An Empirical Investigation of the Characteristics of Peaceful Countries

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Abstract

This paper uses cross country regression analysis to look at the relationship between peace and per capita income, and, to see, after adjusting for per capita income, whether democracy and globalization are relevant for peace. The results suggest that there is an inverted U shaped relationship between peace and per capita income, and that both democracy and globalization are important factors, favorable important factors, for peace.

Keywords: Peace, Development, Per capita income, Democracy, Globalization, Size of military, Prevention of war.

Introduction

In a world in which poverty is widespread, increasing output and improving the standard of living for the common man is of utmost importance. Peace is critical here. Maintaining peace is fundamental for providing a promising environment for production, and for establishing the necessary underpinnings for a socially beneficial allocation of society's resources. Production needs to be maximized, and resources need to be devoted to making goods for consumption, investment, and infrastructure, not for war. Besides wars dire costs in human suffering and misery, war has a multitude of undesirable negative consequences, economic as well as other. War has lasting negative psychological and philosophical effects on people and society. War, the fear of war, shifts precious resources from production of consumer and investment goods to the production of military hardware. War destroys and disables land, labor, and capital, thereby shifting the production possibilities curve inward, reducing the maximum possible production of society for any given level of technology.

Recently, the Institute for Economics & Peace has come up with a sophisticated new measure of peace. The purpose of this paper is to use the new measure to investigate the potential effect of the level of economic development, the extent of democracy, and the degree of globalization on peace.

The article is composed of five parts. The first part offers some context for the paper by reviewing a few of the recent articles in the area. The second section discusses a simple single equation model that provides the framework for the empirical analysis. The third section discusses the actual variables that are used in the cross country regressions, and, in addition, identifies their sources. The fourth section presents and analyzes the results of the cross country regressions of peace on per capita income, democracy, and trade openness. The fifth section concludes.

Some Recent Background Literature

Gelpi and Grieco, using paired country data on international conflict initiation for the years 1950 to 1992, conclude that democracies are less prone to start disputes, and that trade dependence reduces dispute initiation for democratic countries but not for autocratic states (Gelpi and Grieco 2008).

Jon Barnett integrates Johan Galtung's theory of peace as the absence of structural and direct violence with Amartya Sen's theory of economic development as freedom to form a new theory of peace as freedom (Jon Barnett 2008). In his peace as freedom theory, anything that infringes upon freedom or reduces freedom, such as the lack of social and economic opportunities, or the absence of equity guarantees, are potential sources of violence in society.

Ohlson classifies the causes of intrastate conflict into the three different categories of reasons, resources, and resolve, and advocates the use of this categorical framework for greater understanding of the various stages in the process of conflict resolution (Ohlson 2008). He suggests that the classification framework is likely to be helpful for analyzing the causes of war, the dynamics of war, the means of preventing war, and for integrating the work in the area of causation of conflicts with that undertaken in the area of conflict resolution.

Employing dyad country data from 1885 through 1992, Mousseau, Hegre, and Oneal use logistic regression analysis with interaction terms to look at the conditioned effect of democracy and economic interdependence, when adjusting for the level of economic development, on the likelihood of fatal military disputes between nations (Mousseau, Hegre, and Oneal 2003). Their major finding is that while the positive effect of economic interdependence is independent and unconditioned by the level of economic development, the effect of democracy is contingent on the level of economic development, so that, policies promoting democracy in countries below a certain level of economic development may actually be harmful and lead to an increase of the chances of fatal disputes.

Scott finds the two theories used to explain the linkage, the causal mechanism, between democracy and peace, first, that democracy provides institutional constraints favorable to peace, and, second, that democracy is more peace loving because it fosters values such as equality and respect for human rights, unconvincing (Scott 2008-09).

Scott suggests that Rene Girard's theory of violence based on desire, the mimicking of others, and scapgoating of out groups to release within group tension, should seriously be considered as an alternative. Girardian theory maintains that we must have some understanding of the causes and the reasons for the perpetuation of violence in order to have any chance of establishing and maintaining a genuine peace. Scott contends that the empirical observation (as he interprets the empirical findings with regard to democracy and peace), that democracies are peaceable with regard to each other, but not with regard to nondemocratic countries, can readily be explained within a Girardian framework. While democratic countries mimic each other, nondemocratic countries are used as scapegoats to remove the tensions between the democratic countries themselves.

With a special focus on Africa, Selassie discusses the relationship between peace, democracy and globalization (Selassie 2011). He sees democracy, the true democratic participation of people, as a required condition for peaceful relations within and between nations, and peace as the necessary condition for the existence and the flourishing of trade and globalization.

McDonald sees the potential losers from free trade within a country, home import competing industries that may see their incomes decline due to foreign competition, as not only favoring protectionism, but as also, by the same process, enhancing the power of groups that are more disposed toward wars (McDonald 2004).

Using two different measures of protectionism, and adjusting for other variables commonly used to explain military disputes such as geographic proximity, economic interdependence, and democracy, he finds, in his logistic regressions on dyad country data, that protectionism is both statistically significant and quantitatively substantial in magnitude in terms of increasing the likelihood of military conflict.

The Model: The Hypothesized Relationship between Peace, Income, Democracy, and Globalization

The model is a single equation. The equation is as follows.

$$P = f(Y, D, G, M) \quad \delta P/\delta Y > 0, \ \delta^2 P/\delta^2 Y < 0, \ \delta P/\delta D > 0, \ \delta P/\delta G > 0, \ \delta P/\delta M < 0$$

In the equation, P stands for peace, Y for income per capita or the level of economic development, D for democracy, G for Globalization, and M for military size.
The equation states that peace depends on per capita income or the level of economic development, the extent of democracy, the amount of globalization, and the size of the military.

The hypothesized relationship between peace and the level of income per capita is predicted to be nonlinear. It is anticipated that when a country moves from being poor to being rich, at first, increases in income per capita increase its peacefulness, but, beyond a threshold level of development, further increases in income per capita reduce its peacefulness. In other words, the relationship between peace and income per capita is expected to be an inverted U so that increases in income per capita at first increase peace, but, beyond some threshold level of income per capita, further increases in income per capita reduce peace. The essential idea is that, once a country achieves a certain level of economic development, then the country increasingly engages in international affairs, and becomes more and more a world player with its concomitant need for greater military build-up.

The partial derivative between peace and democracy is positive. Democracy is expected to be favorable for peace. During World War II, it was, not the democracies, but, the strong dictatorial powers, Germany, Italy, and Japan that sought greater power and glory through aggression, and potential conquest and acquisition of other countries. The ordinary people in a country, who generally pay the real cost of war in terms of blood, hardship, and tears, are less likely than elitist leaders to engage in wars, and the common people have greater say and influence the more democratically orientated a nation.

Globalization is also expected to be positive for peace. The greater the degree of globalization, the more integrated nations will be. The greater is the symbiotic relationship between nations, the more the prosperity of one nation depends on the health of other nations, the less any one nation is likely to engage in actions detrimental to other nations, since such actions will reverberate through the system and eventually have negative repercussions on its own health.

Lastly, arms build-up, greater military size, is predicted to reduce peace. When one has any product or service, it is human nature to want to use it to see what it can do--what is the use of having it otherwise. Bigger military tempts nations to greater employment and use of military forces, and for coming up with new rationalizations for their use.

The Variables and Their Sources

The measure of peace is five minus the Global Peace Index for 2010 of the Institute for Economics & Peace for 2010 (Institute for Economics & Peace 2010). The index ranges from a low value of one to a high value of five with higher values indicating less peace.
The income variable is real GDP per capita in 2000 U.S. dollars for the year 2005. The data for the variable comes from the World Bank (World Bank 2011). The variable is identified with the variable name GDPPC.
Democracy is captured by utilizing the Economist democracy index for 2008 of the Economist's intelligence unit (The Economist 2008). The index varies between zero and ten with higher values indicating greater democracy. It is identified with the variable name DEMOCRACY. The percentage of trade to GDP is employed to quantify the extent of globalization and economic integration, and the measure of military size is the percentage of military spending to GDP for 2005.

The variables are labeled with the variable names TRADETOGDP and MILITARYTOGDP. The numbers for both variables come from the World Bank (World Bank 2011).

The Cross Country Empirical Results

Table I shows the results of cross country regressions using ordinary least squares of peace on real per capita income, democracy, and economic globalization.

The table is composed of six columns. The first column lists the explanatory variables, and each of the other columns shows the results of a single regression. The regressions are numbered in the first row. The r-squared value for the regressions are given in the second to last row, while the number of countries entering each regression is shown in the last row. When a variable enters a regression, its estimated coefficient is given as the top most value for the appropriate variable row and for the appropriate regression column in the body of the table. The individual t-statistics are underneath the estimated coefficients in parenthesis. Variables that are significant at the one per cent level of significance or better in an equation are marked with a single asterisk. Those that are significant at the five percent level or better are marked with two asterisks and those that are significant at the ten percent level or better are marked with three asterisks.

The table contains five equations. The first equation is the regression of peace on GDP per capita and GDP per capita squared. The second equation adds, as a single additional explanatory variable to the income variables, democracy, while the third equation adds, as a single additional explanatory variable, trade openness. The fourth equation adds both democracy and trade openness to the income variables. Finally, the fifth equation looks at the effect of the two income variables, democracy, and trade openness on peace when controlling for the size of the military relative to the economy.

TABLE I
Cross Country Regressions of Peace on Real Per Capita Income, Democracy, and Globalization

	(1)	(2)	(3)	(4)	(5)
CONSTANT	2.795 (69.08) *	2.558 (30.24) *	2.704 (41.08) *	2.414 (23.22) *	2.536 (19.42) *
GDPPC	4.16E-05 (5.07) *	3.14E-05 (3.65) *	4.20E-05 (5.06) *	3.05E-05 (3.53) *	3.67E-05 (3.91) *
$GDPPC^2$	-5.41E-10 (-2.42) **	-4.16E-10 (-1.88) ***	-4.83E-10 (-2.57) **	-4.47E-10 (-2.02) **	-6.16E-10 (-2.64) **
DEMOCRACY		.0510 (3.18) *		.0579 (3.531) *	.0493 (2.56) **
TRADETOGDP			.0011 (1.86) **	.0013 (2.28) **	.0015 (2.56) **
MILITARYTOGDP					-.0546 (-2.82) *
RSQ	.358	.393	.374	.419	.451
N	141	140	137	136	124

The results support the hypothesis that there is an inverted U relationship between country peacefulness and the level of economic development, as measured by real GDP per capita income. In line with this notion, in every one of the five equations, the estimated coefficient on GDP per capita is positive, and the estimated coefficient on GDP per capita squared is negative. GDP per capita is significant at the one percent level of significance or better in all the equations, and GDP per capita squared is significant at the five percent level or better in four of the five equations, and significant at the ten percent level or better in one of the five equations.

The cross country findings are also consistent with the idea that democracy is favorable for peace. Democracy is positive and significant at the one percent level or better when used as the sole other explanatory variable in combination with per capita income and per capita income squared (equation(2)), and when used in combination with per capita income and per capita income squared and adjusted for the extent of trade openness (equation (4)). It is positive and significant at the five percent level or better when used together with per capita income, per capita income squared, the extent of trade openness, and of the size of the military relative to the economy (equation (5)).

With regard to globalization in the form of trade openness, the regression outcomes provide some justification for the belief that greater global economic integration is favorable for peace. Trade openness is positive and significant at the five percent level of significance in each of the three equations in which it appears.

Lastly, the size of the military relative to the economy, as expected, and probably to no one's surprise, is negatively related to peace. MILITARYTOGDP is negative and significant at the one percent level of significance in the sole equation in which it appears (equation (5)).

Conclusion

Given that the world's only super power, the United States, follows a policy of promoting democracy world-wide, it is heartening to see that the cross country analysis undertaken in the paper provides evidence for a positive relationship between the extent of democracy and peacefulness. Thus, it would seem that the encouragement of greater democracy, or the establishment of a democracy when another form of government already exists, is not to be dammed, but rather commended, as far as world peace is concerned. The study also finds that national peacefulness is positively related to global trade openness. As the world is heading in the direction of greater and greater globalization and integration, it is comforting to see that this massive social experiment, entailing unprecedented change, appears not to be detrimental, but rather favorable, for peace.

In the decades leading up to World War I, the Great War, there was a common opinion that war was a thing of the past because everyone was aware of war's horrific consequences under modern conditions. The keeping of the peace is precarious. This study finds that a nonlinear relationship exists between the peacefulness of a nation and per capita income.

Peacefulness seems to be a characteristic of countries occupying the middle turf in terms of income and development relative to other countries, so that, a policy of reducing income inequality between nations may actually be beneficial for enhancing the chances of peace between nations. The lack of peacefulness seems to occur at the extremes in terms of country prosperity and level of development. Countries with very low incomes are more likely to be subject to social disorder, political instability, revolution, unruly discontent, and social upheaval, while countries with high incomes relative to other countries, are likely to be apt to project their power regionally or globally leading to potential conflict.

Finally, the study suggests that the building up of the military within nations and arms races between nations needs to be avoided if we want to further the chances of the world peace.

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