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Farhidi, Faraz

Georgia State University

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Side Effects of War on the US Economy

Faraz Farhidi

PhD Candidate, Department of Economics, Andrew Young School of Policy Studies
Georgia State University, Atlanta

Abstract

Having studied the ancient empires, achieving political and economic powers, have been hovered one of the most critical issues all the time for the nations. The strategies to secure those might be different, but the intension still stays the same: controlling the labor and capital markets. Reviewing the historical colonization, one would recognize that there is a significant correlation between the political power and economic power within the countries. Among all the explanations on the approaches to attain these ambitions, using conquest other nations to gain resources and new territory and labor force seems to be one the unfortunate motives in this discussion. In the current study, having analyzed the macro data, I claim the feasibility of a positive causal relationship between having wars abroad and government expenditure in the long run within the studied period in the United States. While in the investigated duration, war seems to have a positive effect on the personal consumptions and the negative one on the export of goods and services, as well as private investments in the short run, as a consequence.

Keywords: US Economy, War, Causal relation, Macro elements

JEL classification: C20, E20, H56, N42, O41

1. Introduction

“The most striking conflict phenomenon in human society is, of course, war, that is, organized conflict between groups. With the closing of the Neolithic frontier and the development of urban civilization, however, war became a virtually continuous form of human activity, requiring the development of specialized armed forces, which involved a full-time job and lifetime career for many.” (Boulding, 1978, p259).

War has affected economic history profoundly across space and time. Winners of wars have set the trade patterns and economic interactions. Wars are expensive, destructive, and disruptive. Big wars constitute severe shocks to the economies of participating countries. Notwithstanding some positive aspects of short-term stimulation and long-term destruction and rebuilding; in general, war impedes economic development and undermines prosperity. One of the most short-term economic effects of war could be pushing up the prices, and reducing living standards. Covering the war costs is a controversial issue for the countries. There exist some economic benefits in the war, especially for the nations that are involved out of their borders. War might stimulate an economy in the short run. It also may clear away outdated infrastructure and helps economy-wide rebuilding, generating long-run benefits. Technological development often follows military necessity during the wartime. Governments can coordinate research to produce new technologies implementing in wars, besides civilian uses. The role of war in the economy is complex. The shadow of war lies in economic history, influencing its pace and direction, and war continues to both shape economic developments and responds to them (Goldstein, 2003). Collier and Hoeffler show that the possession of natural resources increases the occurrence and duration of civil wars.

Nafziger and Auvinen (2003) argue that in the struggle for allies during the cold war, the Soviet Union and the United States provided military and economic aid to developing countries. Sovereignty provided the opportunity to extract resources from the major powers in exchange for diplomatic support. Since the end of the cold war, some states unable or unwilling to build a state bureaucracy have emphasized control over mineral resources, such as oil or diamonds, in demand internationally. Rulers or warlords in these states frequently profit more from war than from peace.

Boulding (1956, p113) claims that in the postwar period things go from worse to better, and in the prewar periods we see the reverse, just as in economic cycle. Mark Duffield (2001) defines new post-Cold War conflicts as an

ever-present axis around which opposing societies and complexes continually measure themselves and reorder social, economic, scientific and political life. Not only war is an axis of social reordering, historically it has been a dominant mechanism for the globalization of economic, political and scientific relations. In this respect, the development of the modern and centralized nation-state has been closely associated with the restricting and globalizing effects of war. The new wars reflect forms of authority that can mobilize the full potential of transborder trade. The exercise of this authority also amplifies the non-liberal characteristics of the shadow economy in general that relates to more than protectionism and various forms of regional competition.

On the other hand, Stiglitz (2008) argues that the war has led directly to the US economic slowdown. He shows that the Iraq war was a major factor increased the price of oil from \$25 per barrel to over \$100 while it didn't stimulate the economy at home. Besides, there might be a connection between the public opinion and president's performance because of the war, here at the United States regarding foreign relations and economy (Krosnick and Brannon, 1993) which can work as a double-edged sword.

Science might be recognized as the process of substitution an unimportant question that can be answered for important question that cannot (Boulding 1956, p146). Among the crucial questions that are hard to answer, in this study, I attempt to review and investigate the impact of US-involved abroad wars on its economy, and pose the question whether there is a tendency beyond the national defense, and provokes policy makers to divert the national resources to pursue wars while they can spend those more efficiently.

2. Data

Table one shows the wars that might have been affected the US economy directly or indirectly. Data extracted from different online data sources such as American History Timelines. It is interesting to know that European conflicts made their nations borrow resources most of the time from the US. Instability in the Europe during 18th and 19th centuries strengthened the US independence from England, France, and Spain.

Other macro data has been used from Federal Reserve Bank of St. Luis and World Bank. Gross Domestic Products, national defense, national debt, government spending, personal consumption, private investment and net export are normalized based on 2009, and all units are in Billion dollars.

2.1. National Defense as a Percentage of Government Spending

As it is shown in Figure (1), there was a big shift during the World War One and World War Two in the US budget for the national defense that went up to more than 70 percent. It did not decrease to its natural amount in the past century till after the Korean and Vietnam wars.

2.2 Unemployment

The rate of unemployment decreased dramatically during the First and especially Second World War as it is depicted in Figure (2). During Korean and Vietnam Wars, this amount perturbed around 3 percent. But after then, it has been fluctuating between 5 and 10 percent till now.

2.3 Inflation

Looking solely at the data, it seems there is no significant correlation between inflation and war, as we can see that during the First World War, the inflation raised dramatically but not for the Second World War. There is the same pattern for the Korean and Vietnam wars. The economy seems to be more stable after the great depression comparing to the previous century. As the economy grows, one expects to have inflation, though. The average inflation over past two centuries is about 2.6 percent that is less than the average growth rate for GDP.

2.4. Recession

As it is shown in Figure (4), the US have experienced enormous short time recessions during 19 century, which was involved the civilian war and domestic political instability. The US economy experienced a numerous up and down during that time but still had been growing even more than now. Business activities were so volatile during the First World War; nevertheless, it was the Second one that saved US economy as tortured western wealthy nations.

2.5 National Debt and Government Spending and Personal Consumption

National debt decreased during the first decade of 19 century. One of the possible reasons could be buying the gold and silver by Spain and Portuguese from the US because of the wars they have been involved.

Government spending did not change during the Napoleon war. The total average growth is about 16 percent for the period 1800~present. This amount increased to 26 percent till the First World War, and just about 7 percent

after that till now. There was a big jump in 1814-1816 which coincidence with the war of 1812. There was a significant recession back in 1839 which cause the national debt increased dramatically in the following years. Within the period 1800-1914, the government spending average growth was about 8 percent; comparing to that post-ante period that is 10 percent. By starting the civilian war, we see an increase in both government spending and national defense. National debt unprecedented increased during this period. While, it decreased after the war.

There is a noticeable shift in the US defense budget and national debt in the last year of the First World War. The reason might be that US have not been engaged directly in the war in the starting years. Government spending increased as it would have expected, starting from the First World War until the end of the Vietnam War annually up to 18 percent. The average GDP growth over the two past centuries is about 3.7 percent. The interesting point is that this amount for the period of 1800-1939 is almost the same as for the 1939-present. Interestingly, in 19 century the average growth rate was about 4.2 percent comparing to the 20 century that was 3.3 percent. 1929 is the year of starting the great depression. Personal consumptions decreased while the government did not increase the budget expenditures. After a while, government raised its spending to stimulate the economy that took sometimes to provoke it. But one can notice a big jump after 1941 – which the US officially declared to commit the war – in personal consumption, national debt and defense budget. Apparently, that was a boom for the US economy. Personal consumption has been growing at 3.2 percent annually. It has started to grow from the Second World War until the end of the Vietnam War which was about 4.1 percent.

After the WWII, the Macro Dynamic elements increased smoothly; the personal consumption experienced a higher level comparing to the other indicators. Also, the national debt sped up from 1981, mostly because of the presidential planning to push the economy by increasing the government spending while imposing the tax cut policy.

2.6 Net Export and Import

As it is shown in Figure (9), the net export balance went negative, starting 1976, and has been decreasing over the past two decades.

3. Analyzing Data

It is straight forward that to provide a fund for unexpected war, a government needs to either increases the tax rates or borrows the money by issuing the bonds. It is noticeable that the war causes a positive shock to GDP and decreases the rate of unemployment slightly; as a consequence, the national debt dramatically increases during this period. It seems that the policymakers overestimated the national income after the wars as the debt never has been decreasing in the twenty century. Even though, the net export-import decreases over time, and the capital flows slightly decreased after the recent recession. Personal consumption has been increasing over time; the recession would be a fact to decrease this amount but not the war. During the previous wars, the US government mostly provided the funds through monetary policy instead of the fiscal policy; that is one of the drivers that shifted in national debt dramatically, but only a bit of change in the slope of the consumption.

It is interesting that the personal consumption has been growing at 3.2 percent since 1929, comparing to the GDP growth rate that is 3.4 for the same period that point out the high rate of consumption comparing to the investment. Both individuals and government borrow money to finance or handle their budget – specifically in a case of overseas conflicts – and they seem to have no plan to pay it back at some level. And it is even more interesting to know that the growth rates for consumption and GDP are parallel starting from 1948 till now while in the mentioned period investment has been growing at 4.3 percent annually and the government spending has been increasing by 3.8 percent. Looking at the data, one will realize that starting from 70th the US has a negative balance of its international trade. The other point is the national debt has been growing at 3.5 percent annually. Combining all the mentioned facts, the marginal propensity consumption of the individuals is so high in the US. Individuals tend to consume in the present rather than invest for the future while overestimating their prospective income that together increases the debt steadily. The question is how far both government and people can borrow to consume? And who is going to pay this back? The best guess is the rest of the world.

War has a direct effect on the Government spending without any doubt. The percentage of the budget that has been dedicated to the defense budget had been increasing significantly during the war times. Considering the number of military forces who have been sent abroad to the more than one hundred US military bases, including the ones who are working in the US, supporting and organizing the overseas missions, one will notice that shutting down the bases and cutting the budget for national defense, might affect the unemployment more about

half a percent. But shifting the budget to other sections such as education and welfare would not create such the jobs opportunity to absorb the army forces. Cutting the taxes might cause some firms back to the industry and influences the job markets which there is still questionable. A substantial fact is that it takes a long-run plan to make these structural changes in job markets. However, there is a risk involved; shrinking the national defense budget and closing the bases would lower the defense power of the US which follows by three issues: first, unstable the territories that the US have been already protecting and unstable the economies of those regions that would cause adverse shocks for the US. Second, decreases the export of weapons as the both power of the US would decrease, and the budget for inventing new weapons would be cut, so no innovation no new arms no flirting Middle East countries and no export. And the last and the most important one, is by shrinking the US power other countries such as Russia would rise to take the US place, and this would change the power balance and affects the future economy bargaining power of the US.

Returning to the claimed roots of the war, one is accessing new markets and increasing the monopolistic power in those regions. If that is true, we might notice an improvement in net export trends which apparently is not the case. But the capital flows in has been increasing over past decades that indicate that while the non-financial trade balance of the US is negative, the financial balance is positive. While at the same time the national debt has been growing; that means the government overestimated the national income and the GDP has not been growing as fast as they had been anticipating. Thus, it might be the time for the policymakers to change their tactics in such a case that interfere any war indirectly vs. directly; as they have already started in Libya and Syria.

4. Empirical Results and Discussion

A possible and feasible causal model that may explain the effect of war on the U.S. economy is depicted in Figure ten. One of the challenges that this model is facing would be an existence of an unobserved variable that may affect both the independent variables – which is war in this case – and dependents. A possible solution to the existing issue is entering the lagged-dependent variable into the model to absorb the impact of the unobserved variable on the dependent. Implicitly, the proposed model is interpreted as Coleman's solution (Morgan & Winship, 2014), as it is shown in Figure eleven.

As, we are interested in the effects of war, not other elements, on the variety of Macro factors of the economy – such as personal consumption, GDP, national debt and etc. – I created a war dummy, as a treatment effect, for the years in which U.S. involved in the war and control for the other covariates to eliminate any possible back-path correlation between war and the dependent variables through constructing equation below:

$$(1) Y_{it} = \alpha + Y_{it-1} + \beta_i X_{it} + \gamma D_t + \varepsilon_{it}$$

In the above equation, Y_i 's are the different Macro elements; X_i 's are the covariates that are going to be controlled for, and D is the treatment dummy for the war.

4.1 Testing for serial correlation

Serial correlation can be caused by incorrect functional form, missing variable in time series analysis. To test for autocorrelation, I utilized the Breusch-Godfrey Lagrange Multiplier Test. The null hypothesis is that there is no serial correlation.

After testing the model, I found a strong serial correlation among the variables and error terms. Therefore, I used the generalized least-squares method to estimate the correlations between the variables in a linear regression model in which the errors are serially correlated. Especially, the errors are assumed to follow a first-order autoregressive process in this analysis.

4.2 Discussion

As it is shown in the Table (2), war has a positive effect on the both national defense and government budget, which was expected, and has a negative effect on unemployment but not statistically significant in 5 percent interval, in the long run (1872~2012). It implies that over the time, engaging in numerous wars might have decreased the rate of unemployment in the United States. Therefore, existing a direct relationship between poverty and unemployment stimulates policy makers to pursue wars as an indirect strategy to solve the unemployment issue, as well.

Table (4) shows the effect of war after 1990. While I did not find any significant effect in the period of 1960~2012, I was able to identify a positive impact of war on the personal consumption, in the short run; but a negative one on the export of goods and services and investment, which together may offset the impact on GDP.

Therefore, the above findings generate this illusion for the politicians in which wars may generate a positive stimulus for individual's consumption in the short run, and decrease the rate of unemployment in the long run, besides a non-pecuniary values such as controlling the flows of the power, and leads them to support and provide funds for war.

5. Conclusion

Over the past millenniums, there exists a balanced tradeoff between economic power and political stabilities. One the lost keys in this argument – which is less addressed academically – is the emergence of the wars. While some believe that national defense and world peace are the motives for the United States for sending more than hundred thousand troops across the ocean, at least during the past decades, other go beyond this belief and dispute that economic incentives and stabilize the authority power might be more acceptable or complementary explanation for these decisions. In this study, I reviewed the historical macro data for the United States and scrutinized the casual relation of war on the macro elements of the economy.

Results showed that there existed a positive effect of war on the government budget, but no significant impact on other elements in the long run; while war has a positive effect on the personal consumptions and the negative impact on the export of goods and services and private investment in the short run, correspondingly. The latter finding might have a controversial implication for the conservative policy makers who want to influence the public opinion in the short term period for the specific political issue such as an election; or either sacrifices the resources of the majority of the tax-payers for the minority group advantages.

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Tables

Table 1: US practical involvement in the Wars

1801	War of the Oranges
1807	Invasion of Portugal
1803~1815	Napoleonic Wars
1812~1815	War of 1812
1861~1865	American Civil War
1917~1918	WWI
1941~1945	WWII
1948~1949	Arab-Israeli War
1950~1953	Korean War
1965~1973	Vietnam War
1990~1991	Gulf War
2001~2002	War in Afghanistan
2003~2004	Iraq War
2011	Libya War

Table 2: The effect of war considering the lag of the dependent variables (1872~2012), and correcting for serial correlation

	(1)	(2)	(3)	(4)	(5)
	Gov. Budget	National defense	National debt	Unemployment	Inflation
War effect	58.39*	57.85***	22.75	-0.620	0.00833
	(2.29)	(3.84)	(0.65)	(-0.95)	(0.53)
GDP	0.0768*	0.0140*		-0.000557	0.00000784
	(2.37)	(2.11)		(-1.21)	(1.47)
National debt	0.0262	0.00104		0.000834	-0.0000110
	(0.93)	(0.12)		(1.48)	(-1.57)
Inflation	-8.568	8.516	-54.40	-7.492*	
	(-0.15)	(0.11)	(-0.34)	(-2.48)	
_cons	-24.66	8.585	-172.0*	5.989***	0.0313*
	(-1.26)	(0.57)	(-2.10)	(4.07)	(2.08)
DW Original	1.311	1.017	0.616	1.39	1.987
DW Transformed	1.905	1.76	1.549	1.87	2.014
DL/DU	(1.63-1.82)	(1.63-1.82)	(1.63-1.82)	(1.62-1.83)	(1.62-1.83)
N	141	141	141	141	141

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3: The effect of war considering the lag of the dependent variables (1960~2012) and correcting for serial correlation

	(1)	(2)	(3)	(4)	(5)
	Consumption	Investment	Nationaldefense	Net Export	Export
War effect	28.15	-38.91	-11.88	-0.203	-27.17
	(1.72)	(-1.15)	(-1.31)	(-0.01)	(-1.43)
GDP	0.577***	0.323***	0.00535	-0.0342***	0.0459***
	(14.87)	(8.06)	(0.89)	(-3.53)	(4.62)
National debt	0.0343*	-0.119***	0.00329	0.0187*	0.0616***
	(2.51)	(-4.26)	(0.45)	(2.24)	(5.59)
Inflation	211.8	724.7	-91.69	458.5	1443.3***
	(0.67)	(1.14)	(-0.54)	(1.27)	(4.04)
_cons	-355.7***	-714.0***	83.11	114.5*	-179.3***
	(-4.78)	(-4.04)	(1.75)	(2.55)	(-4.43)
DW Original	0.53	1.422	0.971	1.829	1.859
DW Transformed	1.794	1.872	1.674	2.034	1.918
DL/DU	(1.31-1.81)	(1.31-1.81)	(1.31-1.81)	(1.31-1.81)	(1.31-1.81)
N	53	53	53	53	53

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: The effect of war considering the lag of the dependent variables (1990~2012) and correcting for serial correlation

	(1)	(2)	(3)	(4)	(5)
	Consumption	Investment	National defense	Net Export	Export
War effect	51.65*	-65.74	14.11	-17.19	-76.57*
	(2.76)	(-1.35)	(1.30)	(-0.63)	(-2.21)
GDP	0.609***	0.354***	0.0141**	-0.194***	0.0536**
	(16.58)	(5.11)	(3.78)	(-6.74)	(3.25)
National	0.0232**	-0.115**	-0.0156*	0.0658***	0.0540**
	(3.14)	(-3.25)	(-2.51)	(4.28)	(3.74)
Inflation	-93.62	3429.2*	-1749.4*	-1768.1*	3980.8*
	(-0.17)	(2.32)	(-2.73)	(-2.28)	(2.74)
_cons	-702.5***	-1453.0**	-77.68	1443.2***	-339.9*
DW Original	1.437	0.924	2.004	1.341	2.188
DW Transformed	1.78	1.139	1.993	1.67	2.155
DL/DU	(0.8-2.06)	(0.8-2.06)	(0.8-2.06)	(0.8-2.06)	(0.8-2.06)
N	23	23	23	23	23

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

Figures:

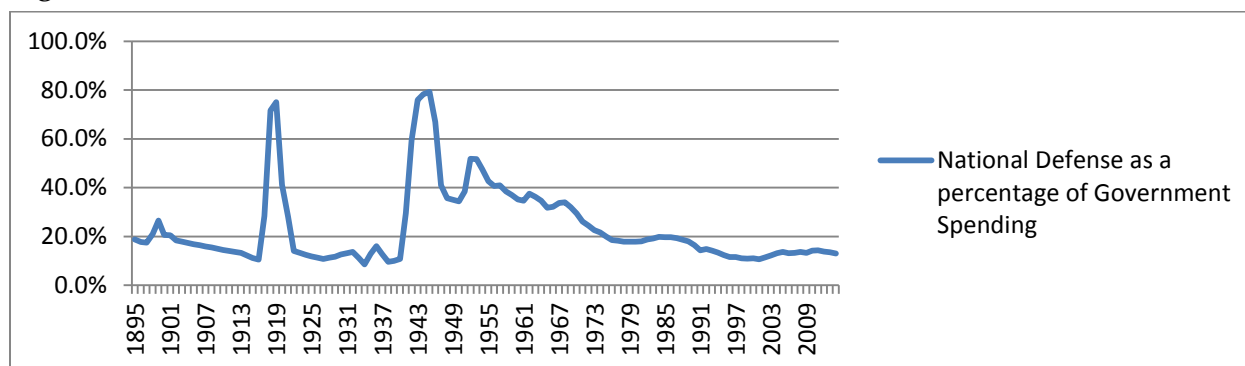


Figure 1: National Defense budget as a percentage of government spending

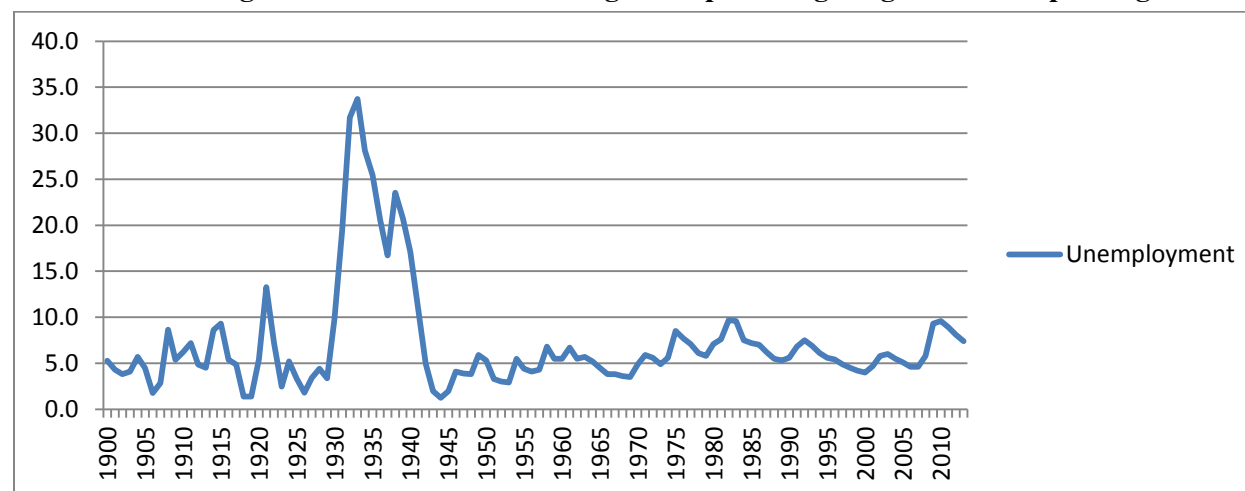


Figure 2: Rate of unemployment from 1900 to 2013

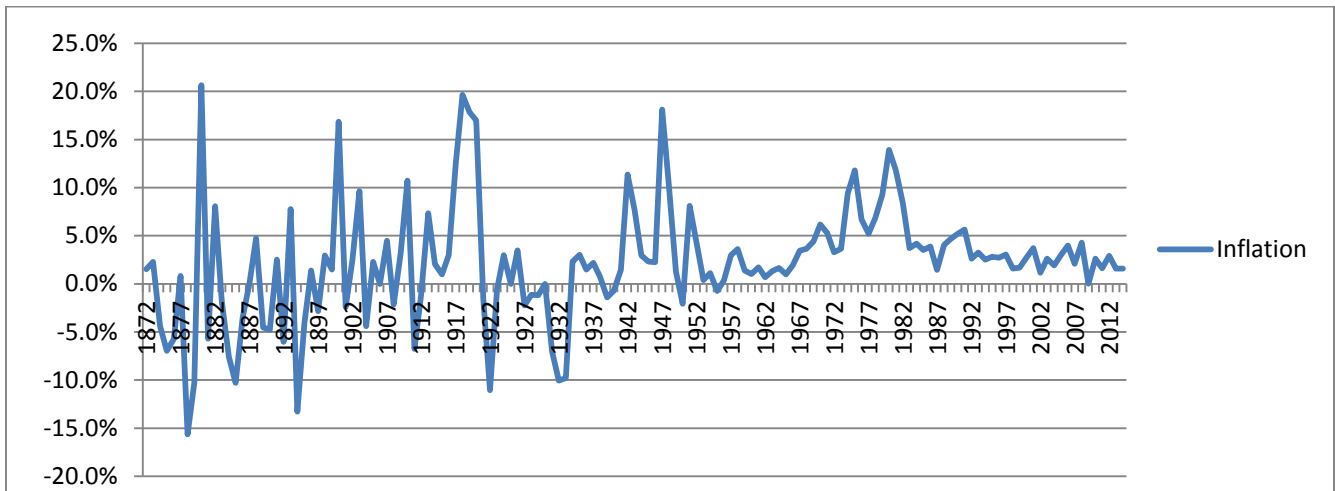


Figure 3: Rate of inflation from 1872 to 2013

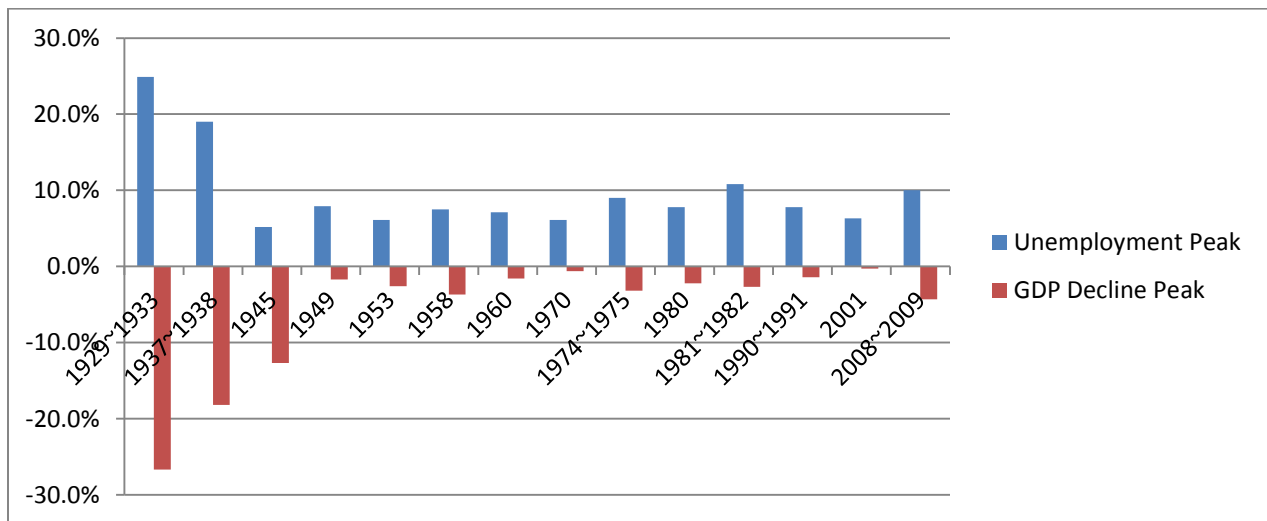


Figure 4: GDP decline and unemployment peak during the recessions

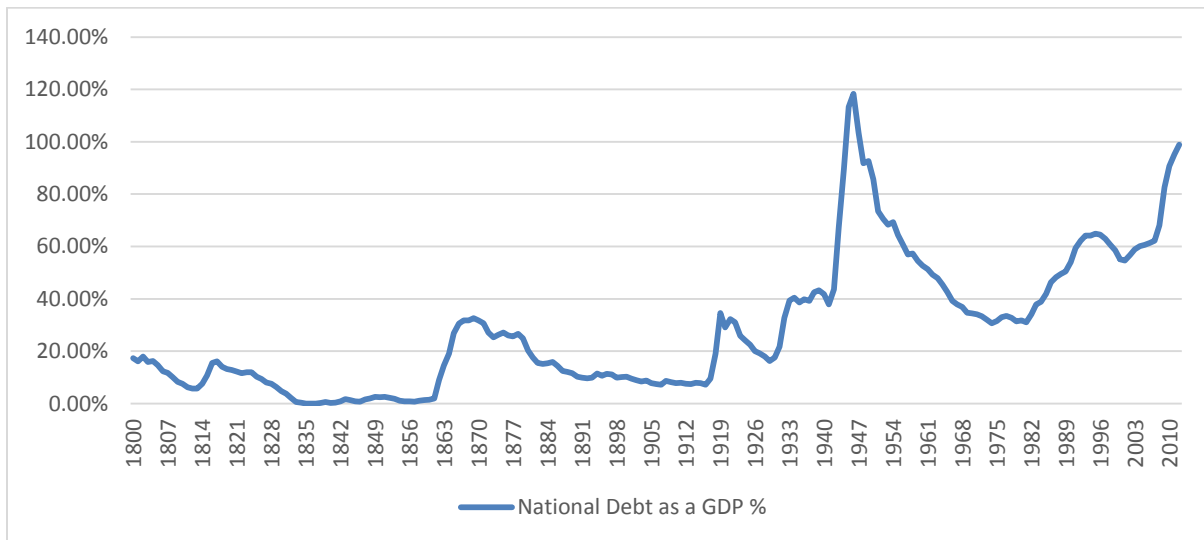


Figure 5: National debt as a percentage of GDP

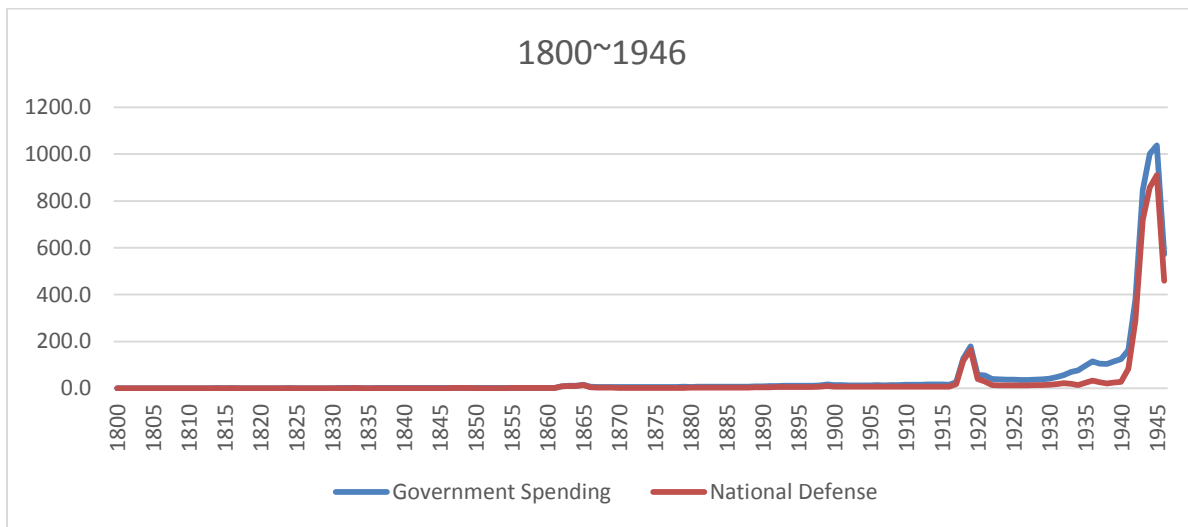


Figure 6: Government spending and national defense budget from 1800 to 1946

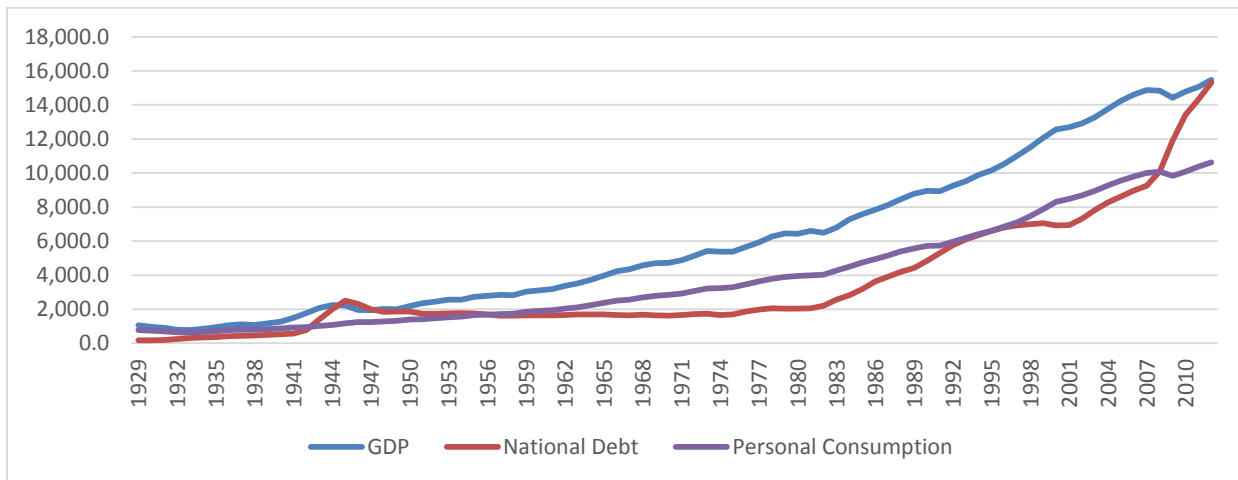


Figure 7: US GDP, national debt, and personal consumption from 1929 to 2012

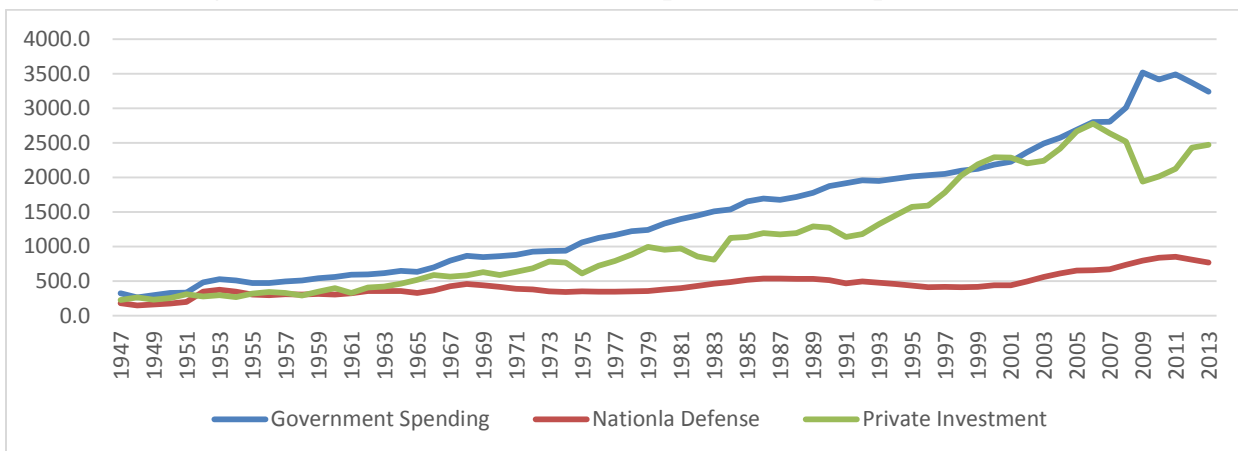


Figure 8: Government spending, defense budget and private investment from 1947 to 2013

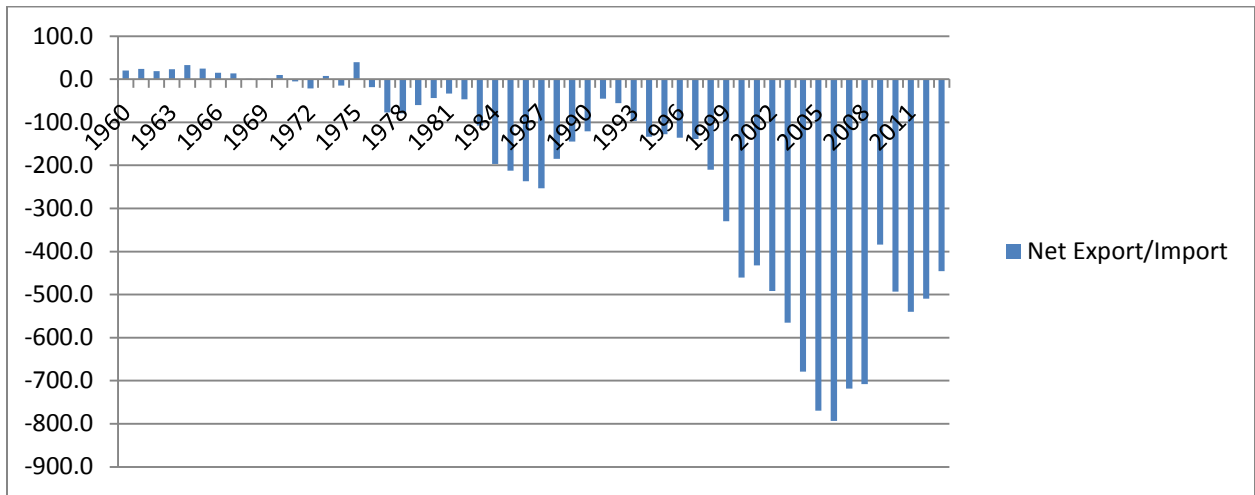


Figure 9: Net export from 1960 to 2013

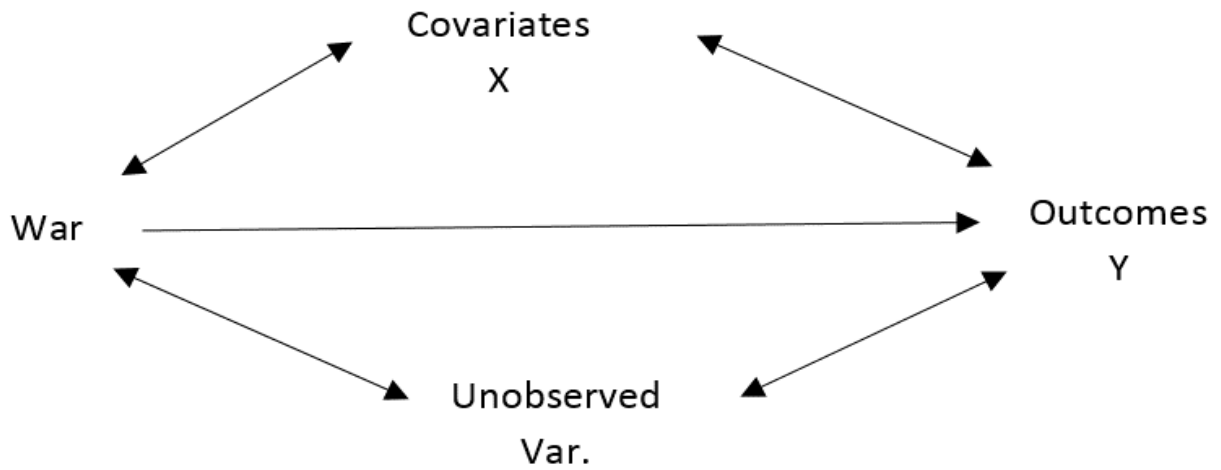


Figure 10: Existing an unobserved variable in the model

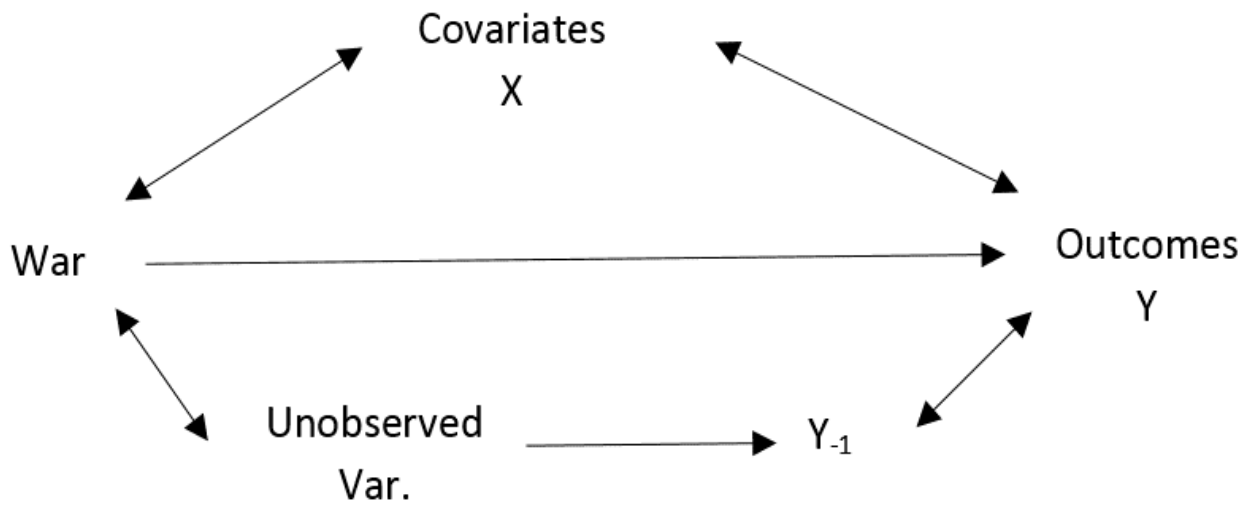


Figure 11: Possible solution for existing an unobserved variable