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The Limits of Economic Globalization Still Another North–South Cleavage?

Rafael Reuveny and William R. Thompson

Indiana University, USA

Abstract

Economic globalization has loomed, at least for some, as the world system's next crisis carrier. Globalization is said to accelerate economic growth rates, compel closer economic interactions throughout the globe, and trample on the distinctiveness of local cultures and sovereignty. While we accept the existence of economic globalization, our question in this article is whether it, or at least one important dimension of it, is truly a 'global' process. A number of cleavages that have characterized the global North and South in the past appear to be growing more acute. Globalization, predicated on a motor of global economic growth, should be expected to be less than universal if the pulsations and effects of global economic growth are less than universal across the global South and North. That being the case, our theory anticipates that one aspect of economic globalization, conceptualized here as economic openness to exports, and measured by the ratio of export value to economic output, will be more discernible in the global North, than in the global South. Moreover, trade globalization in the North should be positively affected by a rise in world economic growth and systemic leadership, whereas trade globalization in the South should be driven largely by Southern autonomous inertia and periodic economic crises. The empirical results largely support our theoretical expectations.

Key words: economic globalization • North–South cleavage • systemic leadership • trade globalization

1. INTRODUCTION

Hard on the heels of putting the Cold War bogeyman to rest, economic globalization has loomed, at least for some, as the world system's next crisis carrier. Globalization creates winners and losers and tramples on the distinctiveness of local cultures and sovereignties. For others, though, globalization compels closer economic interactions throughout the globe, carrying technological progress and economic integration to all parts of the planet and accelerating economic growth. Let the market do its job and the poor will catch up to the rich via trade-driven growth. The cleavages separating global North and South – developed

and less developed countries, respectively – will disintegrate and the world will be a better and Pareto-optimal, happier place.

While we certainly accept the existence of economic globalization processes, our question in this article is whether all aspects of it are truly ‘global’ processes. In other words, are all dimensions of economic globalization experienced in the same intensity by the global North, or industrialized countries, and the global South, or the developing countries? There are a number of cleavages that have characterized the global North and South in the past and present. They appear to be growing more acute – rather than less so. Economic globalization, in general, predicated on a motor of global economic growth, should be expected to be less than universal if the pulsations and effects of global economic growth are less than universal across the global North and global South. Indeed, to the extent that economic growth and integration are monopolized by the North, North–South cleavages are likely to be only accentuated – not attenuated – by economic globalization.

In this article, we anticipate that in the long run most of the important dimensions of economic globalization will be significantly more discernible in the global North than in the global South. By long run, we mean time periods encompassing more than one hundred years. The theoretical analysis builds on, and extends, the leadership long-cycle approach to global international political economy to deal with processes of Northern and Southern economic globalization. We remain consistent in our expectation that systemic leadership and long waves of economic growth are drivers of systemic phenomena such as economic globalization. However, we now develop a stronger historical case for the expectation that the impacts of economic growth stimuli should be felt unevenly due to stratified, path dependencies that are entrenched in the modern history of economic growth. Systemic leadership, long waves of economic growth, and economic globalization are expected to be mainly focused in the global North and much less so in the global South, thereby further accentuating the cleavages between North and South and intensifying global inequalities. We test this theory empirically, using statistical analysis.

To model statistically the behavior of Northern and Southern economic globalization, a number of design issues need to be resolved. First, we need to distinguish between Northern and Southern countries, which is done using a method discussed later. Second, economic globalization is a multidimensional concept, involving international movements of goods and services (trade), physical capital (foreign direct investments), financial capital (portfolio investments) and, less so, labor (migration). We focus solely on trade since data on investments, especially in terms of specific Southern investments, are not available for the long time periods that we need to examine. Since we are narrowing our empirical examination, the usual reservations about not claiming that our results address all facets of economic globalization should prevail.

Third, how should one best measure trade globalization? We utilize series on exports measured in constant prices, since data on imports are also not available for our long period. Export globalization is defined conventionally by the ratio of export value to gross domestic product (GDP). Fourth, the nature of our problem demands data that are highly comparable across time and space. The bulk of these data, therefore, come from Angus Maddison (1995).

The empirical analysis consists of two parts: visual and statistical. Visual analysis suggests that export openness in the global system is almost a monopoly of the North. Southern export openness over time does not resemble a completely flat line but, compared to the results for the North, there is little variance demonstrated since 1870. We then utilize our theory in developing a statistical model for Northern export openness. The independent variables are world economic growth rate and level of systemic leadership. Control variables are Northern export openness inertia, level of Northern democracy, and level of Northern conflict (militarized disputes involving a Northern state at least on one side of a dyad, and civil wars that take place inside the North). The Southern model is specified similarly. Southern export openness is regressed on systemic leadership, world economic growth, Southern trade openness inertia, Southern democracy, Southern conflict, and a measure of Southern debt crisis.

In the empirical test, our variables capture much of the variance in Northern export openness. The effects of system leadership, world economic growth, Northern export openness inertia, and Northern democracy on Northern export openness are found to be positive and statistically significant. The effect of Northern conflict on Northern openness is mixed. We then turn to the South. We find that world economic growth, and the levels of Southern democracy and Southern conflict are not statistically significant determinants of Southern export openness. Systemic leadership has a weak positive effect on Southern export openness. Southern export openness is primarily determined by inertia (its value in the previous period) and Southern debt crises. The effect of Southern export inertia on Southern export openness is positive. The effect of debt crises on Southern export openness is negative in the short run, and positive in the longer run.

In sum, the trade export dimension of globalization is proceeding very unevenly across the planet. The implications for Southern development are not attractive. It is frequently argued that economic globalization, particularly international trade, is the engine of economic growth. While a small number of countries in Asia may have capitalized on the economic growth-promoting influence of focusing their national production on exports, the global South, as a whole, does not appear to be following this path. Thus, contrary to the market optimists, we should not expect that economic globalization will reduce the contemporary growing income gap between the rich global North and the much poorer global South. It seems more likely that economic globalization will expand

the gap. How that will affect the argument that globalization will eliminate all national differences and local traditions is less clear. But if globalization is less than global, one would think that the juggernaut interpretation of globalization as a destroyer of all local traditions and culture is also likely to be exaggerated.

The remainder of this article is organized as follows. The next two sections present an overview of the leadership-long cycle perspective on global international political economy, and extend it to deal with Northern and Southern economic openness to export. Section four presents our research design and describes our data and indicators. This is followed by a section discussing our empirical results. We conclude the article with a summary and discussion of the broader implications of our findings.

2. THE LEADERSHIP-LONG CYCLE PERSPECTIVE

The leadership-long cycle perspective observes that historically, systemic leadership and world economic growth have followed consistently a twin-peaked wave pattern, each wave lasting roughly 50 years.¹ During the first – *ascent* – wave, one country rises to leadership in the world system. During the second – *catch-up* – wave, the leader is established but then begins a relative decline as competitors emerge. In *upswing* phases of each wave, leadership and growth are expanding. In *downswing* phases of each wave, they are contracting or growing more slowly. In the ascent wave, political relationships among the most powerful states are destabilized by uneven growth. In the downswing phase of the ascent wave, a global competition follows the destabilization, which historically (between 1494 and 1945 in any event) involved global combat between coalitions led by the leader and by a challenger. One state emerges as the principal winner thanks in large part to its lead in technological innovation. This state is denoted as the system leader. However, leadership is a dynamic force. A catch-up wave follows in which the competition of the leader with new challengers builds up. The leader gradually loses its economic and political edge, and a new ascent wave is initiated with the next system leader emerging.

A number of generalizations related to this interpretation have been developed and tested empirically elsewhere.² For instance, the key to global ascent is the successful monopolization of radical innovations in leading sectors of commerce and industry.³ The introduction of leading sectors leads to the growth of the pioneering lead economy and, in turn, the growth of the lead economy stimulates world growth. The monopoly profits finance the build-up of the leader's global reach military forces critical for maintaining its global economic and security concerns. At its peak, the system leader maintains a commanding lead in global reach power. Then, as its economic centrality dissipates, so too does its lead in global reach military capabilities. World economic growth and shifting concentrations in radical innovation eventually reduce the economic

lead of the pioneer. Even so, only some economies are able to converge on the leader's position of affluence and technological sophistication.

One primary feature of this process is its discontinuous nature. Economic growth and radical innovations have been manifested as long waves that decay when the innovational novelties lose their ability to accelerate growth. As old innovations become routine components of the world economy, new spurts in economic growth hinge on the advent of the next cluster of radical technological change. A second strong feature, therefore, are alternating periods of fast growth (stimulated by new technology) and slow growth (brought on by the routinization of now old technology). To the extent that new technology is slow to emerge or encounters various inadequacies in infrastructure, or political restrictions on change, slow or negative economic growth (world economic depression) is likely to persist until at least some of these barriers are overcome.

Several extensions of the leadership-long cycle perspective to deal with various North–South-related socioeconomic and political phenomena have been pursued recently in the literature. These extensions have centered on issues such as North–South income inequality, recurring Southern debt crises, and North–South violent conflict.⁴ For each of these phenomena, a theoretical and empirical case has been made that they are strongly influenced by global structures and processes, which predicated ultimately on the nature of technological change and the consequent political-economic hierarchy outlined in the above discussion.

3. BASIC EXPECTATIONS ABOUT EXPORT GLOBALIZATION

In this section, we combine leadership long cycle principles with some selected observations made by economic historians about what might be called the 19th and 20th century channels of world economic growth and trade. We retain the assertion of the leadership-long cycle perspective that systemic leadership and the long waves of discontinuous economic growth, for which system leaders are primarily responsible, drive long-term fluctuations in world economic activity. Economic innovation in the lead economy of the system leader creates technological spurts that drive long waves of economic growth and fund systemic leadership foundations and capabilities. Yet economic growth and trade never operate on a level playing field. Some parts of the world economy are always favored over other parts, and we need to build this fact of life into our models of growth and trade.

From our perspective, economic growth and trade are especially dependent on the intermittent surges in technological change introduced by the system's lead economy. As a consequence, new products and industries emerge in discontinuous fashion. So, too, do new ways of distributing commodities faster and cheaper. Radical innovations and lowered transaction costs do not simply fall from the sky; they are introduced and developed primarily by system leaders. In the 17th century, it was the Dutch. The 18th and 19th centuries were dominated

by British technological change. In the 20th and perhaps the 21st centuries, the US economy has served as the principal pioneer of changes in the way people produce and exchange goods.

Surges in globalization, therefore, are fueled by waves of long-term growth stimuli emanating primarily from the system leader's economy. These spikes in economic growth drive economic growth and lowered transaction costs in the system leader's economy that, in turn, drive growth and lowered transaction costs in the rest of the world. In order to obtain the new products, some reductions in barriers to trade will ensue. Technological diffusion will enhance the ability of some other economies to produce the new products and these expanded competencies will also encourage lowered trade barriers. In the process, the system leader also serves as a principal source of investment and finance, thereby providing further encouragement for positive growth spirals.

Order in long-distance commerce is another contribution traceable to system leaders. Technological growth and predominance in leading sectors of commerce and industry give the system leader an added incentive to develop specialized capabilities of global reach. Trade routes must be kept open and made relatively secure from interference and piracy. For this reason a concentration in economic technological innovation tends to be accompanied by a concentration in global reach capabilities that historically have been predominately naval given the maritime medium favored by long distance trade throughout much of the past five centuries. Not only does the system leader have a strong incentive to develop such power, it also has the wherewithal – thanks to the rents from technological leadership – to fund it.

Globalization is thus stimulated fundamentally by a package of technological change, lowered transaction costs (including costs pertaining to security), lowered trade barriers, expanded investment, and economic growth diffusion all of which are attributable to some great extent to the economic and political-military actions of system leaders. If the source of these changes is highly concentrated, it should come as no surprise that the impacts of the changes are apt to be less than universal. Some parts of the world are likely to benefit more while others benefit less, depending on various factors such as resource endowment, location, and receptivity to technological diffusion.

If we continue with the assertions that technological innovation is critical to modern economic growth, discontinuous in time, and initially concentrated in space, we find, according to leadership long cycle theory, that Britain in the 19th century and the United States in the 20th century have been the most favored locations in the world economy and the lead economies of the past two centuries. But what about the rest of the world? Is it reasonable to argue that all other parts of the world economy had equal chances to either produce their own leader or to catch up to the technological leaders? We think not.

Maddison (1995), following the lead of Adam Smith (1776), argues that from an 1820 perspective, a combination of various criteria (per capita income,

resource endowment, population, and institutional/societal characteristics likely to influence economic performance) would have yielded the following regional hierarchy of zones within the world economy that were most likely to do well in the future (where 1 stands for most likely and 7 stands for least likely): 1) Western Europe (including Britain); 2) western offshoots (e.g. Canada, the United States, Australia, New Zealand); 3) Southern Europe; 4) Eastern Europe (including Russia); 5) Latin America; 6) Asia; and 7) Africa. To a considerable extent, we argue, as does O'Brien (2006) that their prospects were also affected by the degree to which they were to become integrated to the world economy through migration, investment, and trade.

The first two zones (Western Europe and its offshoots) performed best in terms of growth and trade in the 19th and 20th centuries. Southern Europe, for the most part, began to catch up with Western Europe in the second half of the 20th century. Eastern Europe has had mixed success thanks in part to an extended period of unsuccessful experimentation with highly centralized economic production decisions and deliberate efforts to reduce the degree of integration with Western Europe. The last three zones, Latin America, Asia, and Africa, have also experienced considerably mixed outcomes ranging from the remarkable catching up by Japan, and other Asian Tigers (realized and still emerging), respectively, to the stagnation and worse fate of a number of African economies. Overall, however, the point is that the 1820 regional hierarchy has by and large been maintained into the 21st century.⁵

Why might this be the case? Part of the answer is that the Western European and offshoots zones have so far retained world technological leadership. Diffusion from, and imitation of, the British and US industrialization leads were most likely to occur within these two zones because of the criteria suggested by Maddison (essentially relative affluence and facilitative environments for economic growth and trade). As a consequence, Belgium, France, Germany, and the United States were among the first places to follow the British industrial lead in the first half of the 19th century. Moreover, 19th and 20th century flows of skilled labor and investment demonstrated a bias in moving from Western Europe to its offshoots. O'Brien (2006) adds that the external security costs of the offshoots were augmented in a major way by the 19th century services of the British navy. Later, in the second half of the 20th century, Western Europe was the region that was the most successful in converging on the US lead in per capita income. This convergence can also be attributed non-controversially in part to the external security subsidies provided by US military capabilities after 1945 (see, for instance, Gilpin, 1975, among many others).

At the other end of the regional hierarchy, different stories characterized specific locales within the heterogeneous 'Third World' of Asia, Latin America, and Africa. Yet, for a long time, there were also some common denominators in terms of relatively high population growth, subsistence-oriented economic production,

marked income inequalities, and institutions that were less than conducive to economic growth. To a great extent, these three zones have also specialized in exporting undiversified primary products to the more technologically advanced zones, and, to a lesser extent, importing their manufactured goods. Nor has it helped that a number of the 'first world's' technological innovations have created manufactured substitutes for many of the 'third world's' raw materials. The fact that much of the 19th and 20th century pool of movable investment capital and skilled labor migrated elsewhere is another negative contribution to Southern economic growth.

The 'in-between' zones of Southern and Eastern Europe enjoyed or suffered different fates that may even out in the long run but in the intermediate run has led to a more rapid integration of Southern and Western Europe. Some parts of Eastern Europe probably will emulate this convergence while other parts will do so much more slowly, if at all. Nevertheless, our current concern is not with forecasting possible outcomes within or between Maddison's seven zones.

We suggest instead that the regional hierarchy can be simplified further into two macro-zones. Western Europe and the western offshoots are the core of a global North that has been augmented by adherents from Southern and Eastern Europe, as well as by a small number of Asian states. Latin America, Asia, and Africa historically have constituted the core of a global South, incorporating as well, at various times, parts of Eastern and Southern Europe. Neither macro-zone assignment guarantees permanent success or failure in economic growth and trade. Nor is membership in one zone a terminal categorization. It is conceivable that Northern states can become Southern and certainly the opposite type of status mobility exists. But the prospects for economic growth and trade, along with other imaginable outcomes, have been in the 19th and 20th centuries and will probably continue to be more benign in the global North than in the global South.

Economic globalization is an old process of increased interaction and integration between and among populations located initially within Afro-Eurasia and, much later, incorporating the Americas and Australia. Interaction and integration does not proceed inexorably or continuously. Instead, interaction and integration, along with technological innovation and economic growth, pulsate or come in accelerated spurts. But if the world economy is composed of zones with much different prospects for generating economic growth and trade, it is reasonable to expect that a) contemporary globalization will proceed unevenly and that b) Northern participation in contemporary globalization processes should outpace Southern participation. Technological development, led by the world system's lead economy, with implications for the emergence of new products, new ways of production, and faster, less expensive transportation modes, should be more intensely registered within the North than within the South. Northern economies are better prepared to

accommodate successive changes in best practices. They are also more inclined to both create products for export that reflect their advanced technology and to trade with other similar advanced economies that can afford and absorb their exports. The contemporary globalization of trade should thus proceed with a marked intra-Northern bias and be driven by waves of economic growth and leadership generated by the system leader.

One empirical question is just how marked that bias is. Is it moderate or extremely strong? If the bifurcation of growth and trade prospects into two zones is quite pronounced, as we think it is and has been for some time, we should expect to find that the unevenness of globalization propensities is also quite strong. It may even be that the oft-discussed threat to indigenous cultures and traditions emanating from globalization pressures may prove to be less worrisome since the Southern participation in contemporary trade globalization is simply too limited.

But we need to examine the underlying empirical questions before we jump to possible conclusions – just how biased, if at all, are contemporary trade globalization processes? Are they virtually monopolized by a vibrant North? Or, are we exaggerating the bi-zonal division of the world economy and the expectation of much different trade globalization propensities? Moreover, our assertion that the system leader's edge in technological growth and global reach capabilities, coupled with discontinuous long waves of growth stemming from technological spurts, are important drivers of globalization also needs empirical assessment.

4. EMPIRICAL RESEARCH DESIGN

The units of analysis in our interpretation are North and South. For the empirical test then, we need to assign countries to Northern and Southern groups. In aggregating variables for both groups, we will focus on differences between the groups and assume that the differences within each of the groups are not sufficient to undermine the rationale for our comparison. Threats to validity posed by this approach are discussed toward the end of this section. But first we must discuss the empirical model, and then attend to several design issues. The dependent variables are the levels of globalization attained by each bloc. The core right hand side variables are world economic growth and systemic leadership.

4.1. Empirical Data and Model

North and South Classification

There is no convention for North–South classification. Some studies base their identifications of countries as Northern and Southern on the timing and extent of industrialization, but leave the criteria implicit (e.g. Rostow, 1979; Freeman and Perez, 1988; McCormick, 1988). Other studies classify countries as Northern

or Southern on the basis of shorter periods of time, often mixing economic and military capabilities (Arrighi and Drangel, 1986; Kick, 1987; Kentor, 2000).

We classify countries as Northern or Southern based on level of economic development, but with a systemic twist. A country is classified as Southern if its real gross domestic product (GDP) per capita is equal to or less than 25 percent of the highest real GDP per capita in the system; otherwise, it is classified as Northern (Reuveny and Thompson, 2002, 2003, 2004a). Economic development, in this view, is a process of catching up, or at least closing significantly the gap, with the technological frontier established by the system leader. Our use of GDP per capita does not mean that economic development is simply a matter of attaining some level of income. We use it because it is simple and comes close to working without intervention. Constructing indexes on the national ‘modernity’ of technology would constitute an ambitious project in its own right.

While our North–South classification method is not perfect, we need a threshold that is not static. Using a single absolute threshold, as suggested, for example, by Kuznets (1972) or Passe-Smith (1998), will not work for long historical series. Our experimentation with higher thresholds (for example, 33 percent, 50 percent) restricted the North to a few Western European states and a few of its offshoots. The 25 percent threshold permits more non-Western European/non-North American states to join the North beginning in the 1920s. If forced to choose between a conservative and liberal North–South threshold, we prefer to err on the liberal side. Table 1 presents the resulting coding beginning in 1870.⁶

Table 1 conforms to clues provided in the economic history literature. The order of leaving the South and joining the North implied by Table 1 seems intuitively satisfying: the Western European countries leave the South and enter the North before Australia, New Zealand, and Japan. Some Southeast European countries enter the North before the Asian countries. Our South also includes many of the overtly less developed countries (LDCs), such as Kenya and India.⁷ Overall, we find this list to be less than perfect but possessing considerable face validity.⁸

Economic Globalization

Our dependent variable, economic globalization, is a multifaceted concept that involves trade, foreign direct investment, portfolio investment, and movement of factors of production across countries (physical capital, and much less so labor). The empirical analysis of our expectations require long time series. For almost all countries, data on foreign direct investments and portfolio investments are only available for recent decades. Fortunately, trade data are more readily available for many countries over long periods of time. While our argument pertains to all aspects of economic globalization, we focus here on the more operationalizable activity of trade globalization.

Table 1 Northern-Southern countries classification

North		South	
United Kingdom	Japan (after 1894)	Argentina	Philippines
United States	Finland (after 1919)	Brazil	Taiwan (to 1976)
Belgium	Poland (after 1929)	Chile	Thailand
Netherlands	Russia (after 1931)	Colombia	China
Switzerland	Greece (after 1956)	Mexico	India
Denmark	Portugal (after 1957)	Peru	Burma
Austria	Taiwan (after 1977)	Venezuela	Indonesia
France	South Korea (after 1983)	Turkey	Pakistan
Sweden		Japan (to 1893)	Bangladesh
Canada		Finland (to 1918)	Ethiopia
Australia		Poland (to 1928)	Egypt
New Zealand		Russia (to 1930)	Morocco
Ireland		Bulgaria	Nigeria
Czechoslovakia		Yugoslavia	Zaire
Hungary		Rumania	Ivory Coast
Norway		Greece (to 1955)	Kenya
Spain		Portugal (to 1956)	Tanzania
Italy		South Korea (to 1982)	

Note: Maddison (1995) provides economic data for these states prior to their independence, wherever that is applicable. Thus, these states are considered as Northern or Southern from 1870 on unless their series begin later than 1870 due to missing data, or as otherwise indicated due to movement from the South to the North.

Our indicator of trade globalization is constructed utilizing time series data on export values. The export indicator is defined by the ratio of total export value of the North or the South to the world, expressed in constant dollars, to total gross domestic product (GDP) of the North or South, expressed in constant dollars from the same base year. Our focus on exports is partly motivated by the fact that import data are not available for long periods. It should also be recalled that any export also is someone else's import. Some countries import-export balances are highly imbalanced, to be sure, but we expect these national asymmetries to even out in the aggregates with which we are working.

Initially, we attempted to create national export series for each of the countries in our Northern and Southern samples.⁹ This approach proved to be fruitless, especially for the Southern states, because of the lack of early data and the usual difficulties encountered in meshing extant information in multiple currencies, with and without various controls for price fluctuations. Our default strategy consisted of first calculating for each country in our sample the proportion of world trade as reported in Banks (1971), and updated via various volumes of the *UN Statistical Yearbook*. We then aggregated this information into Southern and Northern proportions of world trade. Maddison (1995) reports a series on the value of world exports in constant 1990 dollars for 1870, 1881–1913, 1924–38, and 1950–92. After interpolating straight forwardly for the missing years, we then converted the world export figures into Southern and Northern exports

for each year between 1870 and 1992, based on our classification of countries to North and South, discussed above.¹⁰ These numbers were then divided by the respective GDP aggregations for the South and North developed in earlier studies (Reuveny and Thompson, 2002, 2003, 2004a) to create macro-trade openness indices (exports/GDP).

In as much as Maddison's data tend to stop short of the 21st century, there is some possibility that stopping our analysis in 1992 will distort the evidence for fairly recent Southern globalization. When appropriate, we will introduce an independent measurement of export globalization that encompasses the 1983–2003 era as a check on the possibility of distortion. These data will not be fully comparable with Maddison's data, which are based on different constant price assumptions, but they allow us to assess whether they suggest similar or dissimilar tendencies to what we are observing towards the end of the 1870–1992 series.

World Economic Growth

Our first independent variable, world economic growth, is measured by aggregating national data. Time series for world economic growth inevitably require construction. Therefore, these data may exhibit bias toward data that are readily available in a comparable format. Annual real GDP data, expressed in 1990 dollars, for 17 major countries since 1870, come from Maddison (1992).¹¹ The national GDP data are aggregated to represent the world's real GDP. Yearly growth rates are then computed from the world's GDP series.

Systemic Leadership

Our second core independent variable, systemic leadership, is measured by the leader's share of global reach capabilities, approximated by concentration of naval forces. Coming from Modelski and Thompson (1988), this measure has been used in both the leadership long-cycle research program and outside of it.¹² It is predicated on the extent to which capabilities are concentrated in one state. In 1870–1992, it is computed based on naval expenditures, first class battleships, dreadnought class battleships, aircraft carriers, nuclear attack submarines, and nuclear ballistic missiles, for Britain, France, Germany, Japan, Russia/USSR, and the United States. Maritime or naval power and the power to project coercion over long distances were largely synonymous in much of the post-1494 era. More recently, other dimensions of global reach have been developed that rely less on naval platforms (air power, satellites, cruise missiles), but often these too require naval support.

There also are economic forms of systemic leadership, manifested in economic predominance. Reuveny and Thompson (1999, 2004b) show there is a close relationship between economic leadership and global reach capability. In terms of the newer dimensions of global reach, we suspect that the preponderant profile established by a naval lead also reflects leads in other coercive components, with the possible exception of land forces.¹³

In any event, in 1870–1945, the system leader role was played by Britain (less so after the First World War). Britain, however, was in relative decline from at least 1870 on. From 1946 to 1992 (the end of our data) the system leader role was performed by the US. The time series for systemic leadership is thus generated by splicing the global reach capability share data of Britain with that of the US in 1946.

While we view systemic leadership and world economic growth as the principal drivers of economic globalization, other forces, no doubt, also influence this phenomenon. We need a modeling platform suggesting control variables. Unfortunately, the literature has not suggested a model of macro-zonal (North–South) trade with the world. Existing trade models either deal with bilateral trade or with comparative advantage. We employ insights from related studies as well as analytical intuition in identifying four possible controls for our purpose: democracy, conflict, macro-zonal trade openness inertia, and debt default.

Democracy

Several studies suggest that democracies trade more with other democracies than with autocracies (e.g. Dixon and Moon, 1993; Morrow et al., 1998). This is attributed to higher intra-democratic trust levels in comparison to democratic-autocratic trust levels. It is reasonable to expect that political freedom in a country will promote economic freedom in that country, which also should include more international trade overall. These considerations lead us to expect that trade flows of the macro-zone with the world should rise as the aggregate level of democracy in the macro-zone rises.

Northern and Southern democracy levels are measured based on Polity III data (Jaggers and Gurr, 1995). This dataset records a 10-point index that measures democratic characteristics of national regimes since the early 19th century, and a 10-point index that measures autocratic characteristics. Because many governments have both democratic and autocratic characteristics, we measure the level of democracy as the difference between the two indices (see e.g. Mansfield and Snyder, 1995; Londregan and Poole, 1996; Oneal and Russett, 1999). This procedure generates a yearly national index ranging between –10 (most autocratic regime) and +10 (most democratic regime). We aggregate these national indices across the North and across the South. Since these indices represent countries with different populations, in aggregating them we use a weighted average, where yearly weights are given by the ratio of national population to the total Northern and Southern population, respectively.

Conflict

Some analyses anticipate that bilateral trade will decline as conflict between trade partners increases (e.g. Pollins, 1989; Gowa, 1994; Reuveny, 2001). As tensions rise, importers may worry that they will not be able to obtain exports at all, or on a timely manner. They may also be concerned about payments. Traders

may worry that governments will restrict trade by imposing various sanctions on the activities of adversaries. Hence, Northern (Southern) conflict may diminish trading tendencies and thereby negatively influence Northern (Southern) trade openness. Zonal trade with the world, however, may not necessarily decline in the face of increased conflict. Other countries may enjoy more demand for their products as trade is diverted to them from hostile parties, or as demand for their products rises due to the war efforts of others. If the zonal trade is not greatly diminished, we may also see no general effect of conflict on the macro-zone's openness to trade.

Northern and Southern military conflict data come from the dyadic Militarized Interstate Dispute (MIDs) dataset, covering the years 1816 to 1992.¹⁴ It is possible to differentiate MIDs in terms of a verbal threat to use force, limited use of force, and war. But, it is not clear that a limited use of military force is necessarily more conflictual than a strong verbal threat to use force. Further, wars are relatively rare events. Consequently, as is done in other studies, we employ all MIDs in a year. We assume that years with more MIDs are more conflictual than other years. The occurrences of MIDs are aggregated for Northern conflict – conflict between a Northern country and any country in the system, Southern or Northern, and for Southern conflict – conflict between a Southern country and any country in the system. At each point in time, this sum is normalized by the number of dyads that can be formed in the international system.

Trade Openness Inertia

Movements in trade openness may be slow. Consider a rise in trade openness. In this case, tastes need to change, opposition to trade needs to be overcome, production needs to be reoriented, and so forth. Social structures affecting trade openness such as cultural differences among countries, or ownership of production factors also may change slowly. We therefore anticipate that trade openness will exhibit inertia. In empirical work, inertia is modeled customarily by incorporating the lag of the dependent variable as a control. This force is applicable in both North and South, but may be more pronounced in the South. The South generally only gradually attained independence from colonial powers, an initial prerequisite for re-orienting the local economy from metropole to the world.

Debt Default

When agents fail to service or pay back debts they are in default. Debt default can affect exports in two ways. In the short run, the defaulting unit may exhibit a decline in exports, particularly when imported production inputs are in short supply due to the crisis. As the crisis deepens, the economy, including the exporting center, may decline (Reuveny and Thompson, 2004b). In the longer run, however, it is possible that the crisis may raise openness as nations try to

obtain foreign currency from export in order to pay their debts. In addition, if the default is particularly damaging to the domestic economy. If GDP declines more than exports decline, openness, which is the ratio of export to GDP, may rise.

Annual Southern debt default data, based on Suter's (1992) series, come from Reuveny and Thompson (2004a). These data provide the number of countries in a state of debt-default (i.e. do not service their debt in terms of making interest payments or paying the principle due), or undergoing debt rescheduling (postponing payment deadlines and renegotiating terms and amounts). The debt-default series ends in 1985 and the rescheduling series begins in 1956. Between 1956 and 1985, Reuveny and Thompson average the two series and use this average as our measure. Hence, our dependent variable measures the aggregated level of Southern debt problems.¹⁵ The debt time series accounts for changes in the size of the international system by normalizing the number of Southern countries exhibiting debt problems by a count of the number of states in the system, in any given year.

Model

With all the variables in the model defined, we can now state the following model for each of our two units of analysis, North and South:

$$(1) \text{ EXPOPEN} = f(\text{SYSLEAD}, \text{WGROWTH}, \text{CONFLICT}, \text{DEMOCRACY}, \text{INERTIA}, \text{DEBTDEF}).$$

In this model, export openness of a region (EXPOPEN) depends on six variables: systemic leadership (SYSLEAD), World economic growth (WGROWTH), level of conflict that involves countries in the region (CONFLICT), level of democracy in the region (DEMOCRACY), export openness inertia (INERTIA) – a lagged value of EXPOPEN, and the level of debt default in the region – failure to service debt on time or pay due principle – (DEBTDEF). Given that debt defaults did not occur often in the North, DEBTDEF is only included in the Southern model.

4.2. Model Design Issues

Given our model, we need to consider several design issues. First, some of the right-hand side variables could be affected by export openness. A decline in openness could promote a debt crisis as foreign reserves are depleted. A rise in openness could promote democracy, as economic freedom can promote political freedom. To the extent that trade is an engine of growth, world economic growth could be affected. Trade could have a pacifying effect on conflict. On the other hand, leadership is not likely to be directly affected by export openness. In our leadership-long cycle perspective, systemic leadership is a function of the performance of the system leader in leading economic sectors.

In general, if a statistical model ignores reciprocal relationships between variables, the results will likely be biased. At the same time, fully accounting for all possible reciprocal effects can obviously turn into a monumental task. In addition, the size of the simultaneity bias in practice may be small. While most empirical studies, in fact, ignore reciprocal effects, some models deal with simultaneity by lagging the independent variables (e.g. Muller and Seligson, 1994; Oneal and Russett, 1999; Li and Reuveny, 2003). The rationale for this method is that the current value of a variable cannot affect the past value of another variable. We will use this method for world economic growth, democracy, conflict and debt default. For systemic leadership, we do not employ this method because our theoretical perspective does not attribute a causal factor to trade openness in bringing about leadership.

The effects of many socio-political-economic forces develop relatively slowly, or adjust dynamically (Greene, 1997). Dynamic adjustment is commonly modeled by employing lags of variables – distributed lags. This approach assumes that the past levels of the explanatory forces can affect the dependent variable. Our method of dealing with simultaneity employs the first lag of explanatory variables (except for leadership). This itself is dynamic adjustment with a lag length of one. In general, the adjustment lag lengths may be longer than one, and may vary across variables.

World economic growth and democracy may take more than one period to influence trade openness. Current values of leadership could affect openness, but current openness may also incorporate previous leadership effects. However, when all is said and done, our argument (similar to most dynamic interpretations in social science) does not specify the number of lags for the empirical analysis. ‘The appropriate length of lag is rarely, if ever, known, so one must undertake a specification search’ (Greene, 1997: 786). As is done in many studies, we chose the lag structure from a systematic search. Our search will provide many results, from which we chose the best specification in terms of goodness of fit, levels of significance, and signs of effects compared with theoretical expectations.¹⁶

Our primary empirical model will be the one specified for Northern openness. We expect weaker effects of our leadership long-cycle variables in the South, and perhaps no effect at all. Therefore, we will look for the lag structure found to fit the Northern model, and then employ the same specification as a baseline in testing whether our findings hold for Southern openness.

It is tempting to translate distributed lags into substantive terms. In distributed lag models, however, one looks for lags first as a check on causality – if x influences y , x should antecede y as a matter of data fitting. As noted, our theory does not tell us what sorts of lags to anticipate. Moreover, we rarely have enough observations to examine long lags of, say, generational length. Thus one should be reticent to attribute considerable significance to the lag length. The question is not so much whether we can isolate lagged effects precisely in terms of time

between impact and maximum effect. Rather, do we find significant relationships, and do the signs of the effects agree with the theoretical predictions?

When models include distributed lags, the interpretation of results can be complicated. The signs and significance levels of lags for the same variables may vary. As many studies do, we will report results from both individual coefficients and sums of lag coefficients for each variable (Greene, 1997). These sums have the same interpretation as individual coefficients, but give the overall effect of a shock with a duration of its lag length in a right hand side variable on the dependent variable.

In addition to our variables, a number of structural variables that could affect export openness (e.g. structure of contracts, institutional qualities, internal power distribution) are absent. Structural variables typically change slowly and their effects are manifested by export openness inertia, which, as noted, is typically modeled by including a lagged dependent variable. Hence, in addition to the theoretical notion of openness inertia, the lagged dependent variable captures effects of potentially missing structural variables. As noted by Burkhart and Lewis-Beck (1994) and others, this method makes it more difficult for spurious effects to be reported. It also makes it harder to find significant results (Li and Reuveny, 2003). Hence, our modeling approach can be said to be conservative.

Given the time series nature of our data, we need to consider the possibility of serial correlation. With serial correlation, estimated coefficients are not biased, but their standard errors are biased. The inclusion of the lagged dependent variable on the right-hand side is expected to alleviate problems associated with serial correlation (Beck and Katz, 1995). Nevertheless, we also will estimate robust standard errors, as suggested by Newey and West (1987). In concordance with Morrow et al. (1998) and Oneal and Russett (1999), we use a one-tailed *t*-test for coefficients whose sign is theoretically expected, and two-tailed *t*-tests otherwise. Hence, for world economic growth, leadership, inertia, democracy, and debt default we employ a one-tailed *t*-test, and for conflict we employ a two-tailed *t*-test.¹⁷

As will be shown in Figure 1, in our 1870–1992 sample, trade openness exhibited three sub-dynamics: 1870–early 1920s, early 1920s–1945, and 1945–92. After 1945, the leadership data are based on US values; before 1946, they are based on British values. Since our theory is expected to work in the long run, we use the full sample. But it is desirable to employ samples that combine US and Britain leadership data, as well as use portions of the sample for robustness checks. It is also clear that a sample that is too short will exhibit only part of the dynamics, leading to spurious results. These considerations suggest using three samples: 1870–1992, 1870–1945, and 1919–92.

Finally, Equation (1) assumes that trade openness processes can be profitably aggregated into Northern and Southern processes. The reader may recall that our theory predicts different behaviors for North and South. If we are correct, we would expect to see significant effects for the North, and much less so for

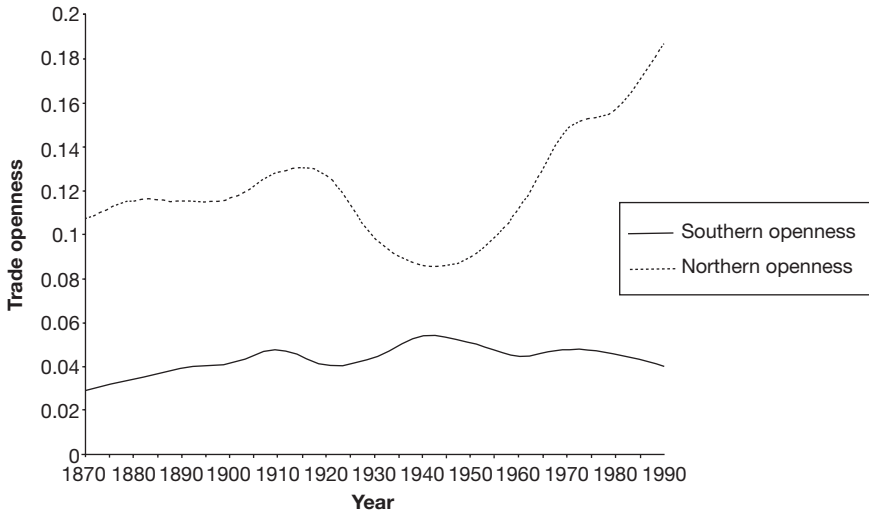
the South. But one may argue that changes in Northern national openness are brought about by unique national factors. We think this threat is unlikely to be so serious as to completely undermine our approach for the North. If Northern trade openness has the clear dynamic shown in Figure 1, then different countries in the region are probably reacting to common stimuli. For our purpose, it does not really matter if there are elements associated with some cases and not with others, as long as there are common factors across cases. The possibility that Northern openness is traced primarily to idiosyncratic national factors is relegated to the statistical error term in any case, and should work against us in the test. If this threat is large, our model should not find empirical support.

Southern openness is expected to be less responsive to leadership and world economic growth. Again, it is possible that some Southern countries will be positively affected by growth and leadership, absorb radical innovations emanating from the lead economy, break the shackles of underdevelopment, and forge ahead in export openness. This possibility certainly exists but it is not expected to be the general case. If most of the South does not adhere to this assumption, our findings should not support our expectations.

5. EMPIRICAL RESULTS

We first inspect plots of our variables. Since our raw data are noisy, they are difficult to read when plotted. To improve our ability to visually read them, we average the data over decades. Figure 1 presents a decadal look at Northern and Southern openness. From 1870 to the early 1920s, the two series did not change much. Since then, Northern openness declined up to the 1940s, and has risen since then. In the same period, the Southern series continued to hover around openness ratios of about four to five percent. It is also possible to discern long waves in the series. The first wave in Northern openness peaks in the 1880s, and the second, or an extension of the first, in the 1920s. A third wave rides a rising trend, beginning in the mid 1940s and peaking in the 1960s. The Southern openness waves are considerably less pronounced than the Northern openness waves. The first wave peaks in the 1910s, the second in the 1940s, and the third in the 1970s. The timing of the openness waves, particularly the Northern series, generally correspond to the long wave-chronology discussed in the leadership-long cycle studies, as shown in Figure 2.

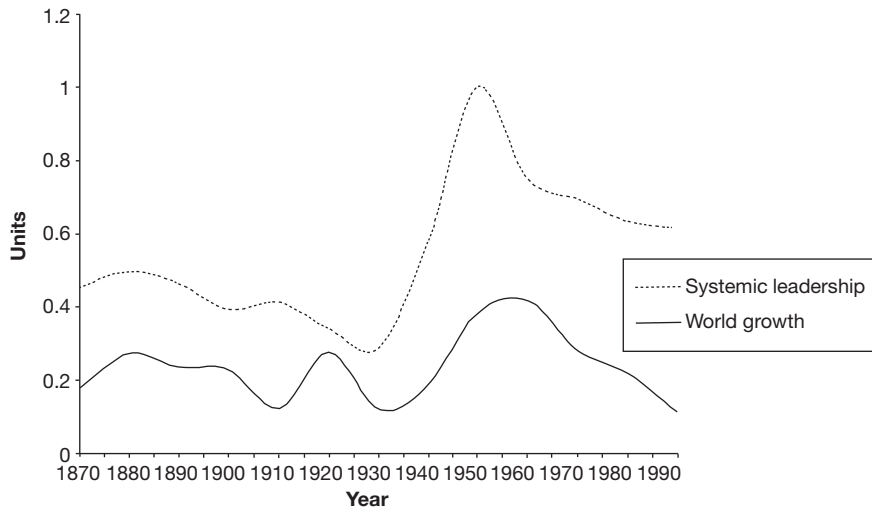
Figure 2 presents the decade averages for systemic leadership and world economic growth. Forty to 50-year 'long waves' are observable for world economic growth. World economic growth peaks are evident in the 1880s, 1920s, and 1960s.¹⁸ Systemic leadership peaks are evident in the 1880s and in the 1950s. The 1950s peak is expected by the leadership-long cycle perspective. The 1880s peak for the British leadership is not the largest one in the 19th century. A larger peak in the British leadership data occurred shortly after the Napoleonic Wars (Thompson, 1988), with a similar timing to the US

Figure 1 Decade average trade openness

case after the Second World War. Thanks to the victory in war, exhaustion of opponents, war-induced military edge, and the economic platform provided by the system's leading economy, systemic leadership is strongest immediately after the conclusion of the global war that essentially installs leaders in a trial by combat.

Figures 1 and 2 suggest that on average Northern openness increases when world economic growth and systemic leadership are high, and vice versa. On the other hand, the correspondence between the rise and fall in Southern openness and the two systemic variables is much less evident. In general, it seems that the ups and downs in leadership and world economic growth do not have much effect on Southern openness, which continues to hover around four and five percent throughout the sample. These observations generally support our theoretical interpretation, which expects two globalization dynamics, and still another North–South cleavage. Yet, these figures do not pinpoint how our variables relate to each other statistically. To discern these effects, we turn to the regression analyses. These analyses are conducted using the raw, original data (not the averaged data presented in Figures 1 and 2).

The grid search looking for the lag lengths that fit the data best suggests using the first and second lags for world economic growth, the current value for systemic leadership, and the first lag for Northern democracy and Northern conflict. Table 2 presents the estimation results for the North.¹⁹ Columns 1 and 2 present results for the full, 1870–1992 sample. The model's goodness of fit, based on the *R*-square measure, is 0.96, which is high. The effect of each of the five right-hand side variables, except Northern conflict, on the level of Northern openness is statistically significant. This result is consistent with the

Figure 2 Decade average leadership and growth

interpretation according to which intense conflict in the North, as witnessed in two world wars, tends to be offset by increased, war-related production by Maddison's 'western offshoots' that were distant from the combat zones. The effect of Northern openness inertia on Northern openness is positive; the effect of Northern democracy is positive, the effect of world economic growth is positive, and the effect of systemic leadership on Northern openness is positive. All of these results, including the one for Northern conflict, conform to our theoretical expectations.

In columns 3–6 of Table 2, we present estimation results from the 1870–1945 and 1919–92 periods, as called for in our research design. The *R*-square in the 1870–1945 period is 0.92, and in the 1919–92 period it is 0.96, both of which are high. The signs and significance of all the five variables in the two additional samples conform with the results in the full sample. The statistical results presented from the full sample then are robust.

Table 3 presents the estimation results for the South. Columns 1–2 again present results for the full, 1870–1992 sample. The model's goodness of fit, based on the *R*-square measure, is 0.82, which is also fairly high. The effects of Southern openness inertia and Southern debt defaults are statistically significant. The sign of the effect of Southern openness inertia on Southern openness is positive, as expected. The effect of Southern debt default on Southern openness is negative in the short run, and positive in the longer run, also as expected. None of the effects of the other variables in the model are statistically significant. In particular, Southern openness does not appear to be responding to changes in world economic growth and systemic leadership.

Table 2 Estimation results for the North

Variables	Coefficients 1870–1992	Sums of Coefficients	Coefficients 1870–1945	Sums of Coefficients	Coefficients 1919–92	Sums of Coefficients
Northern Openness _{t-1}	1.0081***		0.5089***		1.0164***	
Northern Democracy _{t-1}	0.0005*		0.0031***		0.0006**	
Northern Conflict _{t-1}	0.0095		0.0271**		0.0447	
World Economic Growth _{t-1}	0.0071	0.0355***	0.0005	0.0302*	-0.0069	0.0314**
World Economic Growth _{t-2}	0.0284**		0.0297*		0.0383**	
Systemic Leadership _t	0.0050***		0.0199***		0.0059**	

Note: *** denotes statistical significance at 1% level; ** at 5%; and * at 10%.

In columns 3–6 of Table 2, we report results for the 1870–1945 and 1919–92 periods. The *R*-square in the 1870–1945 period is 0.84, and in the 1919–1992 period it is 0.7, both of which are strong, albeit weaker than the corresponding results for the North. The signs and significance levels in the 1870–1945 sample are almost identical to those reported for the full sample. Unlike the full sample, however, the effect of world economic growth is significant, as in the North, suggesting that large changes in growth (see Figure 2) do affect Southern trade openness. The effect of debt default on Southern openness resembles the one in the full period, but it is not significant at conventional levels.²⁰

The results in the 1919–92 period resemble the results from the full sample, except that now the positive effect of systemic leadership is statistically significant, as in the North. This result suggests that large changes in leadership, which characterize this period, are able to affect Southern economic openness. In sum, as in the North, the results presented from the full sample for the South are robust. Yet we come away from the Southern analysis with the strong impression that systemic influences are less easy to generalize about than in the North.

Finally, another possible threat to the validity of our analysis is the design decision to focus on series that end in 1992. Is it possible that we are missing a Southern trade globalization explosion that is discernible empirically only after 1992? To check this possibility, we constructed shorter Southern and Northern, aggregated exports/GDP series for the 1983–2003 period.²¹ The outcome is shown in Figure 3. The Southern exports/GDP ratio is .058 in 1983 and remains more or less at the same level a decade later in 1992 (.059). By 2003, however,

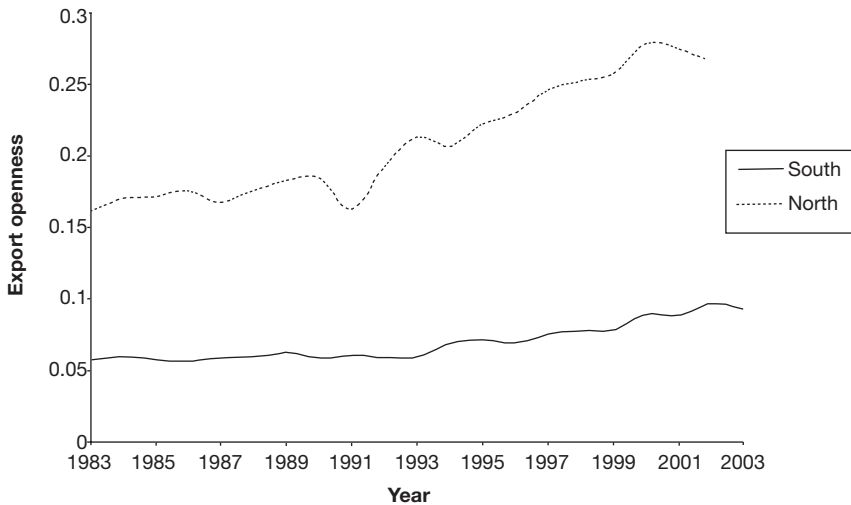
Table 3 Estimation results for the South

Variables	Coefficients 1870–1992	Sums of Coefficients	Coefficients 1870–1945	Sums of Coefficients	Coefficients 1919–92	Sums of Coefficients
Southern Openness _{t-1}	0.8397***		0.8239***		0.6729***	
Southern Democracy _{t-1}	0.00002		0.00002		-0.0004	
Southern Conflict _{t-1}	0.02936		0.0223		0.0443	
World Economic Growth _{t-1}	-0.0069	-0.0107	0.0143*	0.0253**	-0.0057	-0.0099
World Economic Growth _{t-2}	-0.0038		0.0011		-0.0042	
Systemic Leadershipt	0.0004		-0.0064		0.0052*	
Debt Default _{t-1}	-0.0057**	-0.0013	-0.0057	-0.0012	-0.0290**	0.0032
Debt Default _{t-2}	0.0044**		0.0045		0.0322**	

Note: *** denotes statistical significance at 1% level; ** at 5%; and * at 10%.

the trade openness ratio has increased to .094 – something on the order of a 62 percent increase between 1983 and 2003. Thus, it may seem that ending an analysis in 1992 biases the outcome somewhat by missing some significant post-1992 activity.²²

Lest we be too hasty to criticize our own research design, however, the Southern outcome needs to be compared to the Northern outcome. In 1983, the Northern aggregated ratio stood at .162. By 2002, the Northern exports/GDP ratio had expanded to .267. Thus, in terms of percentage increases, the Southern and Northern series increase roughly on the same order: 62 percent for the South and 65 percent for the North. But the gap between the Southern and Northern positions in 1983 is .104. By 2003, this gap had expanded to .173 – a roughly 66 percent increase in the size of the North–South trade globalization gap. So, it turns out that stopping our data analysis in 1992 is not as much of a threat to the validity of the analysis as it might otherwise appear. If our data series extended from 1870 into the early 2000s, as opposed to 1992, we probably would have found even stronger evidence for a widening North–South trade globalization gap.²³

Figure 3 Updating the globalization gap

6. CONCLUSION

This article studies a dimension of the extent of economic globalization in the global North and South over a long period of time. Economic globalization is measured here solely in terms of trade openness. Our leadership-long cycle theoretical perspective expects that world economic growth and systemic leadership will promote Northern economic openness but will have a much smaller effect on Southern export openness. Our empirical analysis, which employed a statistical modeling approach, supports our theory. Our results are found to be robust across sub periods in our sample.

Economic globalization is an old process of increasing pre-existing levels of integration between different units and zones of economic activity. Simply because we refer to it as *globalization* does not make it so. Or, alternatively, if we make globalization synonymous with increasing economic integration and interaction somewhere, we cannot assume that all actors are equally affected. We are not the first authors to suggest that contemporary globalization is an uneven process.²⁴ We may be the first to identify, theoretically and empirically, globalization drivers that appear to work more strongly in the North than they do in the South.

Because trade globalization works more strongly in the North than it does in the South, we should expect it to make the gap between North and South worse rather than better. A global North that is more integrated to the world economy should experience higher levels of economic development over time than a global South that is less integrated to the world economy. The gap between North and South standards of living, then, is expected to grow. North–South economic convergence, which is predicted by neoclassical economic growth theory, is not

expected to occur from our theoretical perspective any time soon, nor do our empirical results suggest that it occurs in the real world.^{2,5}

While there will always be a few national exceptions to these generalizations, it follows that one cannot rely exclusively on market processes to even out the economic growth playing field. That field is already highly stratified into zones in which the chances for growth and trade have been and continue to be, with some major exceptions, grossly unequal. Economic globalization does not appear to be breaking down these historical stratifications. Rather, it is economic globalization that tends to be channeled by these past grooves of strong and weak growth. The national units that are already integrated to the world economy become more integrated to the world economy; the less well-connected often stay that way. So far, only a very small number of states have managed to break out of the low-growth ruts of the world system. The implications of this grim outcome for world political stability are stark. To the extent that poverty and underdevelopment facilitate continuing conflict between North and South, we may expect to see more of these phenomena in the future, not less. To be sure, substantial quality of life improvements that are not captured by our focus on export openness have been registered in the South. But, we ask whether these improvements should be expected to compensate for relatively slower improvements in many Southern economies? Or, is it possible that more mouths to feed and people to employ without widely distributed economic growth may contribute even more to future instability?

NOTES

- 1 Given its scope, we cannot review fully the leadership-long cycle literature. For expositions (without attention to Northern and Southern globalization) see Modelski and Thompson (1996) and Thompson (2000).
- 2 See for example Modelski (1987, 1996), Modelski and Thompson (1988, 1996), Thompson (1988, 2000), Rasler and Thompson (1994), and Reuveny and Thompson (1999, 2000, 2001, 2004b).
- 3 Examples of these radical innovations include mechanized textile looms, steam engines, electrification, automobiles, jet engines, and computers.
- 4 On North–South military conflict, see Reuveny and Thompson (2002). On North–South income inequality, see Reuveny and Thompson (2003), and on Southern debt crisis and default, see Reuveny and Thompson (2004a).
- 5 The major exception to the stickiness of the regional hierarchy is the heterogeneous Asian region.
- 6 We include Middle Eastern oil producers and South American states in the South. While some of these states qualify in recent years as Northern in terms of our indicator, they lag in ability to absorb innovation. Some countries have capitalized on oil production. A few South American states are not pure raw material providers, but are still grappling with absorbing earlier innovations, while the North is now mastering information technology.
- 7 A dependence on the standardized GDP data provided by Maddison (1995) precludes more extensive LDC coverage for series going back to 1870.

- 8 Note that our evaluation does not hinge on economies qualifying in specific years but whether they move from one category to another roughly (as in the Soviet Union moving into the North between the two world wars or Taiwan and South Korea doing so in the late 1970s or early 1980s) about when one might expect some change in status.
- 9 Another early approach that had to be abandoned was to take the globalization series developed by Chase-Dunn et al. (2000) and decompose it into Northern and Southern information. Unfortunately, we found that this measure is highly dependent on largely Northern data well into the 20th century and, therefore, could not serve our present purposes. Nonetheless, we are indebted to Christopher Chase-Dunn for the opportunity of examining the raw data used to construct that series.
- 10 Obviously, the interpolation for the missing war years would be less desirable if one of our primary questions was the impacts of the First and Second World Wars on exports. However, this is not one of our principal questions in this analysis.
- 11 The countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, UK and US. Japan's data begin in 1885, and Switzerland's data in 1899.
- 12 See for example Modelski and Thompson (1988), Thompson (1988), Boswell and Sweat (1991), McKeown (1991), Rasler and Thompson (1994), Reuveny and Thompson (1999, 2004a, 2004b).
- 13 Historically, system leaders have not excelled in developing armies. The current system leader is proving to be an exception to this generalization.
- 14 The MID data (version 2.1) are taken from Zeev Maoz [<http://www.spirit.tau.ac.il/~zeevmaoz>].
- 15 Whether a country defaulted or was allowed to reschedule its debt is not relevant for our purpose, as we control for debt problems, and not for their type.
- 16 Many studies employ this approach, including Stern et al. (1976), Geraci and Preow (1982), Campbell and Mankiw (1987), Rasler and Thompson (1994), Reuveny (2001), and Reuveny and Thompson (1999, 2001, 2002, 2004a, 2004b).
- 17 Significance levels of one, five, and ten percent are used.
- 18 We view the 1880s and 1920s as parts of the same long wave that is disrupted by the First World War.
- 19 We used the statistical package *Regression Analysis Time of Time Series* (RATS) (Doan, 2000). We guard against the possibility of serial correlation by estimating the model from the method of Newey and West (1987), which generates robust standard errors.
- 20 The difference in the result for debt seems to reflect both the large changes of world economic growth, which leave less of the small variance in Southern openness to be explained by the debt variable, and the smaller sample.
- 21 The data come from a World Bank source at: [<http://devdata.worldbank.org/dataonline>]. We used exports of goods and services and GDP enumerated in constant 1995 US dollars. We were able to obtain data for very similar samples to those constructed using Maddison's data. The Southern group encompasses Argentina, Bangladesh, Bolivia, Brazil, Bulgaria, Chile, China, Colombia, Congo/Zaire, Cote d'Ivoire, Egypt, Ethiopia, India, Indonesia, Kenya, Mexico, Morocco, Nigeria, Pakistan, Peru, Romania, Tanzania, Thailand, Turkey, and Venezuela. The Northern group includes Austria, Australia, Belgium, Canada, Czechoslovakia/Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, South

- Korea, the Netherlands, New Zealand, Norway, Poland, Portugal, Russia, Spain, Sweden, Switzerland, the United Kingdom, and the United States.
- 22 Some of this change definitely can be attributed to China. Removing China from the Southern group reduces the 1983 ratio from .058 to .055. The 2003 ratio would be reduced from .094 to .089. Still, the changes are not exactly overwhelming.
 - 23 A related validity threat potentially emanates from our approach to categorizing North and South. We allow Southern and Northern actors to move from one category to the other while some analysts would prefer that we define the South in fixed 1870 terms. While we do not find this latter approach very appealing, we (Reuveny and Thompson, 2003) have examined North–South gap data utilizing it without finding substantively different results from an analysis using our ‘flexible’ North–South approach. What may be most important about our North–South categorization approach is that it would be highly vulnerable to misinterpretation if there was a fair amount of movement between the two categories. This has not been the case historically. With the exception of Russia (after 1992), no Northern state has moved into the South and few Southern states have moved into the North. Within our sample, only Japan, Taiwan, and South Korea have made the transition in the many states outside of Europe and the western offshoots. Perhaps equally telling is that the size of the South measured in terms of population has expanded greatly in absolute terms but has stayed about the same proportionally. In 1870, our Southern sample had a population of about 712 million people (or 76.1% of the total). In 2000, the Southern sample encompassed 3961 million people (or 75.6% of the total). It seems safe to conclude that we are not artificially shrinking the South to obtain desired results. Over the last 130 years, it continues to capture some three-fourths of the world’s population.
 - 24 See among others, Hirst and Thompson (1999).
 - 25 This statement does not say that standards of living in the South have not improved. Clearly, they have but so have Northern standards of living. Our point is that the difference between Northern and Southern standards of living is not necessarily improving. Alternatively put, Northern standards of living are improving faster than are Southern standards of living.

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Rafael Reuveny is Associate Professor of Political Economy at the School of Public and Environmental Affairs at Indiana University. His research focuses on the rise and fall of great powers, causes and effects of economic globalization, causes and effect of violent conflict, sustainable development, and the Israeli-Palestinian conflict. His work appeared or is forthcoming in many academic journals, including *American Journal of Political Science*, *Journal of Politics*, *International Organization*, *Political Geography*, *Review of International Political Economy*, *International Studies Quarterly*, and *Ecological Economics*. His book on the leadership long cycle perspective, co-authored with William Thompson, was published by the University of Michigan Press in 2004. His volume on trade and the environment, co-edited with John Maxwell, was published by Edward Elgar in 2005. Address: School of Public and Environmental Affairs, Indiana University, Bloomington, IN 47405, USA. [email: rreuveny@indiana.edu]

William R. Thompson is Rogers Professor of Political Science at Indiana University. Most recently, he has co-authored *Puzzles of the Democratic Peace: Theory, Geopolitics and the Transformation of World Politics* (2005) and co-editor of *Globalization and Global History* (2006). Address: Department of Political Science, 210 Woodburn, Indiana University, Bloomington, IN 47405, USA.