THE ECONOMICS OF PEACE

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1. Introduction

Most people prefer to live in a period of peace. Their reasons for doing so are usually social rather than economic, so they are more concerned with the safety of their family, community and themselves, a reduction in uncertainty, and the relative ease in making long-run plans compared to a time of war. These aspects of life may seem more important than questions of unemployment, low returns on investments, or lower profits.

According to all components of the media, periods of war are more exciting, dynamic, eventful, and memorable, whereas periods of peace are relatively calm and uneventful; in fact, peaceful. Many people involved in a war and survive will look back on that period and consider it the most interesting period of their life, whereas living through a period of peace will more likely produce, at best, an accumulation of accomplishment.

It is worth noting that many European countries have enjoyed a period of peace extending over almost sixty years (from 1945) and some Asian countries have had peace for thirty years (since the end of the Vietnam War).

I will be discussing the economy of a country at peace. Naturally, it will be important to compare the economy of a country at peace with a country at war. At the end of the paper, I will turn to an important question: Can a country at peace take any economic steps that will improve its chances of staying at peace?

Several types of war can be considered:

- "Total War" in which virtually the whole country is involved as occurred with a number of countries in the First World War (originally known as the "Great War" or the "World to End All Wars"), and the Second World War. Most full-scale civil wars fall into this category.
- "Partial Wars" in which only part of the country is dramatically involved, particularly the military, although some civilians are also included in certain types of civil wars.

  Some wars can be partial for some combatant and full for others, such as those fought in Korea, Vietnam, and Iraq.

A class that has received more attention in recent years involves terrorism, which is a kind of partial war and will be discussed separately.

Peace will be considered as taking place when there is no full or partial war occurring in a country with the exception of terrorism.

I should say that I have found very little literature on "the economics of peace" but a great deal on the "economics of war," particularly on the costs and how to pay for the war; and also on the transition periods from war to peace, including at the end of the Cold War, when there is considerable discussion of the "peace (or disarmament) benefit". This is usually found to be disappointing in size and to be slow in appearing. A famous book by Keynes (1920) argued that the victors in World War I should not require excessive repayments from Germany. Keynes was correct, the allies chose badly and their decision probably helped to bring on the Great Depression, the hyperinflation in Germany, and the rise of Hitler.

The sequence just outlined is just one of several which indicates the effects of economics on war and peace. Other examples could be the huge expenditure on defense by Reagan which the communists in Soviet Union could not match, bringing down that regime, and the very high production capabilities of the United States in the middle of the World War II that ensured that commercial ships could be produced quicker than the German submarines could sink them.

1. Comparative States of Economies at War and Peace

In general terms, these are the relative differences for the same economy in different war or peace situations:

Concept	Complete War	Partial War	Peace
Social Structure	Dynamic, Changing	->	Stable
Unemployment	Lower	(unclear)	Higher
Risk Level	Higher	Higher	Lower
Interest Rates	Higher	->	Lower
Prices / Inflation	Controlled?	->	Produced by Economy
Trade	Constrained / Limited	Influenced?	Promotion of Trade
Exchange Rates	Volatile	->	Standard Movement
Investment Level	High (high return)	Quite High	Relatively Low
Government Debt	Increasing	Increasing	Decreasing / In Control

(symbol -> means "same as")

There are two clear features of the table:

i. Partial wars, if they are not too large, have economies more like a peace economy rather than a complete war economy; and

ii. The "costs" of a peace economy compared to a war economy are:

   a. lower returns, to produce the lower risk, for investment; and

   b. higher unemployment versus conscripted full employment in a war economy.

If lower risk does translate to lower interest rates this will imply lower discount rates on future earnings for investments. If an investment of \$1 is to pay a return of \$k in n years' time, the "present value" of that return is usual taken to be $\delta^n k$ where δ is the discount value, some number less than one. This just reflects the basic fact that a unit of money (say dollars) received now is worth more to me than the same amount to be received in a year's time.

This impacts on a basic result from industrial organization theory concerning the choice of investment projects. Suppose that two projects are being consider by a company, and that each are believed to give a particular flow of profits in future years. Project A produces good, high profits in the first few years but quickly goes to very small profits in later years. Project B produces sound, but never very exciting profits in any year, but these keep coming into the distant future. Which project should the company choose?

The value of the project can be written as

$$Value = \frac{P_1}{(1+r)} + \frac{P_2}{(1+r)^2} + \frac{P_3}{(1+r)^3} ..,$$

or, more formally

$$Value = \sum P_j \,/(1+r)^j$$

where P_j is the profit in the year j and $1/(1+r)^j$ is the discount rate in the *j*th year, r may correspond to an interest rate. If r is high, the discounts will decrease quickly and most of the weight is on the early profits. If r is low, all profits will contribute to the value, as shown in diagram A. Thus, in a war economy, with high interest rates (r) and thus large discounts, the favorite investment projects will have large initial pay-offs, but no sustained dividends. On the other hand, in the peace economy, with lower interest rates, and smaller discount rates, projects that pay off over long periods will be competitive. In peace, the portfolio of investment will be larger and will contain more stable investments; so that families and business can consider their long-term plans and governments spend more on infrastructure of general usefulness, such as roads, schools, universities, and art museums. The pace of life will be slower (but emotionally richer) in peace and the good aspects will accumulate.

Of course, a small partial war or a terrorist attack could deflect the economy from its preferred path, but only temporarily.

Is there any empirical evidence to support the suggestion in the table? It is clear that many European and the U.S. economies changed substantially during the First World War (WWI) and during the Second World War (WWII). The period between these two wars was difficult socially, politically, and economically, and could hardly be called a typical peace time period.

In peace time interest rates can be driven by major economic forces or be used as policy instruments and so can affect discount rates in a variety of ways. Risk or uncertainty is often associated with measures of volatility on stock markets and commodity markets. A fairly casual analysis did not see any clear relationship in the United States between market volatilities and the occurrences of the numerous partial wars: Korea, Vietnam, Panama, 1st Gulf War, for example, although there is sometimes an increase in volatility at the start of such a war. There is evidence from Dr. Marcelle Chauvet (University of California, Riverside) that the U.S. macro series volatility changes with the occurrence of these partial wars. She wrote me saying that her study using a Markov switching model, with two states, found that:

i. volatility of change in GDP increased substantially at the start of the Korean war and during the 1St Gulf War;
ii. there was less impact during the Vietnam War, which was a very lengthy one;
iii. for the 2nd Gulf War, volatility did not increase very much during the war, but did increase substantially before it. There was a period when the war was being discussed;
iv. "The uncertain times before the beginning of wars is when the volatility increases even more;" an anticipation effect.

3. The Neutrals

Some countries avoid war by declaring themselves to be neutral. In general terms, a neutral country will not help, or hinder, any country involved in a conflict. They will not allow transportation of troops or war materials across their territory, but they will keep trading goods at the same levels as during the previous few pre-war years. A neutral country will not usually join groups of countries that aim to be jointly-protective, such as NATO.

In Europe the two best know, most successful neutrals are Sweden and Switzerland. Both are wealthy and their countries contain a great deal of very difficult terrain, and they are heavily armed. To invade them is expensive. Machiavelli said "The Swiss will always be free because they will always be armed." Just to show some figures, in 2002 Switzerland spent USD $2,600 million on military expenditures (1.1% of GDP) and Sweden spent USD $4,600 million (2% of GDP). For comparison the U.S. spend sixty times as much (3.1% of GDP).

Switzerland has been neutral since the 16th century, and Sweden since the 19th century. Between the two world wars, Ireland, Austria, and Finland became neutrals, and in 1939 the US declared itself neutral. Ireland was the only one to survive WWII largely intact as Austria was invaded by Germany, Finland by Russia, and the USA was attached by Japan at Pearl Harbor, Hawaii. Clearly, declaring oneself neutral is not necessarily a good defensive strategy.. Since WWII a number of countries have declared themselves neutral for periods, including Spain, Portugal, Costa Rica, and India.

To see how a declaration of neutrality worked during the first two World Wars, Yongil Jeon and I investigated the behavior of DGP and birth rates for three groups of European countries which we designated "combatants," "neighbors," and "neutrals."

For the period 1871 to 1937 the countries involved were

Combatants: Germany, France, and Great Britain

Neighboring: Belgium, The Netherlands, Spain, and Italy

Neutral: Sweden and Switzerland

For the period 1938 — 1993

Combatants: Germany, France, Great Britain, and Italy

Neighboring: Belgium, The Netherlands, Spain, Denmark, and Norway

Neutral: Sweden and Switzerland

Some countries were excluded because of data limitations. The United States was excluded because it was involved in the wars for shorter periods, and participants in the Asian parts of WWII have not been included in this exploratory exercise as we had no data for many countries in that war theater. Unfortunately also we had no data for the Soviet Union to include that important country in the European part of the study..

Three dummies are used in the regression reported later, for WWI: 1914-1918; WWII: 1940-1945; and for the Marshall Plan: 1948-1952. The two data series used GDP growth rate as a measure of the success of the economy, and birth rate as a measure of the stability of the society. We would have preferred to use a consumption measure rather than GNP but we had difficulty in finding suitable data.

It should be remembered that there are some very important non-war related dates between the wars, 1918 was the year of the deadly influenza attach that killed many around the world; and 1929 was the start of the great economic depression.

The plots of GDP growth show different behavior for the three groups of countries, on Figures 1B, C, and D. The combatant growth rates are much more volatile from the start of WWI to the end of WWII. The tremendous benefits of the Marshall Plan to the combatant nations can be seen by comparing their growth behavior after WWII to after WWI. The neighbor countries clearly suffered much more in WWII when most of them were occupied than in WWI. The neutrals did surprisingly poorly in WWI, but generally had a rather stable growth rate through the whole period after the end of WWI, except for the great depression. There could be some stability effects from not being directly involved in a world war.

All birth rates were affected by World War I, but especially the combatants and neighbors. These effects are less clear-cut in the in World War II; in fact, neutral rates go up, possibly because of immigration. Despite the two wars, the general downward trend continues for all groups of countries.

In the regressions two dependent variables were used, the level of birth rates and the growth rate of GDP. The explanatory variables are dummies for each of the two World Wars and another for the Marshall plan. The data was annual for the period 1900 to 1970 and involved the set of countries mentioned earlier, giving a data set of about n=850.

Level of Birth Rates

Birth rates lagged, has coeff. of 0.95, t-value of 113.8

	Combatants	Neighbors	Neutral
No dummy	0.4 (0.8)	.16 (1.1)	-0.1 (-0.7)
WWI	-1.8* (-2.9)	-1.2* (-2.8)	-0.4 (-1.7)
WWII	-0.4 (-1.5)	0.6 (1.5)	.93* (4.05)
Marshall	-.61 (1.1)	-.55* (-2.9)	-.40* (-2.95)

(constant =0.85)

Growth Rates

Coefficients are shown; t-values in brackets

	Combatants	Neighbors	Neutrals
No dummy	01 (0.8)	0.00 (0.8)	.01 (1.1)
I	-.06* (-2.6)	-.04* (-2.5)	-.06* (-3.7)
WWII	-.08* (-3.5)	-.06* (-3.4)	0.00 (-.13)
Marshall	0.4 (0.8) (1.3) (-1.0)	.01	-.01

(constant 0.022 for whole equation; * indicates a clearly significant t-value)

The birth rate results suggest that in the first War combatants and neighbors had societies that were badly disrupted by the war, but not the neutrals. In general, the disruption was less in the second War, but the neutrals had a significant increase in population. The effects of the Marshall plan on the birth rates is difficult to interpret, except that all countries seem to be following the same downward path shown throughout the twentieth century.

The growth rate results suggest that all countries suffered during the first War but not the neutrals during the second War. The Marshall plan seems to have had a very small effect on growth rates, but at least they were not substantially negative.

This section started off with the implicit question: does it pay to be a neutral? The experiences of the two most famous European neutral countries, Switzerland and Sweden, during the tumultuous twentieth century would seem to be generally "yes." They started the century relatively successful and have maintained that position through the century. They do not appear to have gained a great deal in terms of value-added or overall wealth, although that has not been properly measured here, but they have benefited from relative stability in growth rates and birth rates.

However, becoming a successful neutral country is a difficult path to take.

4. The Economics in Peacetime, The Reality

The tranquil, peaceful economy discussed previously with decreased risks and volatility, and more opportunities to make long-term plans is only a theoretical concept of how an economy at peace should appear. Actual economies could be quite different, with dramatic swings from poverty to wealth and back as business cycles and bubbles occur; period of very high inflation or high unemployment can produce civil unrest and even the seeds of civil war.

We can briefly consider Britain as ,possibly, a typical case. Before WWI the government took a "laissez faire" attitude and made little attempt to influence the economy. The unemployment rate was variable, often in a 5% to 10% range. During WWI the government took control of prices and employment, with unemployment taking a historically low value. Immediately after WWI the economy did really move, with the so-called "re-stocking boom" of 1919-20, but soon afterwards unemployment rapidly rose to over 15%, with a peak at about 23%. There was a General Strike in 1926 and in 1929 came the Great Slump (the British term for the Great Depression), which lasted until 1932. In that period unemployment went over 25% briefly but was always over 10% until the country started to re-arm in readiness for WWII. The economy made a general recovery from 1932 to 1937 when there was a hard business-cycle downturn.

During WWII there was no unemployment and post WWII it remained at about 2% to 3% for twenty-five years until 1975. The following twenty-five years shows rather high rates, but less volatility as governments were making attempts to control such variables.

The distinct differences between the European economies in the fifteen years or so after WWI and the same period after WWII is, I suppose, entirely explained by the treatment of the defeated countries in the two cases. After WWII the generous Marshall Plan helped both victors and vanquished to quickly get back on their feet economically. In fact, during the period 1950 — 1960, Japan and Germany were two of the fastest growing nations in the world.

Contrast this situation with Germany at the end of 1919. (For what follows note that in the early part of the twentieth century coal had the central economic importance that oil had at the end of the century — as the universal source of energy for factories and transportation). The victors required that Germany release Austria and Poland, give back Alsace and Lorraine to France, and also give the Saar region to France. These were all important industrial and coal producing regions. A variety of fines were also levied in terms of coal deliveries which eventually left Germany with about 50% of its pre-war coal production for use by its own industry. There was also a monetary fine of US$20 billion to be paid over the next twenty years.

It is not for economists to discuss whether such a settlement is fair, but they can predict the outcome of requiring such payments in money and kind. Keynes (1920) gave a carefully reasoned but emotional plea for the settlement to be much reduced. He predicted that the core economies of Europe would be unstable for years. Lenin predicted high inflation and Keynes agreed. They were correct but the politicians ignored their advice. After WWII the situation was handled better.

5. The Economics of Terrorism

Discussion of this important topic lays outside the plans for this paper. There is already a substantial literature in the area; for example, the European Journal of Political Economy has a special issue on the topic, volume 20, June 2004. To get a measure on the scale of the problem, in the period 1968 to 2001 there were about twelve thousand terrorists events globally, with about twenty thousand killed and fifty thousand wounded in total. To put this into perspective, there are forty thousand people killed annually on U.S. highways. There does not seem to be a trend over that period. The industries most affected are travel, airlines, shipping, and trucking.

The economic effects of even an extreme event such as occurred on September 11th ,2001 in New York were very substantial for many individuals ,for some companies and for the City of New York itself, yet the effect on the total US economy was not extensive, so large and robust is that economy. Even the particular industries most under attack, The New York Stock Exchange and the associated investment community were quickly back in operation and performing at efficient levels. The attack produced a change in attitudes in the United States but the economy has been little affected.

6. Can Economies Deliver Peace?

The challenging question for economists is: if an economy is enjoying a period of peace, are there things that can be done economically to help maintain the peace? Questions of the maintenance of peace are usually considered by politicians, such as what group of nations to join, what level of military expenditure is appropriate, or what types of weapons to purchase? It may be difficult to keep peace if there is a repressed minority in a country, but in the short-run this is a political rather than an economic problem.

The question of where do wars originate is certainly not a simple one. For many countries enjoying a peace a change to war would be generated externally. Countries can try to increase the costs of wars to others by generating strong trade ties with the aggressor and other countries, which would be lost in the advent of a war.

If the war movement is being generated internally, the body politic and general population need to be aware of the full economic costs plus the possible benefits. A proposed projected balance sheet of who would be better off economically and whom worse off, and by how much, could be made available for general discussion. In fact, there could be several such projections under different sets of assumptions and looking over several horizons.

During a war certain firms and industries make very high profits, as may be expected from a high discount and high-risk period. Whether the profits achieved are unfairly high has to be discussed by government lawyers. The worry amongst the public is that to gain access to these exceptional profits companies may bribe some politicians to support the war effort. One method of preventing such problems, at least during complete wars, is by nationalizing the firms, so putting them into the ownership of the government. I believe this happened in Britain in WWII. Even a positive probability of this happening would reduce the enthusiasm for a war by potential profiteers.

In a conference on peace at the University of San Diego, a delegate, Raya Kadgrova, stated "We have to make peace as profitable as war." With an active, largely uncontrolled economy, the number of investment opportunities will be extensive, and by chance, some will be innovative and very profitable. One needs an economy with plenty of venture capital. Thus high profits are possible, but they are less certain than those from a war economy and so have a different kind of appeal.

A satirical discussion of how the economy could be kept healthy in peacetime was written by the journalist L. Lewis in the book "Report from Iron Mountain," Simon and Schuster, 1967. The report claimed to be from a high-level government official think-tank asking how government expenditure could be kept high in peacetime, so keeping the economy active, taking a Keynesian multiplier viewpoint. It was suggested that expensive institutions be created that would mimic some economics functions of war. I have added some current versions in brackets:

a. comprehensive social welfare program to maximize the improvement of general conditions of life [current war on poverty, health costs for elderly];

b. a giant open-ended space-research program, aimed at unreachable targets [a visit to Mars!];

c. invent "alternative enemies" such as reporting an extraterrestrial threat, massive global environmental pollution or omnipotent international police force [global warming perhaps fits here];

A few years after publication the report was admitted to being a hoax, but it did produce a great deal of interesting discussion. The report appeared at a controversial time towards the end of the Vietnam War when civil unrest about the conduct of the war was high. The proposals in the report, rather tongue in cheek, is that for a sound economy, government expenditure needed to stay high, so some of the expensive but perhaps unnecessary projects should be initiated.

Since the time of this discussion, the relative importance of government expenditure has declined substantially as a percentage of total National Output. An example for a major component of that, military expenditures, is shown plotted for the United States from 1940 to 2003. There is a very substantial peak for WWII, a clear peak for the Korean War, a high plateau for the Vietnam War and the Cold War, ending in the mid-1970's. Since then the ratio has been steadily decreasing. This has occurred even though military expenditure has remained high and growing, but the total economy has been growing more rapidly.

A consequence now, which has to be a worry to those with a strong peace preference, is that partial wars are clearly getting more affordable. The First and Second Gulf Wars each cost approximately $200 billion, but the second is a much smaller percentage of the current GNP than the first. Partial wars of this kind are, certainly, very costly in purely economic terms, let alone using humanitarian measures, but the impact on the full economy is getting smaller, so that politicians who are so inclined, may be less influenced by economic reasoning. It might be concluded that the economic measures being used are not capturing the full impact correctly.

7. Alternative Measures of Well-Being

It has been said that early economists, such as Adam Smith and Thomas Malthus "considered happiness to be the ultimate good of all economic activities" (J. Heard). Only when the "pursuit of happiness" became "the pursuit of wealth" did economics become know as "the dismal science."

The standard measures of the strength of an economy are Gross National Product (GNP) or Gross Domestic Product (GDP), usually considered per capita. These figures will appear quarterly or annually, are rather expensive to gather, and are designed to produce some measure of the average wealth per person generated by the economy. They are essentially based on the National Accounts, which is an intellectually sound concept conceived at a time when the major economies were dominated by farming and by industry. Now that the service industry is dominating in most leading economies, and is difficult to measure, the accounts may be less successful.

For alternative approaches to this standard "western" one it could be helpful to turn to the attitude of non-western religions. A request to the "Islamic World Net" produced the suggestion that consideration be given to alms giving as an appropriate measure. Such giving (called "Zakat" or "Zakah") is a non-compulsory offering to a charity organized by a mosque (it may be obligatory if one's income is high enough). Thus one only gives if one is happy. The charity helps the poor. The more who receive Zakat, the lower the quality of life in the region. Perhaps the total amount given to charity per capita would be a possible measure of well being?

In a well-known but old paper on "Buddhist Economics" in 1966 by E.F. Schumacher, it is stated that amongst Buddhists, the creative activity, that is work, is more important than consumption. Thus an appropriate measure would be based on the number of hours, on average, worked per man, up to the maximum required. Work by women would have to be considered in a different way.

A Jewish economist suggested that education is particularly important to Jews, so a measure of the amount of time or money spent by a community on education would convey their success or otherwise. Quality would have to be controlled carefully.

There seems to be no lack of alternative measurements available, and this could be an attractive area for future study.

8. Ask The People

A common way to discover how the public feel about some topic is just to ask them. Many countries now have Surveys of Consumer Sentiment in which people are asked how happy they are, especially about the economy. A typical question is the ask if you are better off today than a year ago. These surveys are now taken quite seriously as possible leading indicators or consumption or investment. The technique is known as 'contingent-valuation'.

A different type of survey will ask households how much they would be willing to pay for some desirable social development. An example is a paper by Ludwig and Cook (2001) which asked about a possible tax increase to pay for a reduction in gun violence. Households were asked if they would agree to pay $M extra taxes and several possible vales of M were used but only one per household and the numbers were allocated randomly. Responses were either positive, corresponding to a `willing to pay' or WTP at the M value mentioned, or they could say `no'. Generally it was found that WTP increased with family size and with income. The survey conducted in 1998, I believe, found the following distribution of WTP;

Amount (M) $	WTP,%
25	82
50	76
100	69
200	64
400	38

So that 76% are willing to pay $50 extra taxes a year to cut down on guns whereas 64% would be willing to an extra $200 in taxes. If correct, these would generate some very large amounts of money, given that there are one hundred million households in the States, so that $100 each would raise ten billion dollars.

Turning to Peace, presumably people would be prepared to pay something for the continuation of peace and a contingent-valuation survey could discover how much. I understand that no such study has been conducted. Of course , it will have to be discussed how any funds that are raised should be used and that may vary from one country to another. This is another area that may be worth exploring.

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