GLOBALIZATION AND INTERNAL CONFLICT[*]

Håvard Hegre (The World Bank)

Ranveig Gissinger (Norwegian University of Science and Technology)

Nils Petter Gleditsch (PRIO and NTNU)

Paper prepared for delivery for the 2002 Midwest Political Science Association National Conference, Chicago, IL, April 25–28. The paper will appear as a chapter in Gerald Schneider, Katherine Barbieri & Nils Petter Gleditsch, ed., 2002, *Globalization and Conflict*. Boulder, CO: Rowman & Littlefield.

Abstract

The paper outlines and compares two models of how globalization is likely to affect the risk of civil war – a liberal model and structuralist model. Overall, we find considerably more support for the liberal model than for the structuralist, anti-globalist model. Trade does appear to have a capacity for increasing internal peace – not directly, but via trade's beneficial effects on growth and increased political stability. Overall, we find economic openness to be associated with higher growth. Our results give no support to the idea that globalization reduces growth, not even for poor countries. We found some evidence that trade increases income inequality. However, in contrast the robust link established between income inequality and violent crime, we do not find any relationship between inequality and civil war. In sum, the beneficial effect of trade and foreign investment outweighs whatever violence may be generated by increased inequality. We find that economic openness is associated with greater stability of political systems. This effect is particularly strong for democracies, but also positive for inconsistent regimes and autocracies. Finally, in our analysis of the factors increasing the likelihood of civil wars, we find no direct impact of economic openness. However, countries with a high income per capita and a stable political system have considerably lower risk of civil war than those without. Hence, since we find economic openness to increase average income and political stability, we do find an indirect conflict-reducing effect of globalization.

---

[*] The theoretical part of this chapter borrows heavily from Gissinger and Gleditsch (1999). The empirical analysis is new. An earlier version was presented to the World Bank Conference on The Economics and Politics of Civil War: Launching the Case-Study Project, Soria Moria conference center, Oslo, 11–12 June 2001. We are grateful for comments from the participants of that meeting, and from Indra de Soysa, Gunnar Eskeland, Erik Gartzke, John Randa, and Erich Weede. We also acknowledge the assistance of Naima Mouhleb, Håvard Strand, and Lars Wilhelmsen. The findings and conclusions expressed in the chapter are entirely that of the authors, and does not necessarily represent the views of the World Bank.

Introduction

Trade, foreign investment, and other forms of economic interdependence have grown throughout the post-World War II period, along with a stronger global political consciousness and increased regional cooperation. After the end of the Cold War, not only have these phenomena accelerated, but the lack of any opposing world system has also given them a near-universal character. In a cultural sense, too, the world is becoming a single arena. English is spreading rapidly as a global means of communication for science, commerce, and the transmission of news. New information technology has drastically reduced the costs of the worldwide dissemination of knowledge and opinion. 'Globalization' is employed as an umbrella term for these economic, political, and cultural processes. We use it here as a value-neutral term, in contrast to words like dependency or integration, which for many people carry negative or positive connotations. We use the term globalization mainly in the sense of an increasingly open economy.

During the period of emerging globalization, economic growth has generally continued in the industrial and post-industrial countries, while a number of newly industrialized countries have taken off. At the political level, the 'Third Wave' has brought democratic government to a greater part of the world than in any previous period. Many serious environmental problems in highly developed countries are being tackled with strategies combining national action and international collaboration.

On the other hand the former Soviet Union, parts of Africa, and war-torn nations elsewhere are in decline economically, and the most successful economies in Asia have shown clear signs of economic strain. Domestic economic inequality is increasing in most parts of the world. Politically, many new democracies have a poor human rights record, and their political systems appear to be weakly rooted in civil society. Environmental decline continues in many, perhaps most, third-world countries. Even in the highly developed world new environmental problems such as global warming emerge as serious threats to human welfare.

Various authors have linked all of these phenomena, positive as well as negative, to effects of globalization. Indeed, globalization is emerging as a key formula embodying most of the modern world's ills – or its promises. In this chapter, we concentrate on the implications of globalization for *internal armed conflict*. This is a topic that has been studied less intensively than the social and economic consequences, even less than the implications of globalization for interstate conflict.[1] But the disagreements regarding the consequences of globalization for internal armed conflict are as sharp as in any other such debates. Economic development will be an important intervening variable in the analysis, but we are also concerned with political development, notably democratization.

The debate on globalization has moved way beyond the academic arena, to government and to civil society. As the violent demonstrations in Seattle, Prague, Quebec, Gothenburg, and Genova indicate, anti-globalization forces are galvanized into action on the streets. Movements such as Attac that are devoted to challenging liberalization of the global economy are spreading. Coalitions against globalization are formed by some unlikely partners: They include supporters of populist American politicians, who want to terminate US involvement in multilateral treaties and see an end to the United Nations system, organized labor interested in protecting domestic markets and jobs, third-world supporters with anti-imperialist leanings, anarchists, and environmentalists.

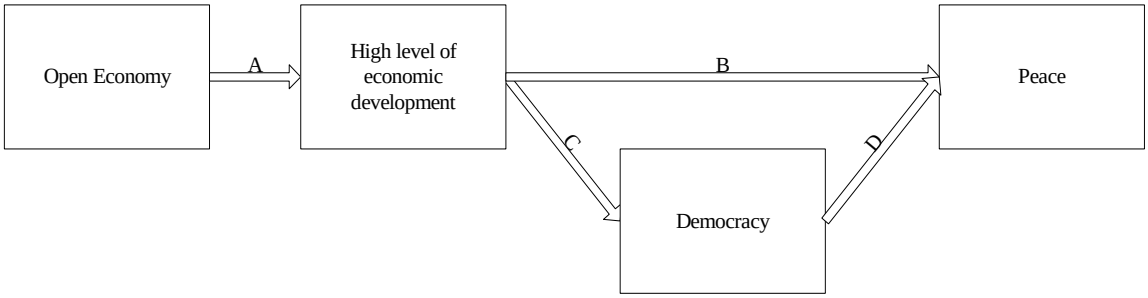
While the term globalization is relatively new, the issue of whether or not global structures and agents benefit poor countries, or indeed exploit them, has been at the core of social research on the problems of development for decades. Issues of development and underdevelopment were discussed within the framework of modernization theory and structural theory[2], discussions mirrored in the current debate. While neoliberal and modernization theorists view closer international economic contact as a strong factor in the modernization of poorer countries, the loose coalition of anti-globalists, whom we will call structuralists, emphasize the harmful effects of economic integration. Structuralists argue that foreign direct investment and trade are forms of capitalist exploitation of developing societies, and that they promote poverty and societal disarray and conflict within the developing world. In contrast, neoliberal models blame internal processes of poor governance and unsuccessful development policies and downplay international processes as the cause of underdevelopment.

In this chapter we will make an attempt to test some of these arguments. In order to do so, we have to simplify them, hopefully not to a point where they can no longer be recognized by their proponents.

The Liberal Model

We first summarize the liberal model in Figure 1: An open economy leads to a higher level of economic development. In turn, this leads to peace, both directly and through the promotion of democracy. In developing this model, we were inspired by the overall perspective of liberal conflict theorists such as Weede (1995) and Russett and Oneal (2001), drawing on Manchester liberalism and on what Russett and Oneal in particular have identified as a Kantian mode of thinking in international affairs. While these scholars have developed their argument mostly in relation to building a secure foundation for international peace, there is also a solid basis for a liberal argument about domestic peace. Since internal conflict is the overwhelmingly dominant form of conflict today (Wallensteen and Sollenberg, 2001), the political importance of this is obvious.

Figure 1 A Liberal Model



Economists (e.g., Dollar, 1992; Dollar and Kraay, 2001a; Levine and Renelt, 1992; Sala-I-Martin, 1997), sociologists (Firebaugh and Beck, 1994), and political scientists (de Soysa and Oneal, 1999) are among the many who have found that countries with more open economies tend to have higher growth rates. This raises the hope that they should eventually reach a higher level of welfare (arrow A), whether measured as per capita income or by other measures such as the Human Development Index or the reduction in the number of poor people (Dollar and Kraay, 2001ab). During the period of globalization, formerly closed economies, such as China and Vietnam, have experienced considerable economic growth and reduction in poverty after moving to modernize their economies through foreign trade and greater use of the market mechanism.

The link from development directly to domestic peace (arrow B) is one of the most robust findings in the World Bank studies and other work on civil war. Collier and Hoeffler's (2002) 'predation theory' assumes that there will always be someone who has sufficient grievances to be willing to start a rebellion against the government. Whatever the motivation, the rebellion can only be carried out if it is financially viable. (In a more cynical variant of the theory, greed is the sole motivation). As welfare grows, the opportunity costs of participating in violent insurrection are higher. This increases the recruitment costs for the rebel group and thereby reduces the financial viability of the rebellion. Civil war is particularly likely in countries that have a relatively high dependence on primary commodities exports, since control over such primary commodities provides an attractive source of income for the rebel organization, again increasing the financial viability of rebellion. Development may reduce the value of this control relative to other sources of income, which also reduces the financial viability of rebellion. Moreover, Collier and Hoeffler (2002) and Fearon and Laitin (2001) note that the governments of rich countries are likely to be sufficiently strong to deter most rebellions.

The link from development to democracy (arrow C) is a classic in modernization theory dating back to Lipset's famous article over forty years ago, which proclaimed that 'the more well-to-do a nation, the greater the chances it will sustain democracy' (Lipset, 1959: 75). Higher income and better education for the lower strata would lead to a more compromise-oriented view of politics. Rich countries also have greater surpluses to distribute; this permits modernization through education, occupa-

tional mobility, free flow of information, and organizational experience. Taken together, these factors encourage adaptability and compromise, tolerance, and moderation. Increased access to material and thus political resources, together with greater institutional diversity, were seen to act as preconditions for stable democracy. These views have found support in several empirical studies (Burkhart and Lewis-Beck, 1994; Londregan and Poole, 1996; Przeworski et al., 2000). Przeworski et al. (2000: 88) point out that the relationship between democracy and development may come about in two ways: either because democracies 'may be more likely to emerge as countries develop economically, or, having been established for whatever reasons, democracies may be more likely to survive in developed countries.'

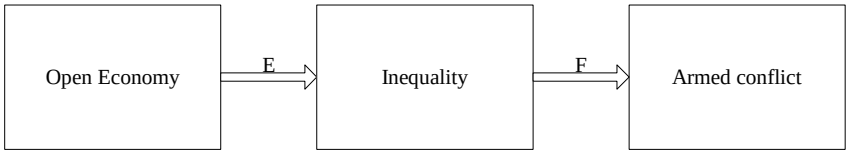
The link from democracy to civil peace (arrow D) is slightly more complex. In democratic countries the decision-making system tends to enjoy greater acceptance among the general population, so dissatisfaction is not frequently expressed in the form of serious challenges to the regime. Dissatisfaction can be channeled through the political system, with a low probability of outright rebellion. However, rebellion is also unlikely under a harshly authoritarian regime, which can effectively repress the opposition or even deter from ever arising. Thus, it is in intermediate regimes, in semi-democracies, that we are particularly likely to find higher levels of internal conflict (Hegre et al., 2001).

Tying together these various links then, we expect globalization to have a general peacebuilding effect on the internal affairs in nations which participate in it.

The Structuralist Model

The structuralist school of thought argues that an open economy is more likely to lead to increased conflict. We have summarized this argument in the simple model in Figure 2. According to structuralist theory, the penetration of trade and foreign capital into peripheral economies leads to the exploitation of local human and natural resources, and to a transfer of profit back to the imperial centers. This process results in impoverishment, inequality, and injustice. The production of raw materials in poor countries serves to prevent competence-building, and the economy remains export-oriented. Ties are created between the local power elite and foreign interests; this in turn increases income inequality in the poor countries. The production of raw materials will keep inequality high and the level of welfare low.

Figure 2 A Structuralist Model



In the 1960s dependency theory focused mostly on exploitation through trade. Later versions of dependency theory paid more attention to foreign direct investment (FDI). Galtung (1971), for instance, depicts economic relationships between core and peripheral countries as characterized by an alliance between the elites within the two countries, which in particular is carried out at the expense of the periphery within the periphery country. To a lesser extent the relationship is at the expense of the periphery in the core country, too. In sum, increasing the intensity of this relationship of structural imperialism should increase inequality in both countries, but the most in the poor country. In a classical and influential study, Bornschier and Chase-Dunn (1985) looked at the consequences of the policies of multinational corporations in the periphery. Based on a study of 72 countries for the period 1950–77, they concluded that foreign capital increased inequality in poor countries. The price of a globally-marketed product is approximately the same anywhere. In the North, most people may be able to afford a given product, whereas in the periphery only the elite can afford it. According to Bornschier and Chase-Dunn, if there is little inequality in the poor country, no one will be able to afford the product in question. Thus, as far as the multinational firm is concerned, a certain degree of inequality is desirable.

Dependency theory claimed that FDI in less-developed countries reduces economic growth while inequality increases. Foreign investment was thought less likely to contribute to public revenue, less

likely to encourage indigenous entrepreneurship, less likely to promote links to other industries in the domestic economy, and more likely to use inappropriate capital-intensive technology (Firebaugh, 1992: 106). Similar arguments are frequently repeated in the current political debate about globalization (e.g. in Martin and Schumann, 1998).

More in the economic mainstream, Kuznets (1955) argued that inequality is relatively low in agricultural societies because most people are engaged in small farming and have fairly similar incomes. With industrialization and urbanization, inequality will initially increase, since wages in the industrializing sector generally is higher (in addition, inequality is supposed to be higher in the modernizing sector, too). As the labor force shifts from the agricultural sector to production in the modern sector where wages are higher, inequality will initially increase as long as the modern sector labor force is a minority, but will decrease as the transition is completed. (In addition, as workers become integrated into the new industrial culture, they will organize to struggle for higher wages and better legal protection, and gradually the inequality within the modern sector will be reduced). This process is often referred to as sector dualism (Nielsen and Alderson, 1995), and the inverted-U shaped relationship is referred to as the Kuznets U-curve. To the extent that trade and foreign investment mainly benefit the modern sector, and accelerate its expansion, we expect the effect of globalization to have different effects on inequality at different levels of development.

Structuralist writers are critical of this line of reasoning, however. In their view, worldwide capitalism is premised on inequality being maintained at a high level.

In economic theory, the factor-price equalization theorem also implies different effects for rich and poor countries, although in the opposite direction: With trade, developing countries specialize in goods that are intensive in unskilled labor, and hence push up wages for unskilled labor (cf. Aghion and Williamson, 1998). Developed countries specialize in goods that are intensive in skilled labor and in capital, and thereby depress wages for unskilled labor. This leads to a hypothesized increased inequality in developed countries and reduced inequality in developing countries – which is the opposite effect as that predicted by the structuralist model and the Kuznets curve.

Today reference is frequently made to increasing income inequality not just in the poor countries, but also in the rich countries. Some scholars have sought an explanation in terms of technological change; others have cited high immigration. Increasingly, however, globalization is being singled out as the culprit (Wood, 1994). Imported cheap textiles and electronic goods compete successfully with Western products (Bhagwati and Kosters, 1994), producing an increasing number of unemployed. A new group of 'working poor' is emerging because of weakening of the labor movement and because of companies' efforts to compete with low-cost countries. Multinational companies threaten their Western workers that if costs are not kept down, factories may be moved to countries with lower wages. To take but one example, between 1990 and 1994 the Swiss–Swedish firm Asea Brown Boveri (ABB) closed down 40,000 jobs in North America and in Europe and created over 20,000 jobs in Eastern Europe – mostly in Poland. Average hourly wages in a Western country were almost 12 times higher than in Poland (Thurow, 1996: 168). To avert massive job losses, workers in Western countries have had to moderate their demands for higher wages. The real median income of families has barely increased since the early 1970s, and although the poverty rate has declined slightly, numerous children are still growing up in poverty. Employment has been growing strongly in the USA since the early 1980s, but it is less impressive if we take into account the population growth and the low salaries in many jobs. So goes the anti-globalist story, leading to the rhetorical question whether the US is becoming a third world country, since millions of people live under conditions similar to those found in poor countries (Luttwak, 1993; 118, 125).

This development is consistent with the prediction from the factor price equalization theorem, and have been confirmed empirically for developed countries (see Nielsen and Alderson, 1995: 678). But has it been accompanied by the predicted decrease in inequality in developing countries? Not according to Korzeniewicz and Moran (1997), who find world income inequality to have increased since 1965, and in particular since 1980. The signs of the estimates for independent variables associated with low level of development in Nielsen and Alderson (1995) also indicate that inequality has been increasing in the developing world.

Inequality, in turn, is seen as giving rise to conflict. Theories of relative deprivation argue that while absolute poverty may lead to apathy and inactivity, comparisons with those in the same society who do better may inspire radical action and even violence. Many revolutions have been based on

egalitarian ideas like 'all men are created equal' or 'liberty, equality, fraternity'. And numerous empirical studies by Boswell and Dixon (1990), Muller and Seligson (1987), and others have found a positive relationship between inequality and conflict. In a survey Lichbach (1989) suggested that these findings might be spurious because they failed to include control variables like the level of economic development and political regime type. Scholars had focused on relative deprivation at the cost of ignoring more important explanatory factors. A puzzle in this connection is how economic inequality, which changes only slowly, can cause armed conflict to erupt at a particular time (Muller, 1988). Using the data on income inequality generated by Deininger and Squire (1996), several researchers (Collier and Hoeffler, 2002; Dollar, Easterly and Gatti, 1999) have failed to find a significant relationship between inequality and political violence. In fact, inequality, is among the grievance factors largely dismissed by Collier and Hoeffler.

Within the structuralist mode of thinking, then, the main link is from globalization via inequality to internal conflict. We could have added increased political instability and the erosion of democracy to the model. The main reason why we have not done so is that it is the liberal model, rather than the structural model that clearly specifies a link between the political system and violence. We will nevertheless discuss some such links when we come to our empirical work.

The Advance of Globalization

If we are to be able to test these notions empirically, we need to know at what point in history globalization is supposed to have entered and set the stage for greater inequality and violence – or for prosperity and peace. Globalization is obviously not a new phenomenon. Europe and China were connected hundreds or years ago by the 'silk route' and traders transferred such culturally pervasive items as noodles and gunpowder from China to Europe. By the end of the 19th century foreign trade exceeded 30% of GDP in several European countries and statistics in both liberal and structural writings indicate a declining trend in trade dependency since that time. If indeed the increasing absolute volume of trade was more than matched by increasing domestic production, we would have to ask whether the phenomenon of globalization itself was a fiction of the imagination. This would also call into question a basic premise for why it should have all the beneficial or negative effects posited by the liberals and the structuralists respectively.

However, Alesina et al. (2000) indicate that the apparent stagnation of globalization as measured by trade over GDP is based on an expanding set of nations. This provides a poor basis for comparison if the new nations included in the aggregate figures have lower trade dependency. When limiting for comparison over time to nine European countries with long data series, they find that the average trade/GDP ratio was roughly stable from the previous turn of the century until about 1930. Then it dropped and stayed down during the depression and war years. After World War II it rose rapidly to the pre-1930 level where it stayed until it started rising again in the early 1970s. Similarly, when comparing a larger sample of 61 countries from 1950, which shows that trade openness has picked up remarkably from the end of the 1970s and continues to rise. This is precisely the period identified by many as the age of globalization. During this period we have seen a massive relative decline in transportation costs. Statistics for foreign direct investment show an immense increase in this same period. Even greater expansion is reported for electronic communication, where the limitations imposed by geographical distance are largely eliminated. It *does* make sense, then, to speak of an era of globalization from the 1970s. We will test the consequences of globalization for the period 1970–97, and we would expect the rapid globalization in the later two thirds of this period to have some consequences for conflict.[3] We therefore now move to an examination of these links, based on the broad models outlined earlier.

Comparing the Models Empirically

Globalization and Growth

We first investigate arrow A in Figure 1, the liberal model: Does economic openness lead to a high level of economic development? Table 1 presents the results from an time-series cross-sections OLS

regression analysis with growth as the dependent variable. Growth is measured as a country's average annual GDP per capita growth in four-year periods.[4] The first four-year period starts in 1970 and ends in 1973. The last period starts in 1994 and ends in 1997. We include a fairly standard set of control variables: the natural logarithm of the initial level of GNP per capita measured in constant 1995 USD dollars, gross domestic investment (GDI) as a percentage of GDP, financial depth (M2), secondary school enrollment (percent of relevant age group), agriculture value added as percentage of total value added, population growth in percent, and government consumption as percentage of GDP.[5] All these variables were taken from World Bank (1999). We calculated the mean of all years with data within the period for these variables. Since growth is likely to affect investment, financial depth, and our globalization variables, we lagged these three variables by one period to minimize endogeneity bias.[6] We also included indicator variables for eight regions and each of the time periods to minimize omitted variable bias (the parameter estimates are not shown here).[7] In addition, we included a variable denoting whether a civil war started in the country during the period.

In column A, we operationalize economic openness as trade (imports + exports) as a percentage of GDP. To decrease the effect of a few extremely high values, we took the natural logarithm of the variable.[8] In column B, we use the natural logarithm of Foreign Direct Investment (FDI, net inflows in reporting country as a percentage of GDP) as our measure of openness.[9] In column C, we use Sachs and Warner's (1995) indicator as a measure of openness. In this measure, countries are coded as open if it maintained reasonably low tariffs and quotas, and did not have an excessively high black market exchange rate premium, was not socialist, and avoided extreme state control of its export sector. The dataset spans the period 1950–92. The data for GDP growth, FDI, and trade were also taken from World Bank (1999). All these variables were coded for the first year in the period. The data for civil wars were taken from the Correlates of War project and supplemented with wars for the 1993–97 period from Collier and Hoeffler (2002). The GNP per capita, trade, and primary commodities variables were all centered to minimize collinearity problems in the interaction models.

Table 1 Globalization and Economic Growth, 1970–97, OLS

	1A	*1A**	*1B*	*1C*	*1D*	*1E*
	Trade, OLS	Trade, 2SLS	FDI, OLS	Sachs and Warner openness, OLS (1970–93)	Trade, GNP per head interaction, OLS	Trade, Primary commodities exports interaction, OLS
Independent variable	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)
Trade/GDP (centered, lagged)	0.20 (0.60)	0.19 (0.63)			0.02 (0.06)	0.06 (0.14)
FDI/GDP (lagged)			0.13 (1.00)			
Sachs/Warner openness				2.33 (4.45)		
ln(GNP per capita) (centered, lagged)	–0.92 (–2.70)	–0.82 (–3.24)	–0.69 (–2.05)	–0.62 (–1.42)	–0.88 (–2.78)	–1.40 (–3.14)
Trade/GDP*ln(GNP per capita) (lagged)					0.33 (2.17)	
Ln(Primary commodities exports/Total Trade/GDP) (lagged)						–0.30 (–0.75)

	1A	*1A**	*1B*	*1C*	*1D*	*1E*
	Trade, OLS	Trade, 2SLS	FDI, OLS	Sachs and Warner openness, OLS (1970–93)	Trade, GNP per head interaction, OLS	Trade, Primary commodities exports interaction, OLS
Primary commodities* Trade/GDP (centered, lagged)						–0.40 (–2.38)
GDI/GDP (lagged)	0.046 (1.54)	0.063 (2.29)	0.041 (1.36)	0.034 (0.92)	0.054 (1.76)	–0.074 (–0.18)
M2/GDP (lagged)	0.0095 (0.78)	0.0076 (0.78)	0.017 (1.54)	–0.016 (–1.53)	0.010 (0.90)	–0.015 (–1.20)
New civil war in period	–2.86 (–4.33)	–2.75 (–4.18)	–2.76 (–3.94)	–2.64 (–3.79)	–2.89 (–4.27)	–2.57 (–3.25)
Secondary schooling	–0.0095 (–0.80)	–0.0099 (–0.99)	–0.0028 (–0.24)	–0.012 (–1.00)	–0.0098 (–0.84)	–0.0095 (–0.68)
Agriculture as share of value added	–0.081 (–3.59)	–0.069 (–3.32)	–0.078 (–3.44)	–0.060 (–2.68)	–0.086 (–3.86)	–0.13 (–4.04)
Population Growth (%)	–0.73 (–2.50)	–0.74 (–3.68)	–0.35 (–1.41)	–0.69 (–2.72)	–0.75 (–2.52)	–1.24 (–3.63)
Govt. consumption as share of GDP	–0.12 (–2.74)	–0.11 (–3.81)	–0.14 (–3.66)	–0.097 (–2.48)	–0.11 (–2.53)	–0.15 (–3.10)
Constant	7.56	6.46	6.96	5.81	7.16	11.82
N	511	506	474	402	511	352
R^2	0.30	0.35	0.31	0.36	0.31	0.40

Dependent variable is growth in GDP per capita. All models estimated with robust standard errors (Huber/White/sandwich estimator of variance).

The estimates for lagged trade and FDI are both positive, but not statistically significant. The results do not support arrow A in Figure 1 as clearly as other studies have. Estimating these models with non-lagged globalization variables, however, shows a positive and significant relationship. The implication of this is that the results reported here do not give a basis for concluding that high levels of trade or foreign direct investment relative to domestic production *cause* higher rates of growth, but that growth most often is associated with increased importance of trade and foreign investment. The Sachs and Warner indicator, on the other hand, is positive and significant.[10] Countries that are open according to their definition, grow on average by more than two percentage points more than non-open countries.[11]

Note the 'convergence effect' in the results: The estimate for ln(GNP per capita) is negative, implying that poorer countries grow faster than richer. This contributes to reduced global inequality, as developing countries catch up with the developed ones. This appears to contradict the results of Korzeniewicz and Moran (1997). Note however, that the impact of GNP per capita to some extent is offset by other control variables that are correlated with GNP per capita (e.g. investment, population growth, and civil war). In sum, the convergence effect may be fairly small.

According to some versions of the structuralist model, trade may be beneficial for rich countries but not for poor ones; neither is it good for primary goods exporters. To test this, we estimated a model with an interaction term between trade/GDP and initial GNP per capita (Model 1D). The interaction term is positive and significant: Trade seems to be less beneficial for poor countries than for rich countries. However, some caveats should be noted: Firstly, the magnitude of the interaction term relative to the GNP per capita term implies that even the least developed countries are estimated to grow faster

than developed countries, whether they have a high trade-to-GDP ratio or not. Secondly, the corresponding interaction term for the Sachs and Warner openness indicator (not reported here) is negative, but negligible in magnitude and not significant. According to that measure, economic openness is equally beneficial for all countries. Finally, the problem with correlation between trade/GDP and size mentioned above (fn. 9) is even more relevant here. Consistent with this, excluding India and China from the analysis significantly reduces the magnitude of the estimate for the interaction term.

The results for the primary commodities exports variable and its interaction with trade/GDP (Model 1E) yield estimates pointing in the same direction: Countries for which primary commodities form a large share of the total exports seems not to benefit from globalization measured as trade/GDP, as implied by the structural model. However, this interaction term is identical to a variable denoting the extent to which the economy is dependent on primary commodities exports. Primary commodities-dependent economies have been shown to grow more slowly than more diversified economies (cf. Sachs and Warner, 1997; Sachs, 1999), but this is ordinarily explained by internal mechanisms, not by the dependence on the rich world to which structuralists would attribute the finding: In particular, the 'Dutch disease' explanation suggests that resource-abundant economies then to allocate less labor and capital to manufacturing. This is harmful if manufacturing is characterized by learning-by-doing or by economies of scale.

The estimates for the control variables are roughly consistent with earlier studies. Moreover, as others have also found (cf. Collier, 1999; Murdoch and Sandler, 2002), the onset of civil wars is extremely detrimental to economic development. In the first four-year period of the war, average annual growth is reduced with somewhere in the range of 2.5 to three percentage points.

Globalization and Inequality

Table 2 presents results of tests of arrow E in Figure 2: Is economic openness associated with higher inequality? The dependent variable is the average Gini coefficient for income inequality for the same periods as in Table 1. The Gini coefficient ranges from under 20 (low inequality) to over 60 (high inequality) in the sample. The inequality data were taken from Deininger and Squire (1996). To maximize the number of observations, missing data points were filled in by means of an imputation model. Since inequality changes only slowly in most countries, there is extensive autocorrelation in the series.[12] To account for that we estimated the model using OLS with panel-corrected standard errors (Beck and Katz, 1995), assuming country-specific AR(1) processes.[13] The result from this estimation is reported in Table 2, column A.

We include a set of control variables in the model, based on Ahluwalia (1976) and Nielsen and Alderson (1995), that to some extent explain the Kuznets curve: Earlier studies find a high level of education (represented by secondary school enrollment) to reduce inequality, a high population growth to be associated with high inequality, sector dualism (operationalized as the difference between the share of the labor force in agriculture and the share of agriculture in GDP, cf. Nielsen and Alderson 1995) to be positively related to inequality, and urban share of population and Marxist-Leninist economic system to be negatively related to inequality. We have also included democracy, assuming that democratic regimes are likely to carry out more redistribution, and GNP per capita and the square of GNP per capita in the model. We investigate the same indicators of globalization as in Table 1.

The results for the control variables are generally in line with earlier studies (Ahluwalia, 1976: Nielsen and Alderson, 1995): Education reduces inequality, and population growth and sector dualism increases it. In contrast to Ahluwalia, we find the share of urban population to increase inequality. This estimate is highly and negatively correlated with the estimate for GNP per capita, however, so the inconsistency may be due to collinearity. We find, as do Nielsen and Alderson (1995), that democracy is associated with high inequality.

The results in Model 2A weakly support the argument reflected in arrow E in Figure 2: A high level of trade relative to GDP is associated with high income inequality, although the relationship is not statistically significant.[14] However, as in the analysis of economic growth, there are reasons to believe that the relationship between economic openness and inequality is contingent on development.

Table 2 Globalization and Inequality, 1970–97, OLS with Panel-Corrected Standard Errors

	2A	*2B*	*2C*	*2D*	*2E*
	Trade/GDP; No Interaction term	Trade/GDP; Interaction terms	FDI/GDP; Interaction terms	Sachs/Warner openness	Trade/GDP; Primary commodity dependence; Interaction terms*
Variable	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)
Constant	43.9	44.1	44.6	46.9	42.6
Ln(Trade/GDP)	0.61	0.51			0.98
	(1.42)	(1.11)			(1.88)
Ln(Trade/GDP)*		–0.99			–1.27
ln(GNP per capita)		(–3.10)			(–2.97)
FDI/GDP			0.41		
			(0.67)		
FDI/GDP*ln(GNP per			–0.042		
capita)			(–0.48)		
Sachs/Warner				–2.61	
openness				(–4.96)	
S-W Openness *				–0.66	
ln(GNP per capita)				(–1.33)	
Share of exports					0.043
primary goods					(3.11)
Primary goods *					–0.036
ln(Trade/GDP)					(–1.80)
lnGNP per capita	–0.61	–0.89	–0.87	0.56	0.21
	(–1.69)	(–2.45)	(–1.86)	(1.17)	(0.47)
$(\text{lnGNP per capita})^2$	–0.88	–0.63	–0.87	–0.74	–0.85
	(–12.61)	(–6.59)	(–7.06)	(–3.92)	(–4.89)
Democracy	0.11	0.37	0.32	0.25	0.29
	(3.36)	(2.28)	(1.78)	(1.09)	(1.17)
Democracy*ln		–0.038	–0.029	–0.028	–0.031
(GNP per capita)		(–1.79)	(–1.21)	(–0.95)	(–0.95)
Secondary school	–0.13	–0.13	–0.12	–0.13	–0.11
enrollment (%)	(–9.26)	(–8.31)	(–5.50)	(–6.24)	(–6.59)
Population growth (%)	0.42	0.29	0.28	–0.14	0.36
	(3.01)	(1.26)	(0.60)	(–0.41)	(1.02)
Sector Dualism (%)	0.024	0.012	0.019	0.025	0.047
	(1.11)	(0.51)	(0.78)	(1.24)	(1.89)
Urban population	0.077	0.083	0.073	0.065	0.076
(% of total population)	(4.14)	(3.93)	(3.38)	(2.80)	(3.54)
Marxis7t-Leninist	–6.57	–6.23	–7.74	–5.49	–6.06
	(–9.60)	(–8.41)	(–6.33)	(–2.01)	(–4.44)
N	597	597	565	474	367
Num. of countries	117	117	116	97	81
R^2	0.964	0.961	0.961	0.975	

Models A-D were estimated using OLS with panel-corrected standard errors (Beck and Katz, 1995), assuming panel-specific autocorrelation coefficients. Model E was estimated using FGLS (Greene, 1997: 511–513).

The discussion of the Structuralist model above implies that globalization should affect poor and rich countries differently.[15] To account for that, we added the interaction term between ln(Trade/GDP) and ln(GNP per capita) to the model. We also created an interaction term between Democracy and ln(GNP per capita). The results are presented in Table 2, Column B.

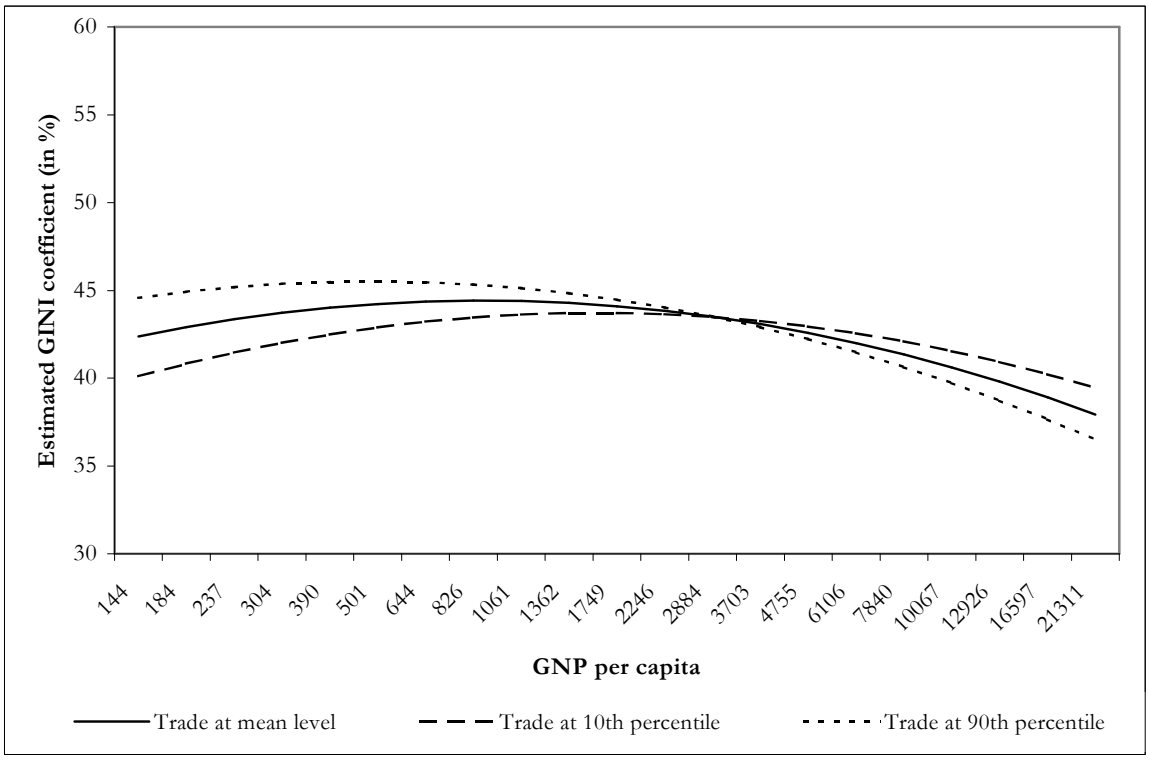
The estimates indicate that high levels of trade and democracy are associated with high income inequality in poor countries only. The predicted Gini coefficients are plotted as functions of GNP per cap-

ita for three levels of trade in Figure 3. For the countries with the lowest incomes per capita, those with trade/GNP at the 90th percentile are estimated to have a Gini coefficient more than two points above those with a trade level at the mean, and the least open economies more than two points under the average trader. For the countries with high income per capita, this relationship is completely reversed. This interaction effect reinforces the support for arrow E in Figure 2: Trade is particularly likely to increase income inequality in low-income countries. This may not necessarily mean that only the elites in the periphery reap the benefits of trade, however, as suggested by Galtung (1971). Trade is likely to primarily affect the modern sector, and to accelerate the labor shift toward the modern sector. According to the sector dualism argument, this will lead to an increased Gini coefficient as long as the majority of the labor force still is in the low-wage traditional sector. Hence, a much more substantial part of the population than the 'elite' may benefit even when inequality increases.

In Column C in Table 2, we present the results from the corresponding model for ln(FDI/capita).[16] We do not find any significant relationship between the flow of foreign direct investment and inequality.[17] Column D shows that the Sachs and Warner indicator of economic openness is negatively related to inequality. This association is strongest for countries with a high level of GNP per capita, but open countries are estimated to have less inequality for all levels of development.

As discussed in relation to Table 1, exposure to global trade may be particularly harmful for countries that are heavily dependent on primary commodities. To explore this, we added (as in Table 1) the share of primary commodities in total merchandise exports, and this variable's interaction term with ln (Trade/GDP). The results are reported in Column 2E. High dependence on primary commodities is associated with a high level of income inequality: the estimate 0.043 indicates that a country with mean GNP per capita where primary commodities make up 60% of the exports have a Gini coefficient 2.1 percentage points higher than one with only 10% primary commodities exports.[18] The negative interaction term for the interaction term indicates that this relationship between primary commodities dependence and inequality attenuates the relationship between trade and inequality. The estimate for the interaction term is not statistically significant, however.

Figure 3 Estimated Effect of Trade on Income Inequality, by GNP per capita, 1970–97



Globalization and Civil War

Table 3 reports results from a calendar-time Cox regression analysis estimating how the globalization variables influence the risks of outbreak of civil war. The model is based on Hegre et al. (2001). The interpretation of the estimates of the model is very similar to the interpretation of logistic regression estimates.[19] The data for civil war were taken from the Correlates of War project, and again supplemented with a few additional wars from Collier and Hoeffler (2002).

This analysis allows us to test arrows B, D, and F in Figures 1 and 2. The analysis controls for the level of democracy, GNP per capita, proximity of regime change, proximity of civil war, interstate war, ethnic heterogeneity, and the logarithm of the size of the country's population. Population is a crucial control variable in this analysis, since it has a high negative correlation with trade/GDP (cf. fn. 6). Without this control, trade/GDP may be acting as a proxy for population size. The number of battle-deaths from political violence are more likely to exceed 1,000 per year in a more populous country . Thus, civil war is more frequent the larger the country (Collier and Hoeffler, 2002).

We use the Polity 98d Democracy index and its square term as our measure of level of democracy. Proximity of Regime Change is measured as exp(–days since regime change/527) which assumes that the impact of a regime change on the probability of civil war is initially high and then reduced at a constant rate with a half-life of six months.[20] The proximity of civil war variable is constructed along the same lines, but with a half-life of eight years. The Interstate war variable records whether a civil war was ongoing at the time of observation. The ethnic heterogeneity index is measured as $(1–s^2)$ where s is the share of the population in the country that belongs to the largest ethnic group.

We use the same source for GDP per capita as for Tables 1 and 2, but supplement it with figures from Penn World Tables Mark 5.6 (Summers and Heston, 1991), and log-transform this variable, too. The trade/GDP, FDI/GDP, and GDP per capita variables were sampled the year before the observation year to minimize problems of endogeneity. Both the trade/GDP and GDP per capita variables were log transformed. As in Hibbs (1973) and Hegre et al. (2001), we included the square of ln(GDP per capita). The inequality variable was measured the same year as the observation.

The results of this estimation are shown in Table 3 In column 3A, we find no impact of trade/GDP on the hazard of civil war, controlling for all the variables mentioned above.[21] Note that, in contrast to Hegre et al. (2001), there is no discernible relationship between the level of democracy and the hazard of civil war (arrow D in Figure 1). This is mainly due to the inclusion of the GDP per capita variable, which is correlated with Democracy (r = 0.51). This creates problematic collinearity in the model, which again hurts the precision of the estimates for both variables. Given the debate around whether development causes democracy or vice versa, one may discuss which of the two variables should be taken out. However, since we are focusing on economic factors in this chapter, we reestimated the model without the level of Democracy variables.[22] We also removed the Ethnic heterogeneity variable, which is never significant at the 0.05 level with this dataset. The results are presented as Model B in Table 3. The estimates are very close to those in Model A, but the standard errors are invariably smaller because of the higher number of cases available for analysis and because of the removal of the collinearity problems. In Model C, we find no relationship between the flow of foreign direct investment and the hazard of civil war.

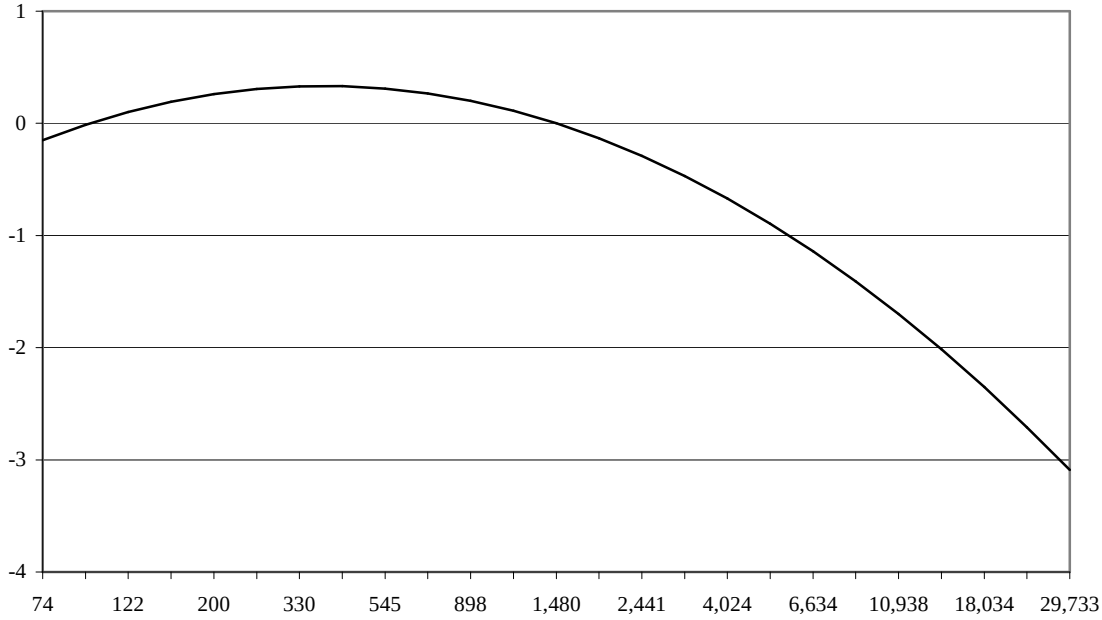
Models A–C show that there is no direct effect of trade openness or the flow of foreign investment on the risk of civil war. The structuralist model (cf. Figure 2), however, implies that an open economy should increase the risk of civil war through increased income inequality (arrows E and F). We found some relationship between trade exposure and inequality for poor countries in Table 2, but can we find any trace of the other part of this relationship? In Model 3D we add the Gini coefficient to the model. Like Collier and Hoeffler (2002), we find no systematic relationship between inequality and civil war – the estimate is virtually zero.[23]

The liberal model (Figure 1) does not predict a direct relationship between economic openness and the hazard of civil war. Globalization works through the effect of trade on growth. In Table.1, we found some evidence for economic openness to increase growth as suggested by arrow A. Arrow B implies that there is a direct, negative relationship between GDP per capita and the hazard of civil war. The estimates for the variable and its square term are negative. Figure 4 plots the estimated relationship between GDP per capita and the hazard of civil war, based on the estimates in Model.3B. The figure shows that the hazard of civil war is roughly unchanged when increasing GDP per capita up to approximately USD 1,500 (the level of Guatemala or Ukraine in 1997), and then decreasing at an increasing rate for each multiplicative increase in GDP per capita.

Table 3 Globalization and Civil War, 1960–92, Cox Regression

	3A	*3B*	*3C*	*3D*
	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)
Ln(Trade/GDP) (lagged by one year)	0.10 (0.31)	0.13 (0.31)		
FDI/GDP (lagged by one year)			–0.045 (–0.68)	
Inequality				0.0067 (0.32)
GDP per capita (lagged by one year)	–0.49 (–2.51)	–0.43 (–3.00)	–0.41 (–2.37)	–0.40 (–3.14)
GDP per capita squared (lagged by one year)	–0.18 (–1.82)	–0.18 (–2.24)	–0.20 (–1.73)	–0.13 (–1.75)
Proximity of civil war (eight year half-life)	1.06 (2.04)	1.29 (3.26)	1.46 (3.49)	1.54 (4.29)
Interstate war	0.75 (1.09)	0.94 (2.29)	1.32 (3.18)	0.67 (1.73)
Ln(Population)	0.31 (2.15)	0.30 (2.27)	0.26 (2.26)	0.19 (2.32)
Proximity of regime change (half year half-life)	1.80 (3.67)	1.79 (4.30)	2.14 (5.00)	1.73 (3.97)
Democracy	–0.028 (–1.18)			
Democracy squared	0.0015 (0.23)			
Ethnic heterogeneity	0.65 (1.22)			
No. of civil wars	42	53	36	56
No. of countries	144	172	164	158

Figure 4 The Estimated Relationship between GDP per Capita and Civil War



The figure plots the natural logarithm of the estimated risk of civil war relative to the baseline, which has GDP per capita at the mean.

All of the control variables retained in Models 3B–3D are significant: Population size is positively associated with the risk of civil war. The existence of an interstate war in the country is also positively correlated with civil wars, although this result is quite sensitive to sample variations. The Proximity of civil war variable captures the fact that civil wars are likely to be followed by another civil war (in addition to being a proxy for unmeasured characteristics that increase the likelihood of civil war, cf. Collier and Hoeffler, 2002**:** 000). The proximity of regime change, on the other hand, partly reflects the fact that a change in the institutional setup often lead to violent protest, and partly the fact that regime change is an integral part of the process leading up to a civil war. This suggests that it would be useful to analyze how globalization affects the likelihood of regime change. This is done in Table 4.

Globalization and the Duration of Political Institutions

The analysis reported in this section builds on Gates et al. (2001). The dependent variable in Table.4 is the duration of a polity, i.e. the time between two regime changes in a country. A regime change is defined as a substantial change in the system for recruitment of the executive, the degree to which the executive is constrained by a balancing institution, and the share of the population participating in elections. The conceptualization and data were drawn from Gurr (1974) and Vanhanen (2000).[24] Here, we use log-logistic regression, with the duration of the polity as the time variable as is common in survival analyses. The hazard of failure increases initially, peaks after 3–4 years, and then falls. The parameter estimates are reported in time-ratio form, implying that they are estimates of the change to the median survival time effected by one unit's increase on the independent variable (cf. Collett, 1994: 205). Figures in parentheses are estimated t-scores, testing the hypothesis that ln(time ratio) <> 0. T-scores are negative when the estimated time ratio is less than one.The economic variables are measured as in Table 3, and sampled once for every five years such that they refer to a time between (and including) the year of the observed regime change or up to five years before the change.

Columns 4A and 4B investigate how trade/GDP and FDI/GDP affect the hazard rate of all type of polities. Both estimates are positive, but not statistically significant. Increasing trade by a factor of e=2.7 is estimated to increase the survival time by 13%. Increasing FDI by the same factor only increases regime survival with 5%.

The estimate for GDP per capita is positive, clearly significant, and non-trivial in magnitude. Increasing GDP per capita by e=2.7 (approximately the difference between Bolivia and Panama, or between Mongolia and the Philippines) increases the expected survival time with 18% in Model 4A.

The distance between a state's political setup and that of its neighbors affects stability. On average, polities surrounded by countries with diametrically different political systems live only half as long as those neighboring their political kins. Surprisingly, the first polities following a country's independence are more stable than those coming later: A political system put together at the country's independence day may expect to last twice as long as one commencing 60–70 years later, *ceteribus paribus*.

We distinguish between three regime types: autocracies, democracies, and in-between (inconsistent) regimes as defined in Gates et al. (2001). We control for the average distance between the political system in the country and those of the neighboring country. This variable ranges from 0 to 1. A fully consistent democracy bordering only consistent autocracies would be coded with a 1.[25] We also control for the proximity of independence. This variable takes the value 1 on the first day of independence and decreases at a constant rate with a half-life of 16 years.[26] We also tried controlling for population size to make sure trade/GDP does not act as a proxy for country size, but this variable was never close to statistical significance. We report the estimated time ratios, or how many times longer the median survival time is estimated to be if the independent variable is increased with one unit.

The estimates for 'Autocracy' and 'Democracy' show that both autocracies and democracies are much more stable than the reference category 'Inconsistent regimes'. The inconsistent regimes have an estimated median survival time of 2.6 years.[27] Controlling for the other variables, autocracies are estimated to survive 2.5 times longer, and democracies 5.5 times longer.

The liberal model, however, does not imply that development enhances the stability of non-democratic political systems (cf. Przeworski et al., 2000). On the other hand, it is often argued that non-democratic regimes have a harder time surviving when faced with economic openness. To assess the hypothesis more precisely, we estimated the model in column 4A separately for each of the three regime types.

Table 4 Globalization and Duration of Political Systems, 1960–97, Log-logistic Regression

	4A	*4B*	*4C*	*4D*	*4E*
	All Regime types, trade	All Regime types, FDI	Autocracies	Inconsistent regimes	Democracies
	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)	Coef. (t-value)
Ln(Trade/GDP)	1.13 (1.26)		0.84 (–1.06)	1.27 (1.87)	2.27 (3.24)
FDI/GDP		1.05 (1.37)			
Ln(GDP per capita)	1.18 (2.79)	1.15 (1.87)	1.24 (3.40)	1.01 (0.14)	1.59 (4.11)
Autocracy	2.51 (6.95)	2.05 (4.53)			
Democracy	5.45 (9.98)	5.01 (8.14)			
Average distance from political positions of neighbours	0.54 (–2.25)	0.64 (–1.32)	0.32 (–2.61)	0.75 (–0.75)	6.73 (2.18)
Proximity of independence	2.04 (3.56)	2.47 (3.13)	4.79 (4.16)	1.42 (1.29)	0.55 (–1.25)
Gamma (95% c. i.)	0.73 (0.68, 0.79)	0.71 (0.65, 0.77)	0.69 (0.61, 0.78)	0.70 (0.63, 0.78)	0.72 (0.58, 0.89)
2ll change (d.f.)	140.91 (6)	86.68 (6)	31.19 (4)	8.75 (4)	
No. of failures	504	335	188	252	64
No. of polities	630	455	218	286	126

Column 4C reports the analysis for autocracies. The median survival time for this subset is 6.5 years. Here, economic openness is associated with a shorter expected polity duration, although the estimate is not significant. Autocratic states with a high GNP per capita, on the other hand, are more stable than autocracies with a low GNP per capita.[28] This relationship is stronger than the average relationship between development and stability.

Interestingly, the control variables also have very different impacts on policy duration in the three subsets. The political distance to the neighborhood significantly reduces expected survival time: autocracies surrounded by democracies are more likely to experience regime changes than autocracies in more homogenous surroundings (cf. Gleditsch, 2002 for a more elaborate study of this). Finally, the median survival time increases more rapidly with time since independence in the autocratic subset than for all regimes.

Column 4D presents the model estimated for in-between regimes. Although this is the subset with the highest number of polities and failures, none of the variables reach the 5% level of significance. This probably reflects the highly heterogenous nature of this class of polities. Economic openness is estimated to increase regime stability, and is the variable that is closest to the 5% significance level. Increasing trade by a factor of 2.7 increases estimated survival time by 1.27. The other three variables in the model does not seem to alter the stability of these inconsistent, frequently short-lived polities.

Column 4E shows how the variables in the model affect the stability of democracies. This is the most stable subgroup, with median survival time of 9.6 years in the 1960–97 period. Despite the low number of cases (126 polities with 64 failures), the estimates are very clearly defined: Economic openness clearly increases the likely duration of the polity. The 2.7 factor increase in trade increases

estimated duration by as much as 127%. Increasing the level of GDP per capita has the strongest impact on duration in democracies. Democracies in Sub-Saharan Africa may expect to live only 1/8 as long as those of Western Europe.[29] Hence, the analysis not only supports arrow C in the liberal model (Figure 1), which predicted that a high level of development should lead to or stabilize democracy. There seems also to be a direct effect of an open economy on the stability of democracies, which is not found for the other regime types.

Strangely, the prospects for democratic survival is not reduced by being surrounded by autocracies and inconsistent regimes. On the opposite, there seems that democratic institutions thrive particularly well in such conditions.

For democracies, the estimate for Proximity of Independence is less than one, but not statistically significant – democracy is not more stable in new states. Breaking the analysis up into the three subsets suggests an explanation of why polities in new states seems to be most stable: Autocracies are clearly more stable when states are young, and since they account for a large fraction of the polities they contribute the most to the estimate in Model 4A. When states have existed for some time, autocratic political systems seems to be less viable. Although the estimate for Proximity of independence in democracies is not statistically significant, it is consistent with the trajectory postulated by modernization theory. As noted in connection with the civil war model (Table 3), there is endogeneity in this model, too. Just as foreign investors and prospective trading partners may anticipate civil war, they may anticipate regime change. An unknown portion of the positive estimate for trade and FDI is due to this anticipation. However, the endogeneity argument cannot explain the considerable differences in the estimates for trade/GDP between the three regime types. This may indicate that globalization really increases democratic stability. Moreover, if the anticipation biases the estimates in the destabilizing direction, this implies that the true estimate for autocracies, purged of endogeneity, should be even lower: Globalization may be associated with the democratization of autocracies.

Conclusion

In this chapter, we have outlined and compared two models of how globalization is likely to affect the risk of civil war. Overall, we find considerably more support for the liberal model than for the structuralist, anti-globalist model. Trade does appear to have a capacity for increasing internal peace – not directly, but via trade's beneficial effects on growth and increased political stability.

Overall, we find economic openness to be associated with higher growth. This is particularly clear when using the Sachs & Warner measure of economic openness. Measured as Trade/GDP, it is unclear whether globalization causes growth or vice versa, but there is evidently a positive relationship between the two variables. Our results give no support to the idea that globalization reduces growth, not even for poor countries. We found some evidence that trade increases income inequality. However, in contrast the robust link established between income inequality and violent crime (Fajnzylber, Lederman, and Loayza, 1999), we do not find any relationship between inequality and civil war. In sum, the beneficial effect of trade and foreign investment outweighs whatever violence may be generated by increased inequality. We find that economic openness is associated with greater stability of political systems. This effect is particularly strong for democracies, but also positive for inconsistent regimes and autocracies. Finally, in our analysis of the factors increasing the likelihood of civil wars, we find no direct impact of economic openness. However, countries with a high income per capita and a stable political system have considerably lower risk of civil war than those without. Hence, since we find economic openness to increase average income and political stability, we do find an indirect conflict-reducing effect of globalization.

However, we should note are three caveats to this conclusion: First, our empirical investigation makes use of data at a fairly high level of violence and it remains to be seen whether more evidence can be found for the structuralist thesis using data on lower-level violence. Secondly, while the effects of globalization may be largely successful overall, the question still remains whether some parts of the world are being marginalized in the process of globalization and suffer from some of the ills described by the structuralists. Our tentative judgment would be that great parts of Africa and some other areas marred by poverty, poor governance, and conflict are victims of too little globalization rather than too much. While it does not seem very plausible to us that successful globalization in some regions should be contingent on marginalization in others, this remains to be investigated rigorously. Thirdly, our in-

dicators of globalization does not capture certain aspects of international trade that is clearly related to civil war: in countries as Angola, Sierra Leone, and Liberia, the exports of diamonds, timber and drugs have financed rebel groups and militarily adventurous state leaders. Likewise, these groups have acquired weapons through the international market for arms. More liberal and efficient international trade has increased the incentives for wars many places. Still, our results indicate that the beneficial effects of globalization balance this. This particular type of trade can be handled by targeted sanctions and regulations, not by reducing economic openness in general.

References

Aghion, Philippe and Jeffrey G. Williamson. 1998. *Growth, Inequality and Globalization. Theory, History and Policy*. Cambridge: Cambridge University Press.

Ahluwalia, Montek S. 1976. 'Income Distribution and Development: Some Stylized Facts', *American Economic Review* 66(2):128–135.

Alderson Arthur S. and Fracois Nielsen. 1999. 'Income Inequality, Development, and Dependence: A Reconsideration', *American Sociological Review* 64(4): 606–631.

Alesina, Alberto, Enrico Spolaore, and Romain Wacizarg. 2000. 'Economic Integration and Political Disintegration', *American Economic Review* 90(5): 1276–1296.

Beck, Nathaniel and Jonathan N. Katz. 1995. 'What to Do (and Not to Do) with Time-Series Cross-Section Data', *American Political Science Review* 89(3): 634–647.

Bhagwati, Jagdish and Marvin H. Kosters. 1994. *Trade and Wages: Leveling Wages Down*? Washington, DC: AEI Press.

Bornschier, Volker and Christopher Chase-Dunn. 1985. *Transnational Corporations and Underdevelopment*. New York: Praeger.

Boswell, Terry and William Dixon. 1990. 'Dependency and Rebellion: A Cross-National Analysis', *American Sociological Review* 55(4): 540–559.

Collett, Dave. 1994. *Modelling Survival Data in Medical Research*. London, etc.: Chapman and Hall.

Collier, Paul. 1999. 'On the Economic Consequences of War', *Oxford Economic Papers* 51: 168–183.

Collier, Paul and Anke Hoeffler. 2002. 'Greed and Grievance in Civil War', *Quarterly Journal of Economics* 117(00): 000–000, in press.

Deininger, Klaus and Lyn Squire. 1996. 'A New Data Set Measuring Income Inequality', *World Bank Economic Review* 10(3): 565–591.

de Soysa, Indra and Nils Petter Gleditsch. 2002. *Conflict and Development in the Era of Globalization and Fragmentation: The Liberal Globalist Case*. Study for the Swedish Ministry of Foreign Affairs. Oslo: PRIO. To be published in an edited volume.

de Soysa, Indra and John Oneal. 1999. 'Boon or Bane? Reassessing the Effects of Foreign and Domestic Capital on Economic Growth', *American Sociological Review* 64(5): 766–782.

Dollar, David. 1992. 'Outward-oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976–85', *Economic Development and Cultural Change* 40(3): 523–544.

Dollar, David, William Easterly and Roberta Gatti, 1999. 'On the Determinants of Political Instability'. Paper presented to the workshop on 'Economics of Civil Wars, Crime, and Violence', World Bank, Washington, DC, 22 February. URL?

Dollar, David and Aart Kraay. 2001a. 'Trade, Growth, and Poverty'. Working paper. Washington, DC: World Bank, June. http://econ.worldbank.org/files/2207_wps2615.pdf

Dollar, David and Aart Kraay. 2001b. 'Growth is Good for the Poor'. Policy research working paper. Washington, DC: World Bank. http://econ.worldbank.org/files/1696_wps2587.pdf

Dollar, David and Aart Kraay. 2002. 'Spreading the Wealth'. *Foreign Affairs* 81(1):120–133.

Esty, Daniel C., Jack Goldstone, Ted Robert Gurr, Barbara Harff, Pamela T. Wurko, Alan N. Unger, and Robert S. Chen. 1998. 'State Failure Task Force Report: Phase II Findings'. McLean, VA: Science Applications International Corporation.

Fajnzylber, Pablo, Daniel Lederman, and Norman Loayza. 1999. 'Determinants of Crime Rates in Latin America and the World. An Empirical Assessment'. Working paper, The World Bank. URL: http://econ.worldbank.org/projects/doc.php?type=5&sp=3102&st=&id=13213.

Fearon, James D. and David D. Laitin. 2001. 'Ethnicity, Insurgency, and Civil War'. Paper presented to the 97th Annual Meeting of the American Political Science Association, San Francisco, CA, 30 August–2 September.

Firebaugh, Glenn and Frank D. Beck. 1994. 'Does Economic Growth Benefit the Masses? Growth, Dependence, and Welfare in the Third World', *American Sociological Review* 59(5): 631–53.

Firebaugh, Glenn. 1992. 'Growth Effects of Foreign and Domestic Investment', *American Journal of Sociology* 98(1): 105–130.

Friedrich, Robert J. 1982. 'In Defense of Multiplicative Terms in Multiple Regression Equations. *American Journal of Political Science* 26:797–833.

Galtung, Johan. 1971. 'A Structural Theory of Imperialism', *Journal of Peace Research* 8(2): 81–117.

Gates, Scott; Håvard Hegre, Mark Jones and Håvard Strand. 2001. 'Institutional Inconsistency and Political Instability: Persistence and Change in Political Systems Revisited, 1800–1998'. Paper presented to the 42nd Annual Convention of the International Studies Association, Chicago, IL, 20–24 February.

Gissinger, Ranveig and Nils Petter Gleditsch. 'Globalization and Conflict. Welfare, Distribution, and Political Unrest', *Journal of World-Systems Research* 5(2): 274–300, Spring 1999; http://csf.colorado.edu/jwsr/

Gleditsch, Kristian Skrede. 2002. *All International Politics is Local: The Diffusion of Conflict, Integration, and Democratization.* Ann Arbor, MI: University of Michigan Press.

Greene, William H. 1997. *Econometric Analysis*. 3rd. ed. Upper Saddle River, NJ: Prentice-Hall.

Gurr, Ted Robert. 1974. 'Persistence and Change in Political Systems, 1800–1971', *American Political Science Review* 65(4): 1482–1505.

Hegre, Håvard, Tanja Ellingsen, Scott Gates, and Nils Petter Gleditsch. 2001. 'Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816–1992', *American Political Science Review* 95(1): 33–48.

Hibbs, Douglas A. 1973. *Mass Political Violence. A Cross-National Causal Analysis.* New York: Wiley.

Jaggers, Keith and Ted Robert Gurr. 1995. 'Tracking Democracy´s Third Wave with the Polity III Data', *Journal of Peace Research* 32(4): 469–482.

King, Gary and Langche Zeng. 2001. 'Improving Forecasts of State Failure', *World Politics* 53(4): 623–658.

Korzeniewicz, Roberto Patricio and Timothy Patrick Moran. 1997. 'World-Economic Trends in the Distribution of Income, 1965–1992', *American Journal of Sociology* 102(4): 1000–1039.

Kuznets, Simon. 1955. 'Economic Growth and Income Inequality', *American Economic Review* 45(1): 1–28.

Levine, Ross and David Renelt. 1992.'A Sensitivity Analysis of Cross-Country Growth Regressions', *American Economic Review* 82(4): 942–63.

Lichbach, Mark Irving. 1989. 'An Evaluation of 'Does Economic Inequality Breed Political Conflict?' Studies', *World Politics* 41(4): 431–470.

Lipset, Seymour Martin. 1959. 'Some Social Requisites of Democracy: Economic Development and Political Legitimacy', *American Political Science Review* 53(1): 69–105.

Luttwak, Edward. 1993. *The Endangered American Dream*. New York: Simon and Schuster.

Martin, Hans-Peter and Harald Schumann. 1998. *The Global Trap: Globalization and the Assault on Democracy and Prosperity*. London and New York: Zed and St. Martin's. [Originally published in 1996 as *Die Globalisierungsfalle.Der Angriff auf Demokratie und Wohlstand.* Reinbek bei Haimburg: Rowohlt].

Muller, Edward and Mitchell A. Seligson. 1987. 'Inequality and Insurgency', *American Political Science Review* 82(2): 425–451.

Murdoch, James C. and Todd Sandler. 2002. 'Economic Growth, Civil Wars, and Spatial Spillovers', *Journal of Conflict Resolution,* 46(1): 91–110.

Nielsen, François and Arthur S. Alderson. 1995. 'Income Inequality, Development, and Dualism: Results from an Unbalanced Cross-National Panel', *American Sociological Review* 60(5): 674–710.

Przeworski, Adam, Michael E. Alvarez, José Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development. Political Institutions and Well-Being in the World, 1950–1990*. Cambridge: Cambridge University Press.

Russett, Bruce M. and John R. Oneal. 2001. *Triangulating Peace*. New York: Norton.
Sachs, Jeffrey D. and Andrew Warner. 1995. 'Economic Reform and the Process of Global Integration', *Brookings Papers on Economic Activity* (1): 1–118.
Sachs, Jeffrey D. 2001. 'The Curse of Natural Resources', *European Economic Review* 45(4–6): 827–838.
Sachs, Jeffrey D. and Andrew Warner. 1999. 'Natural Resource Intensity and Economic Growth', in Jörg Mayer, Brian Chambers and Ayisha Farooq, ed., *Development Policies in Natural Resource Economies*. Cheltenham, UK and Northampton, MA: Elgar, 13–38.
Sala-I-Martin, Xavier X. 1997. 'I Just Ran Two Million Regressions', *American Economic Review* 87(2): 178–183.
Schneider, Gerald and Katherine Barbieri, ed., 1999. 'Trade and Conflict', special issue of *Journal of Peace Research* 36(4).
Summers, Robert and Alan Heston. 1991. 'The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950–1988', *Quarterly Journal of Economics* 106(2): 327–368.
Vanhanen, Tatu. 2000. 'A New Dataset for Measuring Democracy, 1810–1998', *Journal of Peace Research* 37(2): 251–265.
Wallensteen, Peter and Margareta Sollenberg. 2001. 'Armed Conflict, 1989–2000', *Journal of Peace Research* 38(5): 629–644.
Weede, Erich. 1995. 'Economic Policy and International Security Rent Seeking, Free Trade, and Democratic Peace', *European Journal of International Relations* 1(4): 519–537.
Wood, Adrian. 1994. *North–South Trade, Employment and Inequality*. Oxford: Clarendon.
World Bank. 1999. *World Development Indicators*. Washington, DC: World Bank Group.

Notes

*

[1] In particular, there is an extensive debate about trade and conflict, as evidence by Schneider and Barbieri (1999) and most of the articles in this volume.

[2] We might have used 'dependency theory' for this line of thought. However, we avoid this term, since it is associated with a particular historical period. The current objectives to the neoliberal model are similar in many ways to those of the 1970s, but the term dependency theory seems to be dead.

[3] For a more detailed discussion of these trends, see de Soysa and Gleditsch (2001).

[4] All the independent variables in Table 1 change slowly. Hence, using the four-year period as our time unit rather than the year does not involve much loss of information. At the same time, analysing four year periods lessens the problems with autocorrelation.

[5] We also tried controlling for democracy, using data from Polity III (Jaggers and Gurr, 1995). This variable is never significant. Since missing observations for the variable removes a number of cases from the analysis, and introduces collinearity, we present the results without it.

[6] We also ran two stage least square regressions where these three variables were instrumented. This analysis yielded very similar results, so the use of lagged variables seems sufficient to avoid endogeneity bias. When estimating the model with a non-lagged trade/GDP variable, the trade variable obtains a positive and significant estimate. Furthermore, we ran a Feasible Generalized Least Square (FGLS) regression (Greene, 1997: 511–513) to ascertain that autocorrelation in the series does not produce another type of bias. The estimates for the variables of interest were quite similar in this estimation, too, and there was not evidence of any problematic autocorrelation. The results from these estimations are available at http:www.prio.no/cwp/datasets.asp.

[7] The region indicators were included to partly account for other factors that influence countries' growth rates. The eight regions are West Europe and North America, East Europe, South Asia, East Asia, Central Asia, Middle East and North Africa, Africa South of Sahara, and Latin America. The period indicators account for world-wide fluctuations in growth rates. The estimates for each of the region and period indicator variables are available at http:www.prio.no/cwp/datasets.asp.

[8] The trade/GDP, FDI/GDP, and GNP per capita variables were centered by substracting the mean of each variable from all observations to minimize collinearity when creating interaction term. The implication of this is that the constant term is to be interpreted as the growth rate when these variables are at their mean for models 1A and 1B. In model 1D, the interpretation of the parameter estimate and the estimated t-value for each of the two main terms in the interaction construction is their effect/significance when the other variable is at the mean (cf. Friedrich, 1982).

[9] Negative values were replaced with 0.1%.

[10] One possible reason for the inconsistency between the Sachs and Warner indicator results and the trade/GDP and FDI/GDP variables, is that the denominator in the latter variables imply that they are negatively correlated with the size of the economies. Large countries trade less relative to GDP because they have larger internal markets. Hence, the trade-to-GDP ratio might act as a proxy for size rather than for economic openness. The two largest developing countries, India and China, have recently opened up their economies and increased their growth rate (Dollar and Kraay, 2002), but their relatively low trade-to-GDP ratios pull down the estimate for this variable.

[11] We also estimated the model including a lagged Sachs and Warner openness indicator to minimize endogeneity. The parameter estimate for the lagged variable is smaller (1.03) but statistically significant.

[12] Estimating an FGLS model with a common autocorrelation coefficient indicated a coefficient of 0.55. We also estimated various other models, all yielding similar substantive conclusions. These results are reported in the log files available at www.prio.no/cwp/datasets.asp.

[13] We also estimated the model using a Feasible Generalized Least Squares model (Greene, 1997: 511–513), which yielded very similar results. Model 2D could only be estimated using FGLS because of a high number of gaps in the country series.

[14] An increase in inequality does not necessarily imply that anyone gets poorer in an absolute sense. Dollar and Kraay (2001a,b) estimate that the increase in average income resulting from the economic openness is so large that the net average effect is that trade lifts people out of poverty, even though trade may be associated with inequality. We do not investigate the net effect of trade on poverty reduction here.

[15] Alderson and Nielsen (1999:621) also find that foreing investment increases inequality in non-core (i.e. developing) countries only.

[16] For a number of observations, FDI were zero or negative. These were replaced with FDI/GDP = 0.1% before log-transforming.

[17] This is in contrast to Alderson and Nielsen (1999), who find a significant positive relationship between foreign capital stock and inequality, and also a positive estimate for the flow of foreign investment.

[18] The Primary commodities variable is highly correlated with ln(GNP per capita) and washes out the effect of the GNP/capita main term.

[19] The Cox regression model estimates log relative risk of civil war (relative to a baseline), whereas the logistic regression model yields estimates of log odds of civil war. For rare events as civil wars, however, these measures are roughly similar. See Hegre et al. (2001) for a justification of the model. The use of the Cox regression model deviates from standard use of survival models as Cox regression, as we use calendar time as the time variable. The dataset samples all countries not already in civil war once for each time there is an outbreak of civil war. This allows estimating the relative risks of civil war breaking out in a country with certain characteristics, given that a civil war has broken out somewhere.

[20] The denominator 527 in the expression determines the half-life of six months. Hegre et al. (2001) finds this half-life to maximize the likelihood of the model.

[21] This is inconsistent with the results of the State Failure Project (Esty et al., 1998; see also King and Zeng, 2001), who find trade/GDP to be one of the most robust predictors of civil war. This discrepancy is mostly due to Esty et al.'s failure to control for population. To a lesser extent, the discrepancy may also be caused by their broader definition of the dependent variable, which also includes abrupt regime changes (cf. the results in Table 4 of this chapter).

[22] The results reported in Table 4 below show that democracies are the most stable political systems, and hence are least likely to have regime changes that we find to be strongly associated with civil war. Moreover, the inconsistent regimes, those that are neither consistent democracies nor autocracies, are the least stable. Hence, it is possible to trace an indirect relationship between regime type and the hazard of civil war.

[23] Since there is an inverted U-curve relationship between both development and inequality and development and civil war (c.f. Figure 4), we would expect to find a stronger relationship between inequality and civil war if we omit the GNP per capita variables. Estimating the model without these variables do increase the magnitude of the estimate for inequality, but it is still not significant (t=1.34). Hence, there is little support for the idea that the GNP per capita variable masks the effect of the inequality variable.

[24] Full definitions and sources are found in Gates et al. (2001).

[25] This measure is also explained in Gates et al. (2001).

[26] We tried out different half-life values, ranging from 0.5 to 16 years. Setting the half-life to 16 years gave the best fit to the data.

[27] The 95% confidence interval for this estimate is (2.0, 3.0). This estimate is considerably lower than the one reported in Hegre et al. (2001). This is due to a more inclusive definition of regime change, and the fact that political changes occured more often in the late 20th century than in the 1800–1960 period.

[28] This result contradicts the results of Przeworski et al. (2000: 124), who find that autocracies tend to change into democracies slightly more often when the level of income is increased. This difference in results may be due

to a different set of control variables, but is more likely to be due to the fact that Przeworski et al. do not distinguish between autocracies and inconsistent regimes.

[29] Although this analysis takes duration dependence into account, the difference between the African and Western European democracies' chances of survival is not as dramatic as it may sound. Since the definition of regime change is quite wide in this analysis, a 'failure' may equally well lead an slightly inconsistent democracy towards a more stable democratic setup as to a total breakdown in the democratic system. Such changes, however, are less likely in the old democracies in Western Europe, because they have reached a point where increasing suffrage and parliamentary control cannot be further increased. These effects are more fully discussed in Gates et al. (2001).