimony (CBO 2007b, c). The costs in the body of the report can therefore be understood as describing future losses to the economy over the entire 2003-2017 period.

Interest Payments to Foreign Creditors

The 40% of borrowing that does not represent displaced capital is assumed to be borrowed from foreign purchasers of debt. Outflows of interest to these foreign creditors represent an economic loss. Therefore, each year 40% of payments on Iraq-related debt are counted as an economic loss. Based on discussions with CBO staff, interest payments are calculated at a 4.5% interest rate.

Other Costs: Medical Costs

As discussed in the main body of the report, CBO has attempted to forecast Federal medical and disability costs for war-related injuries up to the year 2017. This report adds on the present value cost of a continuation of these medical and disability costs for a 30-year period, discounted at a 3% rate. Medical costs are assumed to decline at a rate of roughly 10% per year due to the healing of injuries and illnesses. Disability costs remain constant.

¹² Other estimates are higher; for example, Gomme, Ravikumar, and Rupert (2006) estimate 7.7% as the average of the real marginal return over the 1950-2001 period. This would result in a larger amount of lost investment.

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The report also adds on a cost of lost earnings for one sample war-related disability, post-traumatic stress disorder (PTSD). The majority of lost earnings costs due to war injuries are assumed to already be counted in VA disability payments, which compensate for such earnings losses and are included in budgetary costs. However, a recent study commissioned by the Veterans Commission on the adequacy of disability benefits found that such benefits only compensate about 80 percent of the earnings losses due to mental disabilities such as PTSD (Christensen et. al 2007).

The report assumes that 15 percent of serving veterans over the 2002-17 period will eventually experience PTSD (Hoge et. al 2007; PCCWW, 2007). The report also assumes that they will experience earnings losses of roughly 20 percent (Savoca and Rosenheck 2000). Finally, the assumption is made that the average present value of lifetime earnings for a veteran absent PTSD is \$2 million. (This estimate is based on inflation-adjusted results from civilians from Day and Newburger 2002). The \$10 billion figure in the text was calculated based on these assumptions combined with the average under compensation from VA benefits discussed above.

Discounting Costs Over The Budget Window

This report discounts war costs to each specific budget year. For example, the lost future consumption due to debt-related displaced investment is discounted to the year the money was borrowed. Likewise, the future costs of disabilities and injuries for veterans are discounted to approximately the estimated year of the injury. However, costs are not discounted across budget years. This was done to maintain comparability with actual budget figures and future CBO budgetary estimates, which are not discounted.

An alternative method would be to discount all war costs to some specific budget year, such as FY 2008. Discounting and deflating total costs to real FY 2008 dollars does reduce the overall cost of the Iraq war between 2003 and 2017. However, the effect is not large. This is partly because discounting to 2008 increases costs incurred in FY 2003-2007. It is also because under the "moderate drawdown" scenario the bulk of total costs are incurred in years close to 2008.

As an example of the effect of discounting, discounting all costs to real FY 2008 dollars at a 3% discount rate and an assumed 2% inflation rate reduces the total costs of the Iraq war under the "moderate drawdown" scenario from \$2.77 trillion to \$2.58 trillion. The combined costs of the wars in Iraq and Afghanistan are reduced from \$3.48 trillion to \$3.25 trillion. Costs of the war between 2002 and 2008 alone would of course be increased by this exercise.

Bibliography

- Bilmes, Linda, 2007. "Soldiers Returning from Iraq and Afghanistan: The Long-term Costs Providing Veterans Medical Care and Disability Benefits." Working Paper, Harvard University.
- Bumiller, Elizabeth, 2003. "The Cost of War." *The New York Times*, p. 4.2.
- Christensen et al, 2007. "Final Report for the Veterans' Disability Benefits Commission: Compensation, Survey Results, and Selected Topics." The CNA Corporation, CRM D0016570.A2.
- Cline, William R, 1992. *The Economics of Global Warming*. Peterson Institute for International Economics.
- Congressional Research Service (CRS), 2007. "The Cost of Iraq, Afghanistan, and Other Global War on Terror Operations Since 9/11."
 -- 2005. "World Oil Demand and its Effect on Oil Prices."
- Congressional Budget Office (CBO), 2007a. "The Budget and Economic Outlook: Fiscal Years 2008 to 2017," available at <http://www.cbo.gov>.
 -- 2007b. "Statement of Robert A. Sunshine: Estimated Costs of US Operations in Iraq and Afghanistan and of Other Activities Related to the War on Terrorism."
 -- 2007c. "Statement of Peter Orszag: Estimated Costs of US Operations in Iraq and Afghanistan and of Other Activities Related to the War on Terrorism."
 -- 2007d. "Statement of Matthew S. Goldberg: Projecting the Costs to Care for Veterans U.S. Military Operations in Iraq and Afghanistan."
 -- 2007e. "Estimated Cost of the Administration's Proposal to Increase the Army's and the Marine Corps's Personnel Levels."
 -- 2007f. "Replacing and Repairing Equipment Used in Iraq and Afghanistan: The Army's Reset Program."
 -- 2006. "The Economic Effects of Recent Increases in Energy Prices."
- Council of Economic Advisors, 2003. "Economic Report of the President." United States Government Printing Office: pp. 54-55.
- Day, Jennifer Cheesman and Eric C. Newburger, 2002. "The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings." Current Population Reports, United States Census Bureau.
- Department of Defense (DOD), 2007. Casualty estimates available at <http://www.defenselink.mil/news/casualty.pdf>
- Energy Information Administration, 2007a. "Cushing, OK West Texas Intermediate (WTI) Spot Price." Available at <http://tonto.eia.doe.gov/dnav/pet/hist/rwtcw.htm>.
 -- 2007b. "World Crude Oil Production, 1960-2006." Available at <http://www.eia.doe.gov/emeu/aer/txt/ptb1105.html>.
 -- 2007c. "Iraq Energy Data, Statistics and Analysis." Available at <http://www.eia.doe.gov/cabs/Iraq/Oil.html>.
 -- 2004. "Energy Security: Oil." Available at <http://www.eia.doe.gov/emeu/security/Oil/rule.html>.

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JOINT ECONOMIC COMMITTEE

- Friedman, Benjamin M., 2005. "Deficits and Debt in the Short and Long Run." Working paper, National Bureau of Economic Research.
- Gomme, Paul, B. Ravikumar, and Peter Rupert, 2006. "The Return of Capital and the Business Cycle." Working Paper, Federal Reserve Bank of Cleveland.
- Government Accountability Office, 2006. "Strategic Petroleum Reserve: Available Oil Can Provide Significant Benefits, but Many Factors Should Influence Future Decisions about Fill, Use, and Expansion."
- Hamilton, James, 2004. "Oil Shocks and Aggregate Macroeconomic Behavior: The Role of Monetary Policy." *Journal of Money, Credit, and Banking*, 36: 265-286.
- Hoge et al., 2004. "Combat Duty in Iraq and Afghanistan, Mental Health Problems, and Barriers to Care." *The New England Journal of Medicine*, 351(1): 13-23.
- Huntington, Hillard G., 2005. "The Economic Consequences of Higher Crude Oil Prices." Stanford Energy Modeling Forum report for the US Department of Energy.
- Jones, Donald W., Paul N. Leiby, and Inja K. Paik, 2004. "Oil Price Shocks and the Macroeconomy: What Has Been Learned Since 1996." *The Energy Journal*, 25(2).
- Kane, Tim, 2004. "Global U.S. Troop Deployment, 1950-2003." The Heritage Foundation.
- Kohyama, Hiroyuki, 2006. "Select Discount Rates for Budgetary Purposes." Briefing Paper No. 29, Harvard Law School.
- Lyon, Randolph M., 1990. "Federal discount rate policy, the shadow price of capital, and challenges for reforms." *Journal of Environmental Economics and Management*, 18(2.2): S29-S50.
- Nordhaus, William, 2007. "Who's Afraid of a Big Bad Oil Shock." Prepared for Brookings Institution Panel on Economic Activity.
- Office of Management and Budget (OMB), 1992. "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs." Available at <http://www.whitehouse.gov/omb/circulars/a094/a094.html>
- President's Commission on Care for America's Returning Wounded Warriors (PCCWW), 2007. "Serve, Support, Simplify Report of the President's Commission on Care for America's Returning Wounded Warriors." Available online at <http://www.pccww.gov>.
- Savoca, Elizabeth and Robert Rosenheck, 2000. "The Civilian Labor Market Experiences of Vietnam-Era Veterans: The Influence of Psychiatric Disorders." *The Journal of Mental Health Policy and Economics*, 3: 199-207.
- Veterans' Disability Benefits Commission (Veteran's Commission), 2007. Available at <http://www.vetscommission.org/>.