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Indicators of Economic Integration

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Economic globalization—the processes leading to integration of final products, intermediate goods, and factor markets across countries coupled with the increased salience of cross-border value chains in international economic flows[1]—has generated much debate on its causes, extent, and implications for public policy and business strategy. One relatively underexplored subject is assessing levels of economic integration at the country level. This requires developing indicators of integration, and this essay is a modest contribution in this direction. Such indicators have important implications for public policy. Before attempting to confront opportunities and challenges posed by globalization, policymakers must first know its extent. They often employ measures of cross-country trade and investment flows for this task. Such measures are not incorrect; they are incomplete. In this article, we therefore attempt to systematically address issues in developing indicators of country-level economic integration.

Developing indicators involves confronting political issues. What we choose to measure (if it can be measured at all) and how we measure it is not value-neutral—the politics of identifying indicators is important. By focusing on specific dimensions of economic activity, indicators significantly influence policy debates.

Our objectives in this article are twofold. First, we discuss the two approaches used to assess levels of economic integration. Embedded in these approaches are specific indicators. Second, we investigate the policy implications of employing these indicators, which illuminate the domestic political economy of integration by examining how various interest groups representing firms and factors of production are impacted by it.

The first approach examines levels of institutional convergence or harmonization across countries. The underlying argument is that countries can potentially integrate if minimal institutional obstacles to cross-border economic flows are present. These impediments manifest in various forms: import and export tariffs, nontariff barriers, capital controls, barriers to foreign direct investment (FDI), technology transfer, and real estate transactions. If such obstacles are removed, countries move toward some sort of potential economic integration. Removing or diluting institutional obstacles therefore becomes a necessary condition for economic integration.

These obstacles can be removed unilaterally, bilaterally, minilaterally, and multilaterally. New supranational organizations could also be created (or existing ones empowered) to oversee such agreements. The General Agreement on Tariffs and Trade (GATT), the Maastricht Treaty, and the North American Free Trade Agreement (NAFTA) are examples of institutional integration through removal of obstacles and, in some cases, creation of new supranational organizations.

The second approach focuses on the outcomes of integration instead of on the institutions facilitating or impeding cross-border economic flows. The most popular outcome-based indicator is the ratio of foreign trade to gross domestic product (GDP). Another widely used indicator is the ratio of FDI inflows to GDP, which has gained prominence in recent times because FDI has been growing more rapidly than trade as a mode of cross-border economic activity (discussed later).

Because trade and FDI are the two main vehicles for firms to access foreign resources and markets, scholars suggest combining trade-based and FDI-based indicators to measure integration.[2] Although a combined ratio may better represent the extent of economic integration than either trade- or FDI-based indicators separately, it does not adequately reflect integration of factors of production—the microfoundations of economic activity. We therefore suggest adding factor-based indicators to the list of principal indicators. Our contention is that to assess levels of cross-border economic integration and to explore their policy implications, a simultaneous focus on macrolevel flows (goods, services, and investments) and their microfoundations (factors-of-production flows) is required.

Multiple indicators could be difficult to interpret. The greater complexity of multi-indicator approaches to measurement may obscure rather than clarify the big picture. We do not rule out the possibility that a composite index could be developed that reflects the contribution of both macro- and factor flows to the integration of markets. Although we do not develop such an index in this article, we discuss issues involved in its construction.

This article has four sections. In the first section, we discuss institution-based indicators. We examine trade, FDI, and trade-cum-FDI indicators in the next section. In the third, we suggest indicators to assess integration of factors of production. Finally, we present the conclusions of and discuss challenges in developing a composite index.

Institution-Based Indicators

Before developing indicators of economic integration, the units of analyses need to be specified. Economic integration could be conceptualized at various levels: firm, sector, country, region, or systemic. The appropriateness of the unit of analysis depends on the nature of the research question.

It could be argued that for business strategy scholars, focusing at the firm level or the sectoral level is most useful. Similarly, for public policy scholars, country, regional, or systemic levels are more appropriate.[3] Since we examine public policy aspects of integration, we focus on the country level. This discussion could also be extended to include regional and systemic levels.

Economic integration is a two-stage process. First, it involves the removal or dilution of institutional impediments, thereby creating incentives for increased cross-border flows of goods, services, investments, and factors of production. Second, it requires that actors take advantage of such opportunities to expand cross-border economic transactions. In examining the first stage, we are confronted with broader questions such as, why do institutions change? How does change take place? Specifically, what factors (or independent variables) create incentives for actors to change institutions? Some of these factors might be the revolution in computing and telecommunications, which reduces transaction costs of managing far-flung activities; increases in research and product development expenditures, necessitating that firms look beyond national markets; growth in economies of scale and scope that make it possible to service larger markets at lower costs; decreases in transportation costs; interstate rivalries to attract FDI, resulting in competitive deregulation of key sectors; and ideological convergence in favor of democratic and market-based economies with the end of the Cold War.

In this essay, we do not discuss how independent variables create incentives for actors (such as firms, industry associations, labor unions, and environmental groups) to favor institutions that facilitate cross-border integration.[4] We focus on developing indicators of country-level economic integration. To assess levels of such integration, we begin by examining the extent to which institutional infrastructure supports cross-border economic activity. Institutions, whether supplied by governments or nongovernmental bodies, influence behaviors by altering the incentives—monetary or nonmonetary—facing actors. Note that institutions alter only the "supply" of incentives; actors assess their worth and respond to them. Governments may enact laws that create incentives for multinational enterprises (MNEs) to invest in their territories. The attractiveness of incentives may differ across MNEs: governments may feel they have "liberal" FDI institutions, but MNEs may not find these institutions attractive enough.[5]

The attractiveness (relative price) of an institution for MNEs depends on how it fares in relation to similar institutions in other countries. The impact of an institution on cross-border economic activity therefore hinges in part on factors exogenous to a given government. On this count, multilateral agreements help in harmonizing attributes of institutions supplied by various governments. These agreements also mitigate the alleged incentives for MNEs to undertake regulation arbitrage (shopping around for the

least restrictive laws) and for governments to engage in beggar-thy-neighbor or race-to-the-bottom policies (competitive dilution of laws to attract FDI).[6]

An examination of institutional infrastructure could focus on single or multiple institutions that impact cross-border economic activity. Institutions that hinder FDI flows include restrictions on foreign ownership, domestic content requirements, and domestic sales. In addition, some institutions may pose idiosyncratic impediments. For example, the Exon-Florio provision of the 1988 Trade and Competitiveness Act grants authority to the U.S. president to block the takeover of U.S. firms by foreign firms on grounds of national security.[7] What constitutes "national security" is debatable, and such institutions, although not used by any president to date, create psychological impediments to FDI flows. Similarly, the Helms-Burton Act, which penalizes firms investing in Cuba, is another instance in which domestic political considerations create institutional barriers to FDI flows.

To assess institutional integration as reflected in the dilution or removal of impediments to FDI flows, we can examine trends in FDI liberalization. For example, during 1991, 32 countries introduced changes in 82 FDI institutions (some countries in multiple institutions). Of these, 80 institutions were liberalized, and 2 were made more restrictive. During 1997, however, 76 countries modified 151 FDI institutions. Of these, 134 institutions were liberalized, and 17 were made more restrictive.[8] Clearly, country-level trends suggest liberalization of FDI institutions, thereby increasing opportunities for at least one aspect of economic integration.[9]

Similarly, consider trends in the emergence of bilateral institutions for protection and promotion of FDI. By the end of 1996, there were 1,330 such treaties involving 81 dyads (country pairs). This is striking, given that there were fewer than 400 such institutions at the beginning of the 1990s. Again, trends suggest that countries are creating institutional infrastructures to attract FDI flows.[10]

In addition to focusing on a single flow such as FDI, we can examine institutions that impact multiple flows or dimensions of economic activity. We discuss two such measures: readiness indicators[11] and stages-of-integration scale.[12]

Readiness indicators describe a country's institutional preparedness to proceed toward cross-border integration, both by increasing economic flows and creating new institutions to facilitate such flows. Although these indicators were developed in the context of Latin America, they could be constructed for other countries or regions as well. Seven indicators have been identified that reflect the economic and political preparedness of a country for a given time period: price stability, budget discipline, external debt, currency stability, market-oriented policies, reliance on trade taxes, and functioning democracy.

A country is given scores from zero to five on each of the seven indicators, then the average of the seven scores is taken. A score of five implies

that a country is totally ready for economic integration. The assignment of scores on individual dimensions has elements of both subjectivity and objectivity. For example, for price stability a country is given a score of five only if it has maintained an average annual inflation rate of less than 5 percent during the evaluation period. It gets a score of four if the average inflation rate was 5 to 20 percent and a score of three if average inflation rate was 20 to 50 percent. If the average inflation rate was 50 to 100 percent, it gets a score of two, and it gets a score of one if average inflation was greater than 100 percent. This measure is fairly objective, because quantitative evidence is available on inflation rates. Constructing the cardinal scale does require subjective judgments, however. Why should the cutoff for a score of five on price stability be an average inflation rate of less than 5 percent; why not less than 3 or less than 7 percent? The scale for measuring democracy is more subjective. It draws on data supplied by Freedom House reflecting two factors: majority rule and minority rights. An assessment of the latter in particular can be highly subjective.

Readiness indicators describe domestic preparedness to engage in cross-border economic activity. They do not, however, conceptually or empirically link this internal readiness to various levels of cross-border institutional integration. For this, a second measure that ranks those levels of integration is required. Stages of country-level integration correspond to an ordinal scale: free trade area, customs union, common market, economic union, and total economic integration. In the minimal form—free trade area—integrated countries abolish import tariffs, thereby removing key institutional impediments to trade. In a customs union, integrated countries also adopt a common external tariff for imports from nonintegrated countries. Again, the focus remains on removing impediments to trade flows, now with nonintegrated countries. In a common market, in addition a free flow of factors of production occurs among integrated countries. Thus, in addition to trade flows, investment and factor flows face few institutional impediments. In an economic union, integrated countries also adopt common economic policies, typically common monetary and fiscal policies. In total economic integration, integrated countries seek to function in the economic realm as de facto supracountries. Thus, as we move up the ordinal scale of macro integration, from free trade area to total economic integration, the institutional capacity of a group of countries to support economic integration increases.

Institutional indicators reflect the potential ease with which the processes of integration can function, but they do not inform us on whether or how economic actors actually take advantage of opportunities created by institutional integration. For this, we need to employ outcome-based indicators that reflect increased levels of cross-border flows. Critically, opportunities created by institutional integration can be significantly exploited only if economic actors are not structurally disadvantaged. Structural

factors, such as the level of economic development, the composition of foreign trade, and political and economic risks, often impede economic integration. Some structural obstacles can be overcome by appropriate institutional responses; for example, the euro is expected to reduce currency risk for investors. Nevertheless, some structural impediments, especially those faced by developing countries, are often hard to overcome in the short run.[13]

Structural constraints on states in their pursuit of economic objectives have also been highlighted in the interdependence research program.[14] In this context, it is useful to distinguish economic integration spearheaded by globalization from the "complex interdependence" Robert Keohane and Joseph Nye described.[15] The complex interdependence notion challenged the assumptions of neorealism, highlighting the complex and reciprocal nature of linkages (in terms of sensitivity and vulnerability) among countries. The interdependence research program, however, continued to operate within the broad Westphalia paradigm with states as the main actors. On the other hand, globalization-led economic integration focuses on the key role of MNEs in allocating resources across their cross-border value chains. Although states continue to remain important in many ways, economic globalization forces a reassessment of the notion of territoriality on which the Westphalian system is predicated.

Outcome-Based Indicators

One of the most popular indicators of macroeconomic integration is the ratio of foreign trade to GDP (also called the trade ratio). Foreign trade is generally defined as the sum of the value of exports and imports. The trade ratio may be employed to reflect levels of integration between two countries, among a group of countries, or between a country or region and the global economy.

A sole focus on the trade ratio is useful as long as foreign trade is the predominant vehicle for firms to access foreign markets. Especially since the 1980s, FDI has emerged as a key vehicle for these tasks. FDI is a long-term commitment giving investors ownership or control over real assets in host countries. It is measured in terms of equity and debt held by parent firms in their foreign affiliates, including retained earnings of affiliates. Definitions of what constitutes "control" are inconsistent. The UN Conference on Trade and Development (UNCTAD) and the International Monetary Fund (IMF) assume that 10 percent of equity ownership by the parent MNE suffices for control; the Organization for Economic Cooperation and Development (OECD) requires at least 20 percent equity ownership before it attributes any control to the parent firm. Further, some countries do not include retained earnings of foreign affiliates in their reporting of FDI flows.

In 1997, FDI inflows and outflows reached U.S.$400 billion and $420 billion, respectively, and the outward FDI stock reached $3.5 trillion (up from $1 trillion in 1987).[16] By 1997, there were 53,000 parent firms with 448,000 foreign affiliates around the world. The increasing level of FDI flows is leading to greater international market integration as indicated in the rising levels of intrafirm trade, which has replaced arm's-length transactions as the dominant mode of cross-border trading activity ($5.3 trillion versus $4.8 trillion in 1993). Further, to service foreign markets, MNEs now use FDI over exports by a factor of 1.5 ($9.5 trillion versus $6.4 trillion in 1997).[17]

To assess the impact of FDI flows on economic integration, we suggest two indicators. The first is the ratio of FDI inflows to gross fixed capital formation (GFCF), which indicates the extent to which foreign investment finances and controls additions to domestic productive capacity. For example, in 1995, this ratio was 5.4 percent for Africa, 5.5 percent for Asia, 5.9 percent for Western Europe, and 20.0 percent for China.[18] Although Africa received low absolute levels of FDI inflows compared with Asia ($5 billion versus $81 billion), the flows financed and controlled comparable levels of domestic fixed capital formation.

Another measure is the ratio of the FDI stock to the GDP of the host country. Because annual FDI flows fluctuate considerably, the proposed measure better reflects the cumulative capital commitments of MNEs in relation to the economic capacity of the host country.

FDI flows understate investments of foreign affiliates. For example, in 1994, parent MNEs financed only about one-third of the total investments of their foreign affiliates. The remaining two-thirds was financed by raising capital in foreign equity markets and by securing loans from financial institutions in host or third countries.[19] FDI flows also bring new technologies and management practices, which encourage inflows of portfolio capital to host countries. Importantly, FDI links host economies to global value chains of investing MNEs. Consequently, as discussed previously, FDI favorably impacts foreign trade by generating intrafirm trade between the parent and affiliates and among affiliates. Importantly, MNEs contribute significantly to arm's-length transactions (nonintrafirm trade) as well. FDI flows therefore help to integrate economies in a variety of ways. The trade ratio and the FDI/GDP ratio tell only part of a more complex story.

The surging levels of FDI-led integration have significant policy implications. Governments should carefully consider the net benefits of economic integration that leads to FDI outflows. First, what is the relationship between FDI outflows and exports: Are they substitutes for or complements to one another? If FDI is export replacing, it adversely impacts the domestic economy by generating losses in export revenues and export-related jobs.[20] If FDI is export creating, it will lead to higher export revenues and more export-related jobs in the domestic economy.[21] The jury is still out on this matter. We hypothesize that FDI replaces exports in

the short run and facilitates exports in the long run.[22] Domestic opposition to FDI stems from the fact that job losses occur in the short term and are concentrated among people and firms, whereas job gains occur in the long term and are diffused. Consequently, it is easier to organize "losers" to protest against FDI outflows.

Second, do FDI outflows deprive home countries of valuable capital, thereby creating or accentuating gaps in savings and investment? If so, outward FDI can be seen as generating increases in national indebtedness. Again, it is possible that the impact of FDI outflows is negative in the short run but positive in the long run.

Third, do FDI flows reframe the domestic political economy by empowering (mobile) capital in relation to (immobile) labor? If so, we could expect labor to demand restrictions on FDI outflows. The recent spate of strikes in France against so-called Anglo-Saxon capitalism (which allegedly privileges capital over labor) and the refusal of the U.S. Congress to grant fast-track authority to President Clinton in spite of a historical low unemployment level are symptomatic of a larger trend. Specifically, the losers from integration (particularly organized labor) are fighting back in the political arena. This underlines the need for a new social compact among losers and MNEs (capital). One proposal is to create new institutions that enforce labor and environmental standards in developing countries to prevent the alleged "race to the bottom" in those two areas.[23] This would create a level playing field, mitigate incentives for MNEs to invest abroad, and mollify labor at home. Such level playing fields, however, may rob developing countries of their comparative advantages, thereby denying them opportunities to gain from international trade.[24]

Fourth, are FDI flows creating a new division of labor between the industrialized core and the periphery (developing countries)? If so, FDI-led integration may be a harbinger of a new form of imperialism that maintains or accentuates existing inequalities across countries and hence may be opposed in both host and home countries. Alternatively, FDI flows, especially at regional levels, may reflect "flying-geese" patterns of industrialization in which economies at the lower ends of the value chain could be expected to move gradually up the chain.[25]

FDI and trade are two prominent vehicles employed by MNEs to gain access to foreign markets and resources. MNEs often want access to their competitors' home markets to ensure that competitors do not take advantage of restricted access to those markets to subsidize their export efforts through monopoly or oligopoly pricing. U.S. and European MNEs have alleged the adoption of such practices by their Japanese competitors and, more recently, by South Korean MNEs as well. The recent skirmish between the U.S. government (acting on behalf of Kodak) and the Japanese government (acting in defense of Fuji Film) is another example of this tension. Thus, surging levels of FDI flows are both a cause and a consequence

of demands for a more level playing field in international economic competition.

Given the possibility of close linkages between foreign trade and FDI, scholars suggest that a trade-cum-FDI measure is required to assess the degree of economic integration. DeAnne Julius advocates employing such an indicator because traditional balance-of-payment measures inadequately reflect the competitiveness of countries in global markets.[26] She notes that measures of economic linkages between countries should include both ways of reaching foreign markets: through exports and through local sales of subsidiaries.[27] Her proposed indicator is:

Net exports (traditional measure)
plus sales in foreign countries attributable to subsidiaries of domestic MNEs,
minus domestic sales attributable to subsidiaries of foreign MNEs,
minus intrafirm trade.

Based on this measure, Julius reports that in 1986, total U.S. foreign sales (net exports plus FDI-related sales in foreign markets) amounted to $56.7 billion, as opposed to a trade deficit (traditional measure) of $144.4 billion. Clearly, U.S.-based firms are increasingly relying on FDI to access foreign markets, a phenomenon not adequately captured by traditional trade-based measures. Julius concludes that the U.S. economy is, in fact, competitive in global markets.

As suggested previously, what we choose to measure and how we do it influences policy debates. The trade balance (exports minus imports) is part of a country's balance of payments. A persistent trade deficit on the current account (such as the one the United States has experienced since the late 1970s) provides an opportunity for trade bashers to focus on the costs of economic integration. Trade deficits are linked to the loss of jobs so that the blame for high unemployment can be put on international competitors, especially those believed to have unfair advantages such as lax labor and environmental laws. Not surprisingly, there are demands to either raise new trade restrictions or undertake unilateral market-opening initiatives such as those associated with the Super 301 provisions of the U.S. Trade Act.

FDI-based measures also provide potential ammunition for economic nationalists in their domestic political struggles. We have previously mentioned that FDI outflows are sometimes perceived to accentuate international gaps in savings and investments. For example, the rapid growth of Japanese foreign investments in the mid-1980s (incorrectly) led to exaggerated fears of a Japanese takeover of the U.S. economy through the acquisition of U.S. assets.[28] In addition, economic nationalists question whether MNEs are loyal citizens of any country, an issue Robert Reich addressed in a provocative article entitled "Who Is Us?"[29]

A sole focus on FDI flows provides a distorted picture of cross-border integration since flows are concentrated among the developed countries of the triad (with the notable recent exception of the People's Republic of China): for 1997, these countries accounted for 58.2 percent of FDI inflows and 84.8 percent of FDI outflows.[30] Trade-cum-FDI indicators also inadequately reflect global economic integration because firms increasingly organize international value chains through strategic alliances, turnkey agreements, franchising, and management contracts. A more serious conceptual problem is that a sole focus on trade, FDI, or both neglects the microfoundations of economic integration. We contend that to measure economic integration and to understand its policy implications, a focus on both trade and investment flows and flows of factors of production is required. We turn to this subject in the next section.

Factor-Based Measures of Integration

Increasing levels of economic integration have distributional consequences, as they bestow gains and impose costs asymmetrically across domestic actors. This creates incentive for losers as well as winners to influence the policymaking processes.[31] The domestic political economy therefore becomes a critical variable in influencing the pace and extent of institutional development for cross-border integration.

At a conceptual level, an economy is integrated if its sectors and firms are integrated. Extending this argument further, if firms are coalitions of factors of production,[32] integration should be observable at the factor level: at the level of land, labor, capital, entrepreneurship, and technology or intellectual property. This focus will also help us to better understand the domestic political economy of integration because various factors of production are perhaps differentially impacted by that economy. Of course, the impact of factor-based interest groups on policy processes depends on levels of per capita benefits, the excludability of such benefits, and the cost of organizing collective action. Nevertheless, as a starting point, it is instructive to examine the impact of cross-border integration on factors of production. We present indicators of factor-level integration here.

Labor

Labor is one of the least integrated factors because cross-border labor flows are often restricted. The modern state system resulting from the Treaty of Westphalia in 1648 is predicated on the territorial allegiance of its citizens, and restrictions on cross-border flows are one of the many instruments for encouraging such allegiance.

Notwithstanding such restrictions, cross-border labor mobility is a fact of life. In-migration is concentrated in few regions of the world. Of the estimated 80 million international migrants, 35 million are in sub-Saharan Africa, 15 million in the Middle East and Asia, and 13 to 15 million in Europe and North America.[33] Thus, one measure of integration of labor markets is the proportion of foreigners in the domestic workforce.

Labor flows also integrate economies through remittances that contribute to a home country's GNP and provide it with valuable foreign exchange. Thus, another indicator of labor integration is the remittances-to-gross domestic product (GDP) ratio. This ratio for Portugal was as high as 12 percent in 1980, declining to 8.3 percent in 1989. Surprisingly, for Mexico the ratio was as low as 0.2 percent in 1980, rising to 1.1 percent in 1989.[34]

Yet another indicator of labor integration is the proportion of the domestic workforce in export-dependent industries and employed by domestic affiliates of foreign MNEs. This proportion indicates the extent to which the domestic labor market is influenced by decisions ostensibly made abroad, by either foreign firms or foreign consumers. For example, the degree of global integration of the U.S. labor market (based on 1992 employment by U.S. affiliates of foreign MNEs alone) varied across sectors, from 32.0 percent in the chemical industry to 1.5 percent in the construction industry. At an aggregate level, 5.1 percent of industrial employment and 11.6 percent of manufacturing-based employment in the United States was accounted for by domestic affiliates of foreign MNEs.[35]

What are the policy implications of labor market integration? For one, it creates pressure for wage-rate equalization across economies and hence puts downward pressure on wages in industrialized countries. Not surprisingly, labor groups often oppose liberal immigration policies. Firms dependent on migrant labor, however, are often vocal supporters of liberal immigration policies. Interestingly, some industries that rely on low-skilled immigrants (such as strawberry pickers in California) as well as highly skilled immigrants (such as computer programmers) may band togther to lobby for increased levels of immigration. The domestic political economy of labor market integration is therefore highly contested because both losers and winners are often highly organized. Further, the costs and benefits of lobbying are significant and highly focused within the group.

Capital

Capital is perhaps the most integrated factor of production. Short-term financial flows (including currency transactions) are two or three orders of magnitude larger than trade and investment flows. This suggests that

financial markets are no longer mere passive reflections of commercial activities in markets for real goods and services. As the recent crisis in Southeast Asia demonstrates, financial flows can significantly impact the "real" economy.

Long-term financial flows are of three main kinds: FDI, portfolio capital, and loan capital. To assess levels of financial integration accurately, these three types of financial flows should be tracked separately. As discussed previously, FDI is the sum of debt and equity held by parent firms in their foreign affiliates together with the retained earnings of affiliates. International portfolio investment refers to country funds, depository receipts, and direct purchases of common stocks in foreign markets (as long as they are below 10 percent of total shares). External borrowing includes bank loans, bonds, certificates of deposit, commercial paper, trade financing, leasing facilities, and private placements.

To assess levels of capital integration, we suggest two indicators. The first is the ratio of individual flows to gross fixed capital formation. Consider, for example, the ratio of net FDI inflows (inflows minus outflows) to GFCF. The annual average for Germany for the period 1985–1990 was negative 8.8 percent, for Switzerland negative 12.9 percent, and for the United States negative 1.6 percent. For Singapore, however, it was 33.6 percent, for Ireland 16.3 percent, for China 12.7 percent, and for New Zealand 12.6 percent. Clearly, the contribution of FDI inflows to creating domestic productive capacity varied greatly even among developed countries.[36]

Second, we should track stocks of foreign capital as a proportion of GDP because stocks (as opposed to flows) indicate the cumulative contributions of foreign investment to creating domestic productive capacity. Again, let us consider the ratio of FDI (inflows) stocks to GDP. This shows great variation: for 1990, the ratio was as high as 43.9 percent for New Zealand and as low as 0.3 percent for Japan. For the United States, it was 0.3 percent, and for China the ratio was 18.2 percent.[37]

Portfolio capital flows impact the domestic political economy differently than FDI because they are less territorially bound and can move across countries quickly and with low transaction costs. As a result, portfolio fund managers can significantly impact domestic economic policies. For example, an indicator of the health of the domestic economy and its investment climate is the stock market index. This index is often significantly influenced by portfolio flows, so policymakers are often constrained by the threat of capital flight. This situation also puts interest groups representing relatively immobile factors of production, such as labor, in a disadvantageous position compared with portfolio capital in the domestic political economy.

Entrepreneurship

Frank Knight suggests that in a capitalist economy entrepreneurs perform the important role of risk taking.[38] If so, entrepreneurship is embedded in

capital and technology flows because both technology and capital providers take risks by venturing in uncertain areas. By the same token, MNEs investing in new and emerging markets take risks by providing capital and technology. It is difficult, however, to tease out the contribution of the various objectives from MNEs' investment decisions; thus, one cannot conclude that a certain percentage of their profits should be attributed to their roles as risk-taking entrepreneurs.

Venture capital separates the functions of technology and capital provision. This is useful because only the latter is generally associated with entrepreneurship.[39] International integration of entrepreneurship implies that venture capitalists will come to view the entire globe and not merely their home countries as the relevant arena for both raising and deploying funds. Consequently, to measure integration of entrepreneurship flows, we suggest two indicators: the proportion of investments made by venture capitalists outside their home countries, and the proportion of funds they raise outside their home countries. For example, in 1990, only 13.5 percent of investments by the European funds were made outside their home countries.[40] On this count, European venture capitalists are not highly integrated into the global economy.

The internationalization of venture capitalists creates incentive for them to lobby for international institutions that reduce the political risks associated with foreign investments. Although by their very nature venture capitalists take significant risks by investing in untested ideas, such risks are compounded if few assurances exist that they can capture the gains in the event the projects they support succeed. We can therefore expect countries that have significant numbers of globalized venture funds to canvass actively for creating international institutions (such as the Multilateral Investment Guarantee Agency) that reduce the political risks associated with such investments.

Venture capitalists investing abroad are also vulnerable to exchange rate fluctuations. Domestic governments that want to attract such funds (often in the form of portfolio capital) therefore have incentives to adopt credible policies that reduce both political and exchange rate risks. This again impacts the domestic political economy, as governments are constrained in employing the traditional Keynesian fiscal and momentary countercyclical policies labor groups often desire.

Land

Land is perhaps the most immobile factor of production, and developing indicators of land flows is therefore problematic. Instead of focusing on land flows, we examine the accessibility of land to foreign actors. The relevant question then is, does a country allow foreigners to own real estate or to have access to it through long-term leases? To measure economic integration of land markets, we suggest the following indicator: foreign-controlled

(ownership or long-term leases) holdings as a proportion of total real estate.

Land ownership, or some sort of usufructuary rights, is often necessary for the functioning of industries such as tourism, agribusiness, retailing, and food services. In the case of agribusiness, historically, many MNEs have owned and operated plantations in Latin America, Asia, and Africa. As a result of their significant economic (and sometimes exploitative) power in the local economy, such firms have often become important domestic political actors as well. This has led many sectors of the local population (especially small farmers and plantation workers) to equate global economic integration with neocolonization. Thus, strong local resistance in many countries to current trends in cross-border integration can be attributed in part to the history of exploitative practices of some MNEs.

In addition, foreign ownership of land, especially prominent landmarks (such as the Japanese purchase of Rockefeller Center), is often viewed as an example of foreign domination that needs an appropriate countervailing domestic response. Thus, the domestic political economy is often influenced by historical memories and xenophobic or patriotic concerns that demand restrictions on foreign ownership, thereby impeding integration of land markets.

Technology

Cross-border technological flows include flows of intellectual property and industrial knowledge. Richard Caves identifies three stages in the development and distribution of industrial knowledge: invention, innovation, and diffusion.[41] The first two phases are often conflated under the rubric of research and development (R&D). Technology markets are often highly imperfect (subject to market failure), thereby creating incentives for firms to internalize such transactions within their administrative hierarchies. In practice, however, technological diffusion takes place through FDI flows as well as arm's-length transactions, such as the licensing of proprietary technology and the sale of patents and trademarks.[42]

About 80 percent of civilian research is undertaken within MNEs.[43] Importantly, MNEs increasingly are not centralizing R&D in the parent country; their R&D expenditures have become more dispersed abroad, especially wherever increases occur in the share of overseas subsidiaries sales in overall sales.[44] Further, organizational arrangements—including joint research ventures, technology exchange agreements, and customer-supplier relationships—are facilitating technological flows across national borders. The salience of such institutional routes varies across sectors. For example, joint research ventures between 1970 and 1989 accounted for 13.5 percent of technological alliances in biotechnology compared with

25.7 percent in new materials. On the other hand, direct investment accounted for 19.3 percent of alliances in biotechnology compared with 9.4 percent in new materials.[45]

To measure integration of technology markets, we suggest the following indicator: the proportion of patents granted to foreigners. For example, in 1990, 45 percent of patents granted in the United States and 45 percent of the patent applications pending in the European Patent Office were of foreign origin.[46]

Integration of technology markets significantly impacts the domestic political economy. First, domestic firms that export technology lobby their home governments to demand that host governments protect intellectual property rights. The U.S. government has a provision in its trade laws, Section 301, whereby it can impose retaliatory tariffs on imports from countries that do not protect intellectual property rights. Domestic interest groups are also lobbying for the United States to oppose China's entry into the World Trade Organization until the Chinese government enforces laws that protect their intellectual property rights.

Conclusion

Economic integration can be assessed at multiple levels: systemic, regional, country, sectoral, and firm. We focus on developing indicators for the national level. These indicators could also be employed at the regional and systemic levels.

There are two broad approaches to assess economic integration among countries: institution- and outcome-based. Institution-based indicators focus on institutional impediments (or the lack of them) to economic flows. Two such measures have been suggested: readiness indicators and the stages-of-integration scale. Institution-based measures indicate only the potential for integration—the fewer the institutional impediments, the greater the incentives for economic actors to engage in cross-border economic activity. On this count, removing institutional impediments is a necessary condition only for cross-border integration.

Outcome-based indicators reflect end results of processes at institutional and firm levels. The most popular outcome-based indicator is the trade-GDP ratio. With the surges in FDI flows in the last three decades, FDI-GFCF and FDI-GDP ratios have also become popular. FDI and trade are complementary routes to access foreign markets, so scholars have developed a combined FDI-trade indicator that reflects both net exports and net sales of foreign affiliates abroad.

The use of multiple indicators raises two questions. First, are they superior to trade-based or FDI-based measures? Second, would they lead to information overload, thereby impeding policy processes? We argue that

since trade-based and FDI-based measures do not adequately reflect microfoundations of integration, they can be misleading regarding the domestic political economy; that is, they may not adequately identify the winners and losers. Therefore, in addition to these indicators, an examination of integration at the level of factors of production is required.

A focus on factors of production suggests that factor-based interest groups significantly influence the domestic political economy of international integration. It is well established that international trade differentially benefits different factors.[47] Thus, sectors employed intensively in exports are expected to lobby in favor of free trade, and those employed intensively in import-competing industries will lobby against it. We can thus expect the beneficiaries to promote trade and investment flows, and this, in turn, impacts the domestic political economy.[48] Interest groups, however, can coalesce around other attributes as well. For example, sectoral concentration of integration is important. Domestic firms and industries that export significant proportions of their output could collectively promote trade liberalization. Recently, fearing a shortage of high-skilled workers, U.S.-based high-technology firms collectively lobbied Congress to enhance immigration quotas (H1B visa category) for high-skilled foreign workers. They suggested that shortages make U.S. firms uncompetitive in global markets, thereby creating incentives for them to shift certain stages of their value chains abroad. Needless to say, high-technology firms were opposed by organized labor and other groups favoring restricted immigration to the United States.

The varying levels of intracountry and intercountry integration have crucial implications for global governance. In many issue areas, global regimes and institutions not only define the rules of the game but also monitor, enforce, and sanction actors. The sustenance of global regimes is critically dependent on domestic political support. For example, the Bretton Woods regime was predicated on the domestic compact often termed *embedded liberalism.*[49] As the levels of economic integration advance but continue to vary within and across countries, new sorts of political pressures emerge regarding the legitimacy of various regimes. The losers in particular demand jettisoning such regimes. Further, the creation of new global institutions is often impeded by the diffuse nature of benefits that reduce incentives for potential winners to mobilize coalitions.

A second concern regarding the use of multiple indicators is that such indicators may lead to incoherent assessment of the levels of integration, as well as to information overload. If so, should one construct a composite index by combining some or all outcome-based indicators? A composite index is useful if economic integration is unidimensional. If it is multidimensional, a subset of the dimensions might compensate for the lack of integration in the others; for example, higher labor integration could negate the negative consequences of lower land integration.

There is a methodological challenge since multiple measures need to be aggregated. Because we have suggested multiple indicators for many flows, which of these would be included? Would all indicators have equal weight? How will the indicators be aggregated? Are some of them correlated?

Additionally, we need to justify a composite index on practical grounds: As an independent variable, does it better predict variations in a given dependent variable than a single-component index (such as the trade-GNP ratio)? Suppose we wish to explain variations in levels of public support for multilateral institutions, such as the World Trade Organization, across countries or within a country over time. Our dependent variable is the level of public support. Assume that we have national-level public opinion data on this subject. Our hypothesis might be that economic integration (independent variable) results in greater public support for multilateral institutions, and we wish to estimate the strength of that relationship. First, we operationalize economic integration simply as the trade-GDP (single-item) ratio and run a regression. Next, we operationalize integration based on the composite index. We again run a regression. For the composite index to be useful, we should have an r-square significantly higher than the one from the trade-GDP measure. Only then can we claim that a more complex indicator has superior power to explain variations in independent variables. In this essay, we lay out a measurement strategy needed to ensure that the construction of a single indicator, multiple indicators, or a composite index of economic integration is theoretically grounded and empirically useful.

Notes

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1. Aseem Prakash and Jeffrey A. Hart, "Globalization and Governance: An Introduction," in Aseem Prakash and Jeffrey A. Hart, eds., *Globalization and Governance* (London: Routledge, 1999), pp. 1–24.

2. DeAnne Julius, *Global Companies and Public Policy* (New York: Council on Foreign Relations, 1990).

3. Such compartmentalization becomes problematic, however, once we acknowledge that business strategy and public policy significantly impact each other. Political and institutional factors are key inputs for developing firm-level strategies. Stephen J. Kobrin, *Managing Political Risk Assessment* (Berkeley: University of California Press, 1982); David Vogel, *National Styles of Regulation* (Ithaca, N.Y.: Cornell University Press, 1986); C. K. Prahald and Yves L. Doz, *The Multinational Mission* (New York: Free Press, 1987); Jean J. Boddewyn, "Political Aspects of MNE Theory," *Journal of International Business Studies* 19, no. 3 (1988):

341–363; Michael E. Porter, *Competitive Advantage of Nations* (New York: Free Press, 1990); Jeffrey A. Hart, *Rival Capitalists* (Ithaca, N.Y.: Cornell University Press, 1992); Thomas L. Brewer, "An Issue Area Approach to the Analysis of MNE-Government Relations," *Journal of International Business Studies* 23, no. 2 (1992): 295–309; John H. Dunning, *The Globalization of Business* (London: Routledge, 1993); Stephanie A. Lenway and Thomas P. Murtha, "The State as Strategist in International Business Research," *Journal of International Business Studies* 25, no. 3 (1994): 513–535; David Yoffie, ed., *Beyond Free Trade* (Boston: Harvard Business School Press, 1996). Similarly, as firms increasingly internationalize, their policies and strategies become critical factors in influencing public policies, especially in the economic realm. Raymond Vernon, *Sovereignty at Bay: The Multinational Spread of U.S. Enterprises* (New York: Basic Books, 1971); Richard Barnet and Ronald E. Mueller, *Global Reach* (New York: Simon and Schuster, 1974); Gary Gereffi, *The Pharmaceutical Industry and Dependency in the Third World* (Princeton: Princeton University Press, 1983); Robert Gilpin, *Political Economy of International Relations* (Princeton: Princeton University Press, 1987).

4. For a discussion, see Prakash and Hart, "Globalization and Governance."

5. Thomas L. Brewer, "Government Policies, Market Imperfections, and Foreign Direct Investment," *Journal of International Business Studies* 24, no. 1 (1993): 101–120.

6. David Vogel, however, suggests that increasing levels of trade may actually create incentives for firms to adopt stringent standards ("California effect") if the major destinations for exports (Germany in the European Union and California in the United States) have laws that are stricter than those in other jurisdictions. David Vogel, *Trading Up* (Cambridge: Harvard University Press, 1995).

7. Edward M. Graham and Paul R. Krugman, *Foreign Direct Investment in the United States*, 3d ed. (Washington, D.C.: Institute for International Economics, 1995).

8. United Nations Conference on Trade and Development (UNCTAD), *World Investment Report* (Geneva: United Nations, 1997); UNCTAD, *World Investment Report (*Geneva: United Nations, 1998).

9. We could arrive at the opposite result by focusing on the percentage of changes that place more restrictions on FDI: in 1991, 2.5 percent of all changes made FDI more restrictive, whereas in 1997, 11.0 percent of changes made FDI more restrictive. Further, absolute numbers or percentages of restrictive changes accurately reflect levels of cross-border integration only if individual changes in FDI institutions are comparable. For example, a given country may significantly liberalize its FDI institutions in a single stroke, whereas some others may achieve the same outcome incrementally. This does not imply that the former is less hospitable to FDI than the latter.

10. These data need careful interpretation. One reason for an explosive growth in the number of bilateral treaties is the increased number of countries following the breakup of the Soviet Union and some Eastern European countries. Such aggregate data also reveal little of the magnitude of changes. Further, as restrictions on FDI flows are reduced, the potential for changes in FDI-related institutions will decrease. Hence, the number of such changes will decrease, even though economic linkages may be strengthening in quantitative and qualitative terms. Nevertheless, such trends suggest an increasing degree of institutionalization of economic integration across the world, especially in the realm of FDI flows.

11. Gary C. Hufbauer and Jeffrey J. Schott, assisted by Diana Clark, *Western Hemisphere Economic Integration* (Washington, D.C.: Institute for International Economics, 1994).

12. Jacob Viner, *Custom Union Issue* (London: Stevens and Sons, 1950); Bela Balassa, *Theory of Economic Integration* (London: Allen and Unwin, 1961).

13. We thank an anonymous reviewer for this point.

14. R. Cooper, *Economics of Interdependence: Economic Policy in the Atlantic Community* (New York: McGraw-Hill, for the Council on Foreign Relations, 1968); also see N. Angell, *The Great Illusion* (New York: G. P. Putnam, 1911).

15. Robert O. Keohane and Joseph S. Nye, *Power and Interdependence* (Boston: Little, Brown, 1977).

16. Since FDI stocks represent historical values of equity and debt held by parent firms, they are considerably understated. Edward M. Graham suggests using a multiplicative factor of 1.62 to calibrate the reported value of FDI stocks. See Edward M. Graham, *Global Corporations and National Governments* (Washington, D.C.: Institute for International Economics, 1996).

17. UNCTAD, *World Investment Report,* 1998; UNCTAD, *World Investment Report* (Geneva: United Nations, 1996).

18. UNCTAD, *World Investment Report,* 1997.

19. Ibid.

20. Robert A. Mundell, "International Trade and Factor Mobility," *American Economic Review* 47 (June 1957): 321–335; Raymond Vernon, "International Investment and International Trade in the Product Cycle," *Quarterly Journal of Economics* 80 (May 1966): 190–207.

21. C. Fred Bergsten, Thomas Horst, and Theodore Moran, *American Multinationals and American Interests* (Washington, D.C.: Brookings Institution, 1978); R. D. Pearce, "Overseas Production and Exporting Performance: Some Further Investigations," University of Reading Discussion Papers in International Investment and Business Studies, 1991, p. 135.

22. UNCTAD, *World Investment Report,* 1996.

23. Debora Spar and David Yoffie, "Race to the Bottom or Governance from the Top," in Aseem Prakash and Jeffrey A. Hart, eds., *Coping with Globalization* (London: Routledge, forthcoming 2000).

24. J. Bhagwati, "Trade and the Environment: The False Conflict?" in Durwood Zaelke, Paul Orbuch, and Robert F. Housman, eds., *Trade and the Environment* (Washington, D.C.: Island Press, 1993), pp. 159–190.

25. K. Kojima, "Reorganization of North-South Trade: Japan's Foreign Economic Policy for the 1970s," *Hitotsubashi Journal of Economics* 14 (1973): 1–21.

26. Julius, *Global Companies and Public Policy.*

27. Ownership-based measures suffer from problems such as identifying the nationality of firms. Julius also points out that this measure is insufficient to assess levels of integration with countries that significantly impede FDI flows.

28. Martin Tolchin and Susan Tolchin, *Selling Our Security: The Erosion of America's Assets* (New York: Alfred A. Knopf, 1992).

29. Robert B. Reich, "Who Is Us?" *Harvard Business Review* (January–February 1990): 53–54.

30. UNCTAD, *World Investment Report,* 1998.

31. This section draws on Aseem Prakash and Jeffrey A. Hart, "Political Economy of Economic Integration," *Business and the Contemporary World* 10 (1998): 611–632.

32. A. A. Berle and G. C. Means, *The Modern Corporations and Private Property* (New York: Macmillan, 1932); Armen Alchian and Harold Demsetz, "Production, Information Costs, and Economic Organization," *American Economic Review* 62 (1972): 777–795; Benjamin Klein, Robert Crawford, and Armen Alchian, "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process," *Journal of Law and Economics* 21 (1978): 297–326; Victor Goldberg,

"Relational Exchange: Economics and Complex Contracts," *American Behavioral Scientist* 22 (1980): 337–352; Oliver E. Williamson, *Economic Institutions of Capitalism* (New York: Free Press, 1985); David J. Teece, "Transaction Cost Economics and the Multinational Enterprise: An Assessment," *Journal of Economic Behavior and Organization* 7 (March 1986): 25–45.

33. Sharon S. Russell and Michael S. Teitelbaum, "International Migration and International Trade," World Bank Discussion Paper No. 160 (Washington, D.C.: World Bank, 1992).

34. Adapted from World Bank, *World Development Report* (Washington, D.C.: World Bank, 1991), and Russell and Teitelbaum, "International Migration and International Trade."

35. U.S. Department of Commerce, *Survey of Current Business,* Washington, D.C., July 1994, pp. 161.

36. UNCTAD, *World Investment Report,* 1997, pp. 325–338.

37. Ibid., pp. 339–352.

38. Frank H. Knight, *Risk, Uncertainty and Profit* (New York: Harper, 1965 [1921]).

39. We thank Michael Fratianni for this point.

40. William D. Bygrave and Jeffery A. Timmons, *Venture Capital at the Crossroads* (Boston: Harvard Business School Press, 1992).

41. Richard E. Caves, *Multinational Enterprise and Economic Analysis,* 2d ed. (New York: Cambridge University Press, 1996).

42. C. T. Taylor and Z. A. Silberston, "The Economic Impact of the Patent System," Monograph No. 23 (Cambridge: Cambridge University Press, 1973); L. K. Mytelka, *The Growth of Strategic Alliances: A Stock Taking* (Ottawa: Carleton University Press, 1994).

43. UNCTAD, *World Investment Report* (Geneva: United Nations, 1995).

44. M. C. Zejan, "R&D Activities in Affiliates of Swedish Multinational Enterprises," *Scandinavian Journal of Economics* 92, no. 3 (1990): 487–500.

45. UNCTAD, *World Investment Report,* 1995, p. 156.

46. Robert Wade, "Globalization and Its Limits: Reports of the Death of the National Economy Are Greatly Exaggerated," in Suzanne Berger and Ronald Dore, eds., *National Diversity and Global Capitalism* (Ithaca, N.Y.: Cornell University Press, 1996), pp. 60–88.

47. Ronald Rogowski, *Commerce and Coalitions: How Trade Affects Domestic Political Alignments* (Princeton: Princeton University Press, 1989).

48. International economic activity often differentially impacts industries and even firms. Thus, interest groups in the domestic political economy may also reflect industry- or firm-specific interests. On this count, it is important to assess the levels of globalization at the industry and firm levels. For empirical measures of industry-level globalization, see Mona V. Makhija, Kwangsoo Kim, and Sandra D. Williamson, "Measuring Globalization of Industries Using a National Industry Approach: Empirical Evidence Across Five Countries over Time," *Journal of International Business Studies* 28, no. 4 (1997): 679–710.

49. John G. Ruggie, "International Regimes, Transactions, and Change: Embedded Liberalism in the Postwar Economic Order," *International Organization* 36 (1982): 379–415.