

CRS Report for Congress

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Financing Issues and Economic Effects of American Wars

Updated April 27, 2004

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Summary

The increased government outlays associated with wars can be financed in four ways: through higher taxes, reductions in other government spending, government borrowing from the public, or money creation. The first two methods are unlikely to have an effect on economic growth (aggregate demand) in the short run: the expansion in aggregate demand caused by greater military outlays is offset by the contraction in aggregate demand caused by higher taxes and/or lower non-military government spending. The latter two methods increase aggregate demand. Thus, a by-product of American wars has typically been a wartime economic boom in excess of the economy's sustainable rate of growth. Wars may shift resources from non-military spending to military spending, but since military spending is included in GDP, it is unlikely to lead to a recession. Just as wars typically boost aggregate demand, the reduction in defense expenditures after a war typically causes a brief economic contraction as the economy adjusts to the return to peacetime activities.

The economic effect of World War II stands in a class of its own. More than one-third of GDP was dedicated to military outlays. Budget deficits were almost as large; these large deficits were made possible through policies that forced individuals to maintain a very high personal saving rate. Money creation was a significant form of financing, but the inflation that would typically accompany it was suppressed through widespread rationing and price controls. Private credit was directed towards companies producing war materials. There was a significant decrease in non-military outlays and a significant increase in taxes, including the extension of the income tax system into a mass tax system and an excess profits tax. President Truman attempted to avoid financing the Korean Conflict through borrowing from the public or money creation — budget deficits were much lower than during any other period considered — but the economy boomed anyway. Tax increases and a reduction in non-military spending largely offset the increases in military outlays. President Truman relied on price controls to prevent the money creation that did occur from being inflationary.

Vietnam, the Reagan military buildup, and the two wars in Iraq were not large enough to dominate economic events of their time. The beginning of the Vietnam Conflict coincided with a large tax cut. Non-military government spending rose throughout the Vietnam era. Most of the conflict was deficit financed, although tax increases occurred at the peak of the conflict. Inflation rose throughout the period, and President Nixon turned to price controls to suppress it. The beginning of the Reagan military buildup also coincided with a large tax cut, as well as an effort by the Federal Reserve to disinflate the U.S. economy. Thus, borrowing from the public, and later a reduction in non-military outlays, offset most of the rise in military spending. Unlike earlier conflicts, liberalized international capital markets allowed the U.S. to borrow significantly abroad for the first time, which many economists believe caused the large trade deficits of the mid-1980s. Desert Storm took place among rising budget deficits and rising taxes. It was the only military operation considered to largely occur in a recession. The 2003 war in Iraq took place at a time of sluggish economic recovery, rising non-military spending, tax cuts, and rising budget deficits. This report will not be updated.

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Financing Issues and Economic Effects of American Wars

With military conflict in Iraq, Congress has expressed an interest in how wars have been financed historically, and what effects the wars had on the economy.¹ This report examines financing and economic issues in World War II, the Korean Conflict, the Vietnam Conflict, the Reagan Military Buildup, and the 1991 and 2003 wars in Iraq. It examines tax policy, non-military outlays, the budget balance, economic growth, inflation, and interest rates during these periods.

The Economics of War Financing

People often assume that wars will lead to recessions, reasoning that the spending on war will lead to less spending in the rest of the economy. While this reasoning is correct, the conclusion is wrong. Recessions are characterized by a reduction in spending in the entire economy, including the military sector. While it is true resources must be shifted to the military sector, since the military sector is a part of GDP, the shift does not lower GDP. Wars may lead to less spending on *non-military* goods and services, but there is no reason to assume that it will lead to less spending on *total* goods and services. In fact, under certain financing methods, it is likely to lead to *greater* spending on total goods and services, which would increase the growth rate of aggregate demand in the short run.

The increased government outlays associated with wars can be financed in four ways: through higher taxes, reductions in other government spending, government borrowing from the public (the issuance and sale of U.S. Treasury securities to the public), or money creation. Major wars have relied upon all four measures.

The first two methods are unlikely to have an effect on economic growth (aggregate demand) in the short run. The expansion in aggregate demand caused by greater military outlays is largely offset by the contraction in aggregate demand caused by higher taxes and/or lower non-military government spending.

The latter two financing methods increase aggregate demand. Thus, a by-product of wars has typically been a short-term economic boom and an increase in employment in excess of the economy's sustainable rate of growth. The sectors of the economy that are recipients of the military spending, such as the transportation sector and military equipment producers, would receive the biggest boost. Just as a military buildup in wartime typically boosts aggregate demand, the reduction in

¹ For information on the economic effects of military intervention in Iraq, see CRS Report RL31585, *U.S. Military Intervention in Iraq: Some Economic Consequences*, by Marc Labonte and Gail Makinen.

defense expenditures after a war typically causes a brief economic contraction as the economy adjusts to the return to peacetime activities.

Borrowing from the Public. If the economy's resources are fully employed when the government boosts aggregate demand, the increase in government spending must be offset by a reduction in spending elsewhere in the economy. In the case of borrowing from the public, prices and interest rates would be expected to rise, the latter causing investment and other interest-sensitive spending to be lower than it otherwise would be. Economists refer to this phenomenon as government purchases "crowding out" private investment and interest-sensitive spending. Since private investment is crucial to long-run growth, the long-run effect of these policies would be to reduce the private capital stock and future size of the economy.²

Once government controls on the international flow of private capital were largely removed by the early 1970s, it became possible for government budget deficits to be financed by foreigners as well as domestic citizens. If a budget deficit is financed by foreigners, exports and import-competing goods rather than private investment would be "crowded out" by government expenditures through an appreciation of the dollar and a larger trade deficit. The appreciation occurs because demand for the dollar increases as foreigners purchase U.S. financial instruments.

In the case of expenditures on a military campaign abroad, there may be less of an expansion in aggregate demand than from other forms of government spending since some of the expenditures would be used for foreign goods and services. This suggests that there would be less upward pressure on the exchange rate and less crowding out of U.S. exports and import-competing goods.

Money Creation. How does money creation help the government raise revenues? When the government (through the Federal Reserve) prints money, it can use that money to purchase real resources. But at full employment, the government cannot increase the amount of real resources in the economy simply by printing money. In this case, if the increase in the money supply increases the resources available to the government, it must be offset by a decrease in the resources available to other individuals in the economy. This occurs through inflation, which makes money less valuable in terms of the amount of real resources for which it can be exchanged. The individuals whose wealth is reduced are those who held a portion of their wealth in the existing money at the time when the government increased the money supply. That is because the existing money they hold can now be exchanged for fewer real resources than before the new money was printed. For this reason, using money creation as a form of government finance has often been characterized by economists as an "inflation tax."³

² For a more detailed discussion, see CRS Report RL30583, *The Economics of the Federal Budget Surplus*, by Brian Cashell.

³ Money creation also has the side effect of transferring wealth among private individuals from those who suffer from higher inflation to those who benefit from higher inflation. In many cases, it is particularly savers who suffer and debtors who benefit from high inflation.

Unlike borrowing from the public, money creation would not be expected to disproportionately crowd out private investment because expansionary monetary policy is likely to have the effect of reducing interest rates in the short run. Instead, the transfer of resources is likely to come about through higher inflation, affecting individuals who are unable to protect their wealth and income from inflation.⁴ While some price inflation may be associated with borrowing from the public, money creation is typically a more inflationary method of finance.

In World War II, the means by which the increase in the money supply came about was through the Federal Reserve's purchase of government bonds. In effect, the Federal Reserve made a loan to the government of newly printed money. In the 1950s, the Treasury- and Federal Reserve reached an "accord," and the government could no longer "borrow" directly from the Federal Reserve. But even if the government could not sell its bonds to the Federal Reserve directly, it would still be possible for the government to use money creation as a means of war financing (assuming the Federal Reserve agreed). The government could sell its bonds to private individuals, and the Federal Reserve could then purchase those bonds from private individuals with newly printed money and return the proceeds of those bonds to the Treasury. In both cases, the result would be the same — the increase in the money supply would transfer resources to the government by reducing the public's real wealth.⁵

World War II was the only conflict examined in which the government relied on money creation as a significant source of revenue. And the amount of revenue extracted from money creation in World War II pales in comparison with foreign experience with hyperinflation. In parts of Central Europe in the inter-war period and Latin America in the 1970s and 1980s, the tax collection system could not meet the needs of the government, and the government relied primarily on money creation for its revenue. In these countries, inflation often exceeded 100% a month and money lost the useful functions it provides in a market economy. In other conflicts in which inflation rose in the United States, such as the Vietnam Conflict, it would be unfair to characterize the excessive money creation that occurred as being motivated primarily by a desire to increase government revenue. It is fairer to say that excessive

⁴ Part of individuals' private wealth is held in the form of U.S. Treasuries, government debt. If individuals do not fully anticipate future inflation and cannot protect their holdings of Treasuries from inflation, then manipulating the money supply can also reduce the government's burden of servicing its debt. (For example, holding long-term bonds exposes an individual to future inflation risk.) One result of the high inflation after World War II was a large reduction in the real value of government debt outstanding.

⁵ At present, the Federal Reserve's use of monetary policy has the same results as the process described in this report — increases in the money supply increase the amount of real resources that the government can purchase. The difference between the Federal Reserve's current policy and the process described in this report is that current policy is not designed to maximize the purchasing power of the government. Instead, its current policy aims to maintain price stability and full employment. Maximizing the purchasing power of the government would require far too much money creation to maintain these goals. But reaching these goals may incidentally lead to increases in the money supply that add to the government's purchasing power because small increases in the money supply are consistent with a growing economy which has a small, but positive, rate of inflation.

money creation was influenced by a desire or belief by the government that the economy could or should grow faster than was actually possible.

Use of Price Controls. Under normal circumstances, money creation as a means of government finance would be expected to lead to price inflation. In major wars, the government has attempted to suppress inflation through the use of widespread price controls rather than forgo the benefits of inflationary monetary policy. Economic theory suggests, and historical evidence supports, that the use of price controls may be successful at suppressing inflation for a time, but prices will eventually rise when those controls are removed, or even sooner if the administration of controls break down. The suppression of inflation increases the government's purchasing power for a given change in the money supply, making monetary finance more powerful. Strict price controls create significant market distortions and may result in shortages for some goods because they do not allow relative prices to adjust as supply and demand for individual goods change. When price controls are in effect, black market activity typically expands as citizens attempt to avoid the distortions that the controls create.

Equity Issues. All four methods of war financing raise equity questions, since each method places the financing burden on different groups of individuals. The burden of financing wars through higher taxes is borne by the individuals that have their taxes raised. The burden of financing wars through a reduction in other government spending is borne by the individuals to whom the spending was previously directed. The burden of financing wars through money creation is borne by those whose real wealth and real income fall when prices rise. Uniquely, the burden of financing wars through borrowing from the public is thought to be borne in part by future generations rather than present generations. The result of borrowing from the public is lower private investment, and lower private investment leads to a smaller future economy, and hence lower standards of living in the future. Philosophically, the debt financing of wars has often been justified on the grounds that the peace or security that wars make possible is enjoyed by present and future generations. Thus, the cost should be borne by present and future generations.⁶

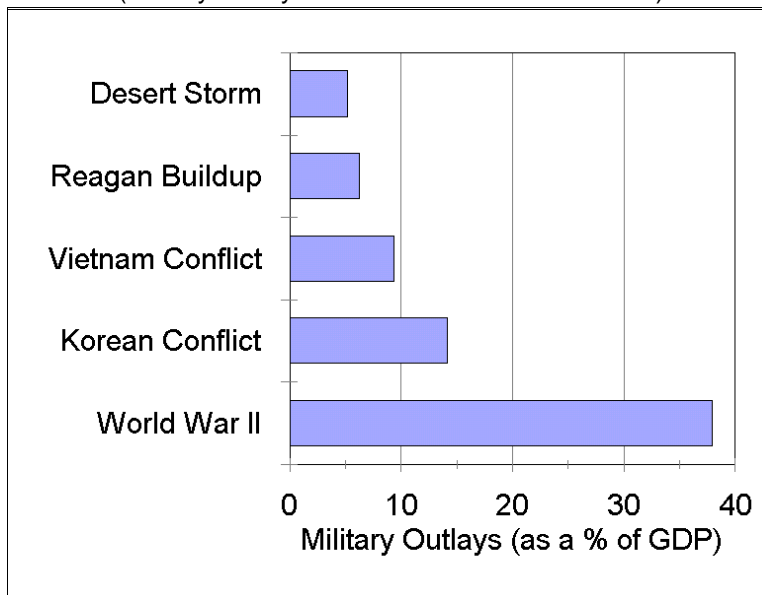
Interpreting Results. Unlike science experiments, economic experiments are not controlled and cannot be repeated. It is impossible to separate out the effects of a war from the countless other economic events happening simultaneously to get precise estimates of how any given war affected the economy. The presentation of data in the tables below is not meant to assume causation. This is especially true in the case of interest rates. The economic theory that interest rates are higher than they otherwise would be when the budget is in deficit is not equivalent to the empirical observation that interest rates are high or low in any given year. For example, interest rates can rise in any given year because private investment demand rises, monetary policy is tightened, private individuals change their savings patterns, foreigners find U.S. assets less attractive, the perceived riskiness of investment increases, or because the federal budget deficit increases. Furthermore, real (or inflation-adjusted) interest rates are measured in this report based on actual inflation

⁶ For more information, see CRS Report RL30520, *The National Debt: Who Bears Its Burden?*, by Gail Makinen,.

rates. But they are determined in part by expected inflation rates. If actual inflation turns out to be much higher than expected inflation, then real interest rates will be temporarily low. Thus, it is not unusual to see *ex-post* negative real interest rates in years of unexpectedly high inflation, of which there are several examples in the periods discussed below.

In drawing lessons from past conflicts, it should also be stressed that larger wars require wider ranging government involvement and produce larger economic effects, as illustrated in Figure 1. The Vietnam Conflict, the Reagan Military Buildup, and the Desert Storm Operation were not large enough events that they could be thought to dominate cause and effect in the economy at the time. And to equal the military outlays (as a percentage of GDP) undertaken at the peak of the Reagan military buildup, military outlays today would need to more than double from their level in 2001.

Figure 1: Comparing the Size of Conflicts
(Military Outlays at Their Peak as a % of GDP)



Source: Office of Management and Budget, *Historical Tables*.

World War II

World War II was unique among events considered in this report in that it was accompanied by fundamental (albeit temporary) changes in the structure of our market economy. In the face of these measures, any economic comparison between World War II and other economic events in the post-war period is questionable, and the predicted economic outcomes could be significantly different. In World War II, the prices of consumer goods were fixed and controlled on a widespread basis from 1942 to 1945, consumer goods were rationed through the use of purchase coupons, goods and services available to individuals were purposely kept below salaries to

force a higher private saving rate, private factories were instructed and encouraged to change their output to war production, resources and credit were directed by the government toward companies producing war materials, the female participation rate in the labor force was temporarily raised, and nearly half of gross domestic product (GDP) was used by the federal government.⁷

Due to the size of World War II, the government relied on all four methods of financing. Despite the record size of government as a percentage of GDP, non-military government expenditures had fallen to less than half their pre-war level by the end of the war. As can be seen in the table below, which illustrates economic conditions before, during, and after the war, budget deficits exceeded 30% of GDP at their peak. The publicly held debt reached 108.6% of GDP in 1946. This would have been impossible without government controls over private spending and investment decisions and the patriotism generated by a major war. Central to this policy was the decision by the Treasury and Federal Reserve to keep the yield on U.S. Treasuries artificially low to ease the debt financing burden. (With the desire to keep inflation low, this policy decision necessitated the use of price controls since it required rapid money creation.) About one-quarter of the debt financing of World War II occurred through the war bond program, which sold small-denomination, non-marketable bonds to private citizens.⁸ The war effort was large enough to keep the economy operating far above its sustainable rate for the entirety of the war. Furthermore, there was a high rate of unemployment before the war began, at 14.6% in 1940. Thus, the economy probably had idle resources to enlist toward the war effort, allowing growth to exceed its sustainable rate while those resources became employed. Since economic growth was so great during the war, the standard contraction following the war was also large, as the economy adjusted to a decline in government spending from about 40% of GDP to about 15% of GDP. The contraction ended in 1948, and left no lasting impact on growth in the 1950s.

To finance the increase in government outlays from 9.8% of GDP in 1940 to 43.6% of GDP in 1943 through higher taxes exclusively would have involved impossibly large tax increases, with corresponding disincentive effects on work and saving. Nevertheless, the government did finance a portion of the war effort by raising taxes. Tax measures during the War included the Revenue Act of 1942, the Current Tax Payment Act of 1943, the Revenue Act of 1943, and the Individual Income Tax Act of 1944. The Revenue Act of 1942 included provisions that made the individual income tax a “mass tax” for the first time, increased the corporate tax, increased excise taxes, increased the excess profits tax to 90%, and created a 5% Victory tax which was to be repaid through a post-war tax credit. The Current Tax Payment Act of 1943 introduced tax withholding which eased the Treasury’s ability to finance day-to-day expenditures. The Revenue Act of 1943 was meant to alter the distribution of taxation. It was the first tax bill to be vetoed, and Congress overrode the veto. The Individual Income Tax Act of 1944 was meant to simplify the income

⁷ These distortions make economic statistics from the period highly questionable. According to the Bureau of Economic Analysis, the “residuals” of data that cannot be accounted for reach one-sixth the size of GDP at one point in World War II.

⁸ See CRS Report RS21046, *War Bonds in the Second World War: A Model for a New War Bond?*, James Bickley,.

tax system and it also abolished the Victory Tax. The act lowered tax revenues by an estimated 0.2% of GDP.⁹ Tax rates were greatly reduced after the war had ended.

Economic Indicators in the World War II Era

Year	Military Outlays (% of GDP)	Tax Revenue (% of GDP)	Budget Deficit (% of GDP)	Non-Military Outlays (% of GDP)	Real GDP Growth	Inflation Rate (Price Deflator)	Real Corporate Bond Yields
1940	1.7%	6.8%	-3.0%	7.2%	8.5%	0.8%	4.1%
1941	5.6%	7.6%	-4.3%	5.6%	13.8%	3.6%	-0.7%
1942	17.8%	10.1%	-14.2%	5.9%	17.8%	7.4%	-6.6%
1943	37.0%	13.3%	-30.3%	5.8%	16.8%	6.9%	-2.2%
1944	37.9%	20.9%	-22.8%	4.7%	11.8%	3.8%	1.9%
1945	37.5%	20.4%	-21.5%	3.0%	3.3%	2.5%	1.0%
1946	19.2%	17.6%	-7.2%	3.8%	-6.2%	7.3%	-5.2%
1947	5.5%	16.4%	1.7%	7.4%	-4.5%	10.4%	-11.2%

Source: Office of Management and Budget, *Historical Tables*; Bureau of Labor Statistics, *Consumer Price Index*; Federal Reserve.

Note: Non-Military Outlays do not include interest payments on the federal debt; real corporate bond yields are for Moody's BAA series as recorded by the Federal Reserve less the consumer price index (CPI); all data are calculated on a fiscal year basis except for corporate bond yields and economic data in 1940, both of which are calculated on a calendar year basis.

Korean Conflict

In contrast to World War II, President Truman relied largely on taxation and a reduction of non-military outlays, rather than borrowing from the public or money creation, to finance the Korean Conflict. Of course, this turned out to be feasible only because the Korean Conflict was so much smaller than World War II. Nevertheless, it is striking how much lower budget deficits and inflation were during this era than during the Vietnam Conflict and President Reagan's military buildup, both of which involved much smaller military expenditures as a percentage of GDP.

Inflation remained low despite the fact that economic growth was kept above its sustainable rate throughout the war. When high inflation emerged in 1951, the government again resorted to widespread wage and price controls. It did not reimplement a rationing system for private consumption of goods and services,

⁹ Sidney Ratner, *Taxation and Democracy in America*, Octagon Books, (New York: 1980), pp. 515-518; Joe Thorndike, "Wartime Tax Legislation and the Politics of Policymaking," *Tax Notes*, October 25, 2001.

however. A change in Federal Reserve policy in 1951 assured that inflation would be kept under control. After World War II, the Treasury had adopted the position that Federal Reserve monetary policy should be directed towards keeping the yield on Treasury securities stable and artificially low to keep debt financing costs manageable while limiting the reserves available to banks. In 1951, it became clear that maintaining this policy would be inflationary, and since inflation remained the Truman administration's primary concern, the Treasury and Federal Reserve reached an "accord" to allow the Fed to focus on maintaining price stability and gradually allowing the yields on Treasury securities to become market determined. Typically, the economy experienced a short recession after the Korean Conflict ended.¹⁰

Economic Indicators in the Korean Conflict Era

Year	Military Outlays (% of GDP)	Tax Revenue (% of GDP)	Budget Deficit (-) (% of GDP)	Non-Military Outlays (% of GDP)	Real GDP Growth	Inflation Rate (Price Deflator)	Real Corporate Bond Yields
1949	4.8%	14.5%	0.2%	7.8%	2.4%	3.4%	4.6%
1950	5.0%	14.4%	-1.1%	8.8%	2.2%	-1.4%	1.9%
1951	7.3%	16.1%	1.9%	5.4%	11.4%	5.3%	-4.5%
1952	13.2%	19.0%	-0.4%	4.9%	4.6%	3.9%	1.6%
1953	14.1%	18.6%	-1.7%	4.9%	5.0%	1.9%	2.9%
1954	13.0%	18.4%	-0.3%	4.4%	0.0%	1.2%	2.8%
1955	10.8%	16.6%	-0.8%	5.3%	3.7%	0.1%	3.9%

Source: Office of Management and Budget, *Historical Tables*; Bureau of Labor Statistics, *Consumer Price Index*; Federal Reserve.

Note: Non-Military Outlays do not include interest payments on the federal debt; real corporate bond yields are for Moody's BAA series as recorded by the Federal Reserve less the consumer price index (CPI); all data are calculated on a fiscal year basis except for corporate bond yields which are calculated on a calendar year basis.

Shortly after the outbreak of the Korean Conflict, the Revenue Act of 1950 was enacted. It resurrected the income tax rates of World War II and raised taxes by an estimated 1.3% of GDP. Later in the year, the Excess Profits Tax of 1950 was enacted. The Revenue Act of 1951 raised individual income and corporate taxes, for an estimated revenue increase of 1.9% of GDP. The increase in individual and corporate taxes would have raised more revenue, but the 1951 Act also contained several narrow-based tax reductions.¹¹

¹⁰ Craufurd Goodwin, *Exhortation and Controls*, Brookings Institution, (Washington, DC: 1975), p. 69-93; Milton Friedman and Anna Schwartz, *A Monetary History of the United States*, Princeton University Press, (Princeton: 1963), p. 610-636.

¹¹ Robert Willan, *Income Taxes: Concise History and Primer*, Clairtor's Publishing (continued...)

Vietnam Conflict

There are no official dates to frame the period of the Vietnam Conflict. This report considers the conflict to cover the period from 1964, when American soldiers in Vietnam were increased to 20,000, to 1973, when President Nixon declared an end to the conflict. In budgetary terms, a buildup did not begin until 1966 and the war was in decline from 1970 onwards. The military buildup was not as marked as in other wars because military outlays were already high from the Cold War arms race.

Arguably, fiscal policy in the 1960s and 1970s was not framed in terms of events in Vietnam; this was done in part purposely due to the domestic controversy surrounding the Conflict. Unlike World War II and the Korean Conflict, non-military expenditures were increased throughout the Vietnam era, beginning with the Great Society programs. Throughout the Conflict, the government attempted to avoid tax increases, although it did raise taxes between 1968-1970. Thus, borrowing from the public played a greater part in war financing than it had in the Korean Conflict. There was no explicit policy during the Vietnam Conflict instructing the Federal Reserve to keep federal interest costs low, as there was in World War II and at the beginning of the Korean Conflict. Nevertheless, inflation rose significantly as the Conflict progressed, although this was probably the result of a belief that the economy could grow at a faster rate than was actually possible, rather than a desire to use money creation as a significant source of revenue.

The first tax act of the Vietnam era was a tax reduction, the Revenue Act of 1964, which was implemented to counter a perceived economic slowdown. This act embodied many of the proposals made by President Kennedy in 1961 to “get America moving again.” Its major provisions included a reduction in individual income and corporate tax rates, and an expansion of the standard deduction. Nevertheless, the Vietnam Conflict put strains on the budget that ultimately influenced budgetary decisions. In 1968 and 1969, temporary 10% surcharges were applied to individual income and corporate taxes, ostensibly to curb inflation. The measure led to the last budget surplus (1969) until 1998. Later that year, the Tax Reform Act of 1969 was passed. It was advertised as a measure to reform the tax code and close certain loopholes, but also had the effect of raising revenue by 0.2% of GDP in 1970. Its major provisions were the repeal of the investment tax credit (revenue raising), the restriction of the tax exempt status of foundations (revenue raising), a broadening of the individual income tax base (revenue raising), and an increase in the income tax’s standard deduction and personal exemption (revenue reducing). In addition, it extended the temporary surcharges for the first six months of 1970 at a rate of 5% (reduced from the previous 10%), raising an additional 0.4% of GDP. The 1971 Revenue Act reduced taxes with the aim of increasing aggregate demand. It restored the investment tax credit, accelerated planned tax reductions, and

¹¹ (...continued)

Division, (Baton Rouge: 1994); John Witte, *The Politics and Development of the Federal Income Tax*, University of Wisconsin Press, (Madison: 1985)

increased the standard deduction. The tax reductions contributed to larger budget deficits in the following years.¹²

The combination of rising budget deficits and expansionary monetary policy led to rapidly rising inflation in the late 1960s and early 1970s. Rather than further tighten monetary policy or fiscal policy to weaken aggregate demand, President Nixon responded with the imposition of price controls in four phases from 1971 to 1974. Under the Nixon program, prices, wages, and profits were controlled for all large firms. The prices of some commodities, imports and exports, unprocessed agricultural products, and the wages of low-wage workers were exempted. Later, in phase III, rents were exempted as well. Small firms did not have to comply with price, profit, or wage controls for some phases. Over the four phases, controls were meant to be gradually reduced. In phase I, prices and wages were “frozen;” in phase II, they were “self-administered” which meant that price increases were allowed if approved by the government; in phase III, “decontrol” began. (The subsequent failure of inflation to slow in phase III led to tighter controls for some industries in phase IV, while other industries were decontrolled.) The controls proved to be very unpopular with the public, as shortages and distortions appeared in different markets.

From 1973, the oil shock and ensuing “stagflation” dominated economic events. The combination of higher oil prices and the end of price controls, which released pent up inflationary pressures, led to a high inflation rate throughout the 1970s. By this point, military expenditures as a percentage of GDP had been significantly reduced.

¹² Willan, *op cit*; Witte, *op cit*.

Economic Indicators in the Vietnam Era

Year	Military Outlays (% of GDP)	Tax Revenue (% of GDP)	Budget Deficit (-) (% of GDP)	Non-Military Outlays (% of GDP)	Real GDP Growth	Inflation Rate (Price Deflator)	Real Corporate Bond Yields
1963	8.9%	17.8%	-0.8%	8.4%	4.1%	1.3%	3.6%
1964	8.5%	17.6%	-0.9%	8.7%	5.7%	1.2%	3.5%
1965	7.4%	17.0%	-0.2%	8.6%	5.4%	1.8%	3.3%
1966	7.7%	17.3%	-0.5%	8.9%	7.3%	2.2%	2.8%
1967	8.8%	18.3%	-1.1%	9.3%	4.5%	3.2%	3.1%
1968	9.4%	17.6%	-2.9%	9.8%	3.0%	3.6%	2.7%
1969	8.7%	19.7%	0.3%	9.3%	4.6%	4.5%	2.3%
1970	8.1%	19.0%	-0.3%	9.8%	1.2%	5.5%	4.4%
1971	7.3%	17.3%	-2.1%	10.7%	1.6%	5.0%	4.2%
1972	6.7%	17.5%	-2.0%	11.5%	4.4%	4.7%	5.0%
1973	5.9%	17.6%	-1.1%	11.6%	6.0%	4.4%	2.0%
1974	5.5%	18.3%	-0.4%	11.7%	2.9%	7.1%	-1.5%
1975	5.5%	17.9%	-3.4%	14.3%	-2.0%	7.5%	1.5%

Source: Office of Management and Budget, *Historical Tables*; Bureau of Labor Statistics, *Consumer Price Index*; Federal Reserve

Note: Non-Military Outlays do not include interest payments on the federal debt; real corporate bond yields are for Moody's BAA series as recorded by the Federal Reserve less the consumer price index (CPI); all data are calculated on a fiscal year basis except for corporate bond yields which are calculated on a calendar year basis.

Reagan Military Buildup

Military outlays during the Reagan military buildup were significantly lower as a percentage of GDP than they were during any of the preceding military conflicts. Neither tax increases nor money creation were used to finance the buildup. On the contrary, both taxes and inflation were lowered during this time for reasons unrelated to the military buildup. Tax cuts and their claimed supply-side effects on economic growth were one of the major themes of the Reagan era, and the main goal of the Federal Reserve under Chairman Paul Volcker was to reduce inflation from the double-digit rates prevalent in the late 1970s. (The Fed accomplished this goal by 1983, but the side effect of the Fed disinflation was the deepest recession since the Great Depression.) As a result, increased military outlays and tax cuts led to budget deficits and a reduction in non-military outlays as a percentage of GDP.

The Economic Recovery Tax Act of 1981 was the major tax reduction bill of the Reagan years. The major provisions were reductions in marginal income tax rates, individual saving incentives, and more favorable capital depreciation rates. In the years following the act, the budget deficit increased from 2.6% of GDP in 1981 to 4.0% of GDP in 1982 to 6.0% of GDP in 1983. These budget deficits were the largest budget deficits as a percentage of GDP since World War II. As theory suggests, the combination of loose fiscal policy and tight monetary policy in the 1980s led to the highest *ex-post* real interest rates of any period covered in this report. Since the United States operated a floating exchange rate in the 1980s, as it does at present, economists believe that one result of the large budget deficits were the large trade deficits of the mid-1980s, which were the result of foreign capital being attracted to U.S. by the high interest rates that budget deficits had caused.¹³

Efforts were undertaken from 1982 onwards to reduce the budget deficit. In 1982, parts of the Economic Recovery Tax Act of 1981 that had not yet been phased in were repealed. In 1983, Social Security taxes were increased and benefits reduced. In 1984, Congress passed the Deficit Reduction Act. In 1985, Congress enacted the Gramm-Rudman-Hollings Act, which attempted (unsuccessfully) to balance the budget in five years through automatic reductions in expenditures. In 1986, the Tax Reform Act was passed; it was intended to be revenue neutral. It sought to broaden the tax base by eliminating deductions and exemptions and lowered marginal tax rates. It also eliminated the special capital gains tax rate and the investment tax credit, altered depreciation rules, expanded the Alternative Minimum Tax (AMT) on individuals and introduced an AMT on corporations. As a percentage of GDP, non-military outlays were not cut until 1984. While President Reagan favored lower government spending in general, the size of the budget deficits was thought to be a central reason for Congress to enact these reductions in outlays. The deficit was not eliminated until 1998, however. The deficits caused interest payments on the national debt to rise from 1.9% of GDP in 1980 to 3.1% of GDP in 1985. Military outlays were not reduced until the end of the Reagan presidency, and the reductions were later accelerated by the fall of the Soviet Bloc.

¹³ For more information, see CRS Report 97-985E, *Why the Budget Deficit and Trade Deficit Haven't Been Moving Together*, by Gail Makinen,.

Economic Indicators in the Reagan Era

Year	Military Outlays (% of GDP)	Tax Revenue (% of GDP)	Budget Deficit (-) (% of GDP)	Non-Military Outlays (% of GDP)	Real GDP Growth	Inflation Rate (Price Deflator)	Real Corporate Bond Yields
1980	4.9%	18.9%	-2.7%	14.8%	0.0%	8.9%	0.2%
1981	5.1%	19.6%	-2.6%	14.9%	2.2%	9.7%	5.7%
1982	5.7%	19.1%	-4.0%	14.8%	-1.4%	7.0%	9.9%
1983	6.1%	17.5%	-6.0%	14.8%	2.1%	4.4%	10.4%
1984	5.9%	17.4%	-4.8%	13.4%	7.6%	3.7%	9.9%
1985	6.1%	17.7%	-5.1%	13.7%	4.3%	3.3%	9.1%
1986	6.2%	17.5%	-5.0%	13.2%	3.9%	2.4%	8.5%
1987	6.1%	18.4%	-3.2%	12.5%	2.8%	2.8%	7.0%
1988	5.8%	18.1%	-3.1%	12.4%	4.5%	3.3%	6.7%
1989	5.6%	18.3%	-2.8%	12.5%	3.8%	3.8%	5.4%
1990	5.2%	18.0%	-3.9%	13.4%	2.3%	3.8%	6.0%

Source: Office of Management and Budget, *Historical Tables*; Bureau of Labor Statistics, *Consumer Price Index*; Federal Reserve.

Note: Non-Military Outlays do not include interest payments on the federal debt; real corporate bond yields are for Moody's BAA series as recorded by the Federal Reserve less the consumer price index (CPI); all data are calculated on a fiscal year basis except for corporate bond yields which are calculated on a calendar year basis.

Desert Storm Operation

The economic and financing issues surrounding the Desert Storm Operation are unique in this survey in several ways. First, the Desert Storm Operation was the only military operation considered that did not require any increase in military expenditures as a percentage of GDP. In fact, it took place during the long reduction in military spending as a percentage of GDP that accompanied the end of the Cold War. In this broad sense, there is no reason to consider the economic effects of financing the buildup. In fact, an economic contraction occurred during Desert Storm, unlike the typical wartime economic boom. The 1990-1991 recession is not typically attributed to the war, except for its possible negative effects on confidence. Instead, it is typically attributed to contractionary monetary policy (undertaken through 1989 to quell the rising inflation rate), problems in the banking sector, and the spike in oil prices associated with the Iraqi invasion of Kuwait. Timing supports this argument: the monetary tightening took place in 1988 and 1989, the recession began in July 1990, the oil price spike began in August 1990, and military operations began in January 1991. After the conflict ended, the economy began to expand again (in March 1991) — it did not experience a typical post-war contraction.

Unlike previous military conflicts, in which the Federal Reserve had tolerated excessive money creation, during Desert Storm the Federal Reserve sought to stamp out inflationary pressures that originated before the conflict, even at the risk of recession. After the conflict ended, the economy began to expand again — it did not experience a typical post-war contraction. The budget deficit rose during the conflict, but it would be difficult to claim that military spending contributed to the rise in the deficit when overall military spending was declining during this time. Instead, the rising budget deficit was characterized by falling tax revenues and rising non-military outlays, both of which can be largely accounted for by automatic changes in revenues and outlays caused by the economic slowdown.¹⁴ To reduce the widening deficit, the Omnibus Budget Reconciliation Act of 1990 cut spending and increased taxes. It was estimated that over the following five years, 57% of the deficit reduction would come from spending cuts and 29% from tax increases (14% would come from lower interest payments). Changes to excise taxes, payroll taxes, and individual income taxes accounted for the bulk of the tax increases. The revenue raising provisions of the act were estimated to raise tax revenues by 0.3% of GDP in 1991. Most of the spending reductions were to come from reductions in military outlays and Medicare spending.¹⁵

Another unique aspect of the financing of the Gulf War was the financial contributions that the U.S. received from its allies. In effect, foreign governments financed a large part of the war effort for the United States — contributions from foreign governments equaled \$48 billion, while the overall cost of the war was \$61 billion in current dollars.¹⁶ In the balance of payments, these contributions represented a unilateral transfer to the United States, which is recorded as a reduction in the current account deficit. The exchange value of the dollar was unlikely to have been significantly affected, however, since a substantial portion of the contributions came from Saudi Arabia and Kuwait, both of whom have a *de facto* fixed exchange rate with the dollar.

¹⁴ When adjusted for the effects of the economic slowdown, the structural budget deficit was equivalent to 2.1% of GDP in 1989, 2.1% of GDP in 1990, and 2.5% of GDP in 1991. Source: Congressional Budget Office, *The Budget and Economic Outlook*, (Washington: January 2001), Table F-1.

¹⁵ CRS Report 91-20E, *Tax Provisions of the Omnibus Budget Reconciliation Act of 1990*, by David Brumbaugh and Gregg Esenwein; Congressional Budget Office, *Budget and Economic Outlook*, January 1991, “Special Supplement,” *Tax Notes*, October 29, 1990.

¹⁶ CRS Report RS21013, *Costs of Major U.S. Wars and Recent U.S. Overseas Military Operations*, by Stephen Daggett and Nina Serafino; Congressional Budget Office, *The Economic and Budget Outlook*, (Washington: January 1992), p. 63.

Economic Indicators in the Desert Storm Era

Year	Military Outlays (% of GDP)	Tax Revenue (% of GDP)	Budget Deficit (-) (% of GDP)	Non-Military Outlays (% of GDP)	Real GDP Growth	Inflation Rate (Price Deflator)	Real Corporate Bond Yields
1989	5.6%	18.3%	-2.8%	12.5%	3.8%	3.8%	5.4%
1990	5.2%	18.0%	-3.9%	13.4%	2.3%	3.8%	6.0%
1991	4.6%	17.8%	-4.5%	14.4%	0.0%	3.9%	5.6%
1992	4.8%	17.5%	-4.7%	14.2%	2.2%	2.6%	6.0%
1993	4.4%	17.6%	-3.9%	14.1%	3.0%	2.4%	4.9%

Source: Office of Management and Budget, *Historical Tables*; Bureau of Labor Statistics, *Consumer Price Index*; Federal Reserve.

Note: Non-Military Outlays do not include interest payments on the federal debt; real corporate bond yields are for Moody's BAA series as recorded by the Federal Reserve less the consumer price index (CPI); all data are calculated on a fiscal year basis except for corporate bond yields which are calculated on a calendar year basis.

2003 War in Iraq

While it is still too early to draw any definitive conclusions about the overall cost and economic effects of the 2003 war in Iraq, it is useful to look at the evidence available so far.¹⁷ Like the 1991 conflict, the 2003 war took place during a period of economic weakness. Since the recession had already ended about a year and a half before the war, the war was clearly not responsible for the economic weakness. At most, it prolonged the initially sluggish nature of the recovery through the upward blip in oil prices, which mostly occurred in the months leading up to the war. Some observers had predicted the war would depress economic activity through another channel, weakened consumer and investor confidence, but this did not come to pass.

On the other hand, the war contributed to the widening of the budget deficit, and this would be expected to stimulate aggregate demand during a period of economic sluggishness. Any stimulative effect would be minor, however, since military outlays only increased by 0.3 percentage points of GDP in 2003 and an additional 0.3 percentage points in 2004 (if measured by the supplemental appropriations, the increased outlays equal about 0.6 percentage points of GDP in 2003 and 2004).¹⁸ (Even after the recent increase, military spending as a percentage of GDP is still lower than it was in any year before 1995.) As can be seen in the table, the increase

¹⁷ For a complete discussion, see CRS Report RL31585, *U.S. Military Intervention in Iraq: Some Economic Consequences*, by Marc Labonte and Gail Makinen.

¹⁸ See CRS Report RL32090, *FY2004 Supplemental Appropriations for Iraq, Afghanistan, and the Global War on Terrorism*, by Stephen Daggett et al; CRS Report RL31829, *Supplemental Appropriations FY2003: Iraq Conflict, Afghanistan, Global War on Terrorism, and Homeland Security*, by Amy Belasco and Larry Nowels.

in military outlays was not financed through higher tax revenues or lower non-military outlays. Therefore, the war can be thought to be entirely deficit financed. As opposed to past conflicts where taxes were raised, taxes were cut in 2003. The tax cut's major provisions were an acceleration of the 2001 income tax rate reductions and a reduction in the tax rate on dividends.¹⁹ Because of general economic weakness, the increased military spending and resultant deficits did not lead to higher interest rates or inflation.

Economic Indicators in the 2003 Iraq War

Year	Military Outlays (% of GDP)	Tax Revenue (% of GDP)	Budget Deficit (% of GDP)	Non-Military Outlays (% of GDP)	Real GDP Growth	Inflation Rate (Price Deflator)	Real Corporate Bond Yields
2002	3.4%	17.9%	-1.5%	14.4%	1.5%	1.8%	4.9%
2003	3.7%	16.5%	-3.5%	14.8%	2.7%	1.6%	3.4%
2004*	4.0%	15.8%	-4.2%	14.9%	4.5%	1.3%	3.4%

*Projected

Source: Office of Management and Budget, *Historical Tables*; Bureau of Labor Statistics, *Consumer Price Index*; Federal Reserve, Macroeconomic Advisers.

Note: Non-Military Outlays do not include interest payments on the federal debt; real corporate bond yields are for Moody's BAA series as recorded by the Federal Reserve less the consumer price index (CPI); all data are calculated on a fiscal year basis except for corporate bond yields which are calculated on a calendar year basis.

Conclusion

There is little reason to believe that the increase in military outlays associated with a war would cause a recession; in fact, it is likely to cause an increase in aggregate demand. Even if a conflict shifted spending away from non-military goods and services, there is no reason to think overall GDP would fall because military spending is included in GDP. The increased government outlays associated with wars can be financed in four ways: through higher taxes, reductions in other government spending, government borrowing from the public (the issuance and sale of U.S. Treasury securities to the public), or money creation. The Desert Storm Operation illustrates that a military campaign of moderate size can be financed with very little impact on the budget or the economy. That campaign involved no increase in overall military outlays as a percentage of GDP. When wars get larger, tax increases almost inevitably become necessary. Big conflicts typically bring economic booms since borrowing from the public and money creation expand aggregate

¹⁹ See CRS EBBTXR86, *The Jobs and Growth Tax Relief Reconciliation Act of 2003*, in the CRS Taxation Electronic Briefing Book, by Gregg Esenwein.

demand. “Total wars,” such as World War II, typically draw on all four financing methods and may even lead to fundamental shifts away from a market economy.

The choice of how to finance a war is mainly a question of equity, which by its nature is a political question. (The exceptions are total wars, which involve such large expenses that virtually any financing choices will lead to considerable efficiency losses.) Financing through borrowing has been justified by some on the grounds that future generations benefit from the sacrifice that present generations make by fighting the war, and should therefore bear some of the cost of the war. Borrowing has also been justified on “consumption smoothing” grounds — it is better to defray a temporary expense over time than all at once.

Of the four financing methods, economists tend to reject the money creation method if it can be avoided. They argue that the “inflation tax” is the most arbitrary of all taxes because the government cannot democratically specify its incidence. It is also a financing method that leads to large efficiency losses quickly because it reduces the useful functions money serves in a market economy. It also undermines the effectiveness of monetary policy as a macroeconomic stabilization tool. Economists also tend to believe that the benefits of widespread price controls are largely illusory. Even if price controls successfully reduce recorded inflation, they create serious efficiency and welfare losses, typically lead to shortages, limit individual choice, and encourage participation in black markets. When removed, price controls have consistently led to a release of pent up inflation historically.

Total wars by their nature require financing methods that lead to large efficiency losses. Money creation, increasing taxes, or borrowing from the public on a large scale could all be opposed on efficiency grounds — it would be difficult to claim that any one financing method is most efficient. In addition, governments often feel that the equity rationale makes policies such as rationing necessary, compounding the overall efficiency loss. Thus, attempting to draw general policy conclusions from the experience with total war risks comparing apples with oranges.