December 2, 2009 No. 42

Made on Earth
How Global Economic Integration Renders Trade Policy Obsolete

by Daniel Ikenson

Executive Summary

During the past few decades, a truly global division of labor has emerged, presenting opportunities for specialization, collaboration, and exchange on scales once unimaginable. The confluence of falling trade and investment barriers, revolutions in communications and transportation, the opening of China to the West, the collapse of communism, and the disintegration of Cold War political barriers has spawned a highly integrated global economy with vast potential to produce greater wealth and higher living standards.

The factory floor is no longer contained within four walls and one roof. Instead, it spans the globe through a continuum of production and supply chains, allowing lead firms to optimize investment and output decisions by matching production, assembly, and other functions to the locations best suited for those activities. Because of foreign direct investment, joint ventures, and other equity-sharing arrangements, quite often "we" are "they" and "they" are "we." And because of the proliferation of disaggregated, transnational production and supply chains, "we" and "they" often collaborate in the same endeavor. In the 21st century, competition is more likely to occur between entities that defy national identification because they are truly international in their operations, creating products and services from value-added activities in multiple countries. There is competition *between* supply chains, but only after there is cooperation and collaboration *within* supply chains.

But trade and investment policy has not kept pace with these remarkable changes in commercial reality. Our globally integrated economy requires policies that are welcoming of imports and foreign investment and that minimize regulations or administrative frictions based on misconceptions about some vague or ill-defined "national interest." To nurture the promise of our highly integrated global economy, governments should commit to policies that reduce frictions throughout the supply chain—from product conception to consumption—as well as in the flow of services, investment, and human capital.

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Introduction

As policymakers respond to the global recession, they should remember that the unprecedented global economic growth experienced in recent decades owes much to the removal of political and economic barriers to trade and investment. During that time, a division of labor on a truly global scale has emerged, presenting opportunities for specialization, collaboration, and exchange that affirm—and might even astonish—the great Adam Smith. Falling trade and investment barriers, revolutions in communications and transportation, the opening of China to the West, the collapse of communism, and the disintegration of Cold War political barriers have spawned a highly integrated global economy with vast potential to produce greater wealth and higher living standards.

The dramatic reduction in transportation and communication costs combined with widespread liberalization of trade, finance, and political barriers are all accomplices in what has been called "the death of distance."[1] Under the new paradigm, the factory floor is no longer contained within four walls and one roof. Instead, the factory floor spans the globe through a continuum of production and supply chains, allowing lead firms to optimize investment and output decisions by matching production, assembly, and other functions to the locations best suited for those activities.

These changes warrant a fresh approach to trade policy. In the 21st century, it is inaccurate to characterize international trade as a competition between "us" and "them." Because of foreign direct investment, joint ventures, and other equity-sharing arrangements, quite often "we" are "they" and "they" are "we." And as a result of the proliferation of disaggregated, transnational production and supply chains, "we" and "they" often collaborate in the same endeavor. Under the new paradigm, workers in developed and emerging countries are more likely to be coworkers than competitors.

Today's global economic competition is less likely to feature "our" producers against "their" producers and more likely to feature entities that defy national identification because they are truly international in their operations, creating products and services from value-added activities in multiple countries. There is competition *between* supply chains, but success first demands cooperation and collaboration *within* supply chains (i.e., cooperation and collaboration between some of "us" and some of "them"). This new commercial reality demands policies that are welcoming of imports and foreign investment, and that minimize regulations or administrative frictions that are based on misconceptions about some vague or ill-defined "national interest."

The driving force behind innovation and opportunity in this new era is the reduction and elimination of artificial barriers, both political and economic. As those barriers have diminished, opportunities for new combinations of labor, investment, and human capital have emerged in defiance of what were once formidable obstacles to wealth creation.

There have been signs in recent years that policymakers are beginning to grasp the new reality. "Autonomous" or "unilateral" liberalization of trade barriers has accounted for most of the trade liberalization in developing countries over the past two decades and, on average, applied tariff rates globally are well below their maximum allowable rates or "bound" rates under World Trade Organization agreements. However, the financial crisis and subsequent global recession have tested the depth of that understanding and brought out the worst political instincts of some policymakers who think only about short-term political benefits and disregard longer-term costs.

In some cases, governments have raised trade barriers, subsidized domestic champions, or imposed local lending or hiring requirements, all in the name of creating or protecting local jobs and supporting the local economy. Perhaps the most notorious protectionism during the current global recession has taken the form of restrictions on competition in government procurement markets. Apparently, policymakers around the world still accept the pre-enlightened belief that proper stewardship of taxpayer resources and the optimal path to stimulating economies

require limiting fiscal spending to products and services produced locally. It started with Buy American provisions in the United States, and like swine flu has jumped borders to Canada, China, the Philippines, and Australia. Requirements to lend and hire locally have also been imposed in some places. By indulging these reflexive, populist, once-considered-vanquished ideas, politicians have made matters worse, while reinforcing antiquated assumptions about how the global economy actually works.

Global economic integration has enabled enterprises to flourish on scales unimaginable just a generation ago. Not only should the reimposition of barriers under current economic conditions be eschewed, but a firm commitment to bring trade and investment policy up to speed with 21st century commercial reality would be a wise investment in the future.

To nurture the promise of our highly integrated global economy, governments should stop conflating the interests of certain producers with the national interest and commit to policies that reduce frictions throughout the supply chain—from product conception to consumption—as well as in the flow of services, investment, and human capital.

Stop Thinking "Us" vs. "Them"

The woes of two iconic American automakers, Chrysler and GM, and the U.S. government's assumption of responsibility for their rehabilitation occasioned a direct appeal from President Obama to American economic "patriotism." He exclaimed, "If you are considering buying a car, I hope it will be an American car." Ignoring, for the moment, the impropriety of the U.S. president attempting to influence commercial outcomes by endorsing particular products, even if one were inclined to buy an American car, the tricky question remains: What constitutes an "American" car? Economist Matthew Slaughter, in a recent *Wall Street Journal* op-ed, attempted to elucidate:

> What exactly makes a car "American"? Does it mean a car made by a U.S.-headquartered company? If so, then it is important to understand that any future success of the Big Three will depend a lot on their ability to make—and sell—cars outside the United States, not in it. A big reason Chrysler has fallen bankrupt is its narrow U.S. focus. It has not boosted revenues by penetrating fast-growing markets such as China, India and Eastern Europe. Nor has it lowered costs by restructuring to access talent and production beyond North America.[2]

However, the angry reactions from American labor unions, their patrons in Congress, and rabble-rousing television and radio personalities to GM's proposal to reduce costs by shifting more production to Mexico and China suggest that the above definition of an American car is not universally embraced.[3] For those who objected to GM's plans, it is not the company's bottom line that matters, but rather the company's capacity to create U.S. jobs and stimulate U.S. economic activity. That GM might need to have a viable plan to become profitable so as to create and support U.S. jobs and stimulate U.S. economic activity somehow doesn't factor into the equation for these detractors. Instead, in zero-sum fashion, they see investment in foreign operations as antithetical to domestic job creation and economic growth.[4]

Perhaps, then, they would find Slaughter's alternative definition of an American car more acceptable:

> Or is an "American" car one made within U.S. borders? If so, then it is important to understand that America today has a robust automobile industry thanks to insourcing. In 2006, foreign-headquartered multinationals engaged in making and wholesaling motor vehicles and parts employed 402,800 Americans—at an average annual compensation of $63,538—20% above the national average. Amid the Big Three struggles of the past generation, insourcing companies like Toyota, Honda

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> and Mercedes have greatly expanded automobile operations in the U.S. In fiscal year 2008, Toyota assembled 1.66 million motor vehicles in North America with production in seven U.S. states supported by research and development in three more.[5]

But many Americans—including many of those who reject Slaughter's first definition—have rejected this definition of an American car as well. Ironically, the people who are most inclined to oppose outsourcing and define it as "shipping jobs overseas" tend to be the same people who criticize "insourcing" for shipping profits or control of U.S.-based assets overseas. Even though the top-10-selling models of cars and trucks in the United States in 2008 were all produced in the United States, by both Detroit-based and foreign nameplate producers, and even though foreign nameplate producers employ hundreds of thousands of American workers, pay local and national taxes, support local economies, reinvest part of their earnings in their U.S. operations, and invest in other local businesses, the fact that corporate headquarters are located in Tokyo or Stuttgart or Seoul seems to hold sway. Yet, as put in another recent *Wall Street Journal* article:

> Once you put down the flags and shut off all the television ads with their Heartland, apple-pie America imagery, the truth of the car business is that it transcends national boundaries. A car or truck sold by a "Detroit" auto maker such as GM, Ford or Chrysler could be less American—as defined by the government's standards for "domestic content"—than a car sold by Toyota, Honda or Nissan—all of which have substantial assembly and components operations in the U.S.[6]

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At best, there is grudging acceptance of the possibility that these insourcing companies are part of the American manufacturing landscape. But it is impossible to imagine that the U.S. government would have ever rescued Toyota or Honda if they had presented with financial conditions as dire as Chrysler's and GM's.

The automobile industry is one of many that transcend national boundaries and is only one example of why international competition can no longer be described as a contest between "our" producers and "their" producers. The same holds for most industries throughout the manufacturing sector.

Even the genetics of the U.S. steel industry, which has been one of the manufacturing sector's most vocal proponents of trade barriers over the years, are difficult to decipher nowadays. The largest U.S. producer of steel is the majority Indian-owned company Arcelor-Mittal, which has corporate headquarters in Luxembourg and Hong Kong. The largest "German" producer, Thyssen-Krupp, is in the process of completing a $3.7 billion green-field investment in a carbon and stainless steel production facility in Alabama, which will create an estimated 2,700 permanent jobs there. And American icon U.S. Steel Corporation generates roughly 25 percent of its total revenue selling steel produced at its mills in Slovakia and Serbia.[7]

Despite the constant drone of voices bemoaning the imaginary decline of U.S. manufacturing, the reality is that foreigners have been quite bullish on the sector's future. Between 2004 and 2008, the stock of foreign direct investment in U.S. manufacturing increased by 48 percent to nearly $800 billion—a statistic that should send "race-to-the-bottom" adherents into retirement.[8] According to the Organization for International Investment, there were 875 new "Greenfield" projects underway or expanding in 2008.[9]

Although foreign direct investment (FDI) in the U.S. automotive and steel sectors, at $52 billion and $17 billion, respectively, is significant, it is dwarfed by FDI in other sectors. The new Honda plant in Indiana and the Thyssen-Krupp facility in Alabama make the headlines, but foreign investment in U.S. chemical manufacturing at $218 billion is more than five times larger than FDI in the automotive sector and nearly 14 times the investment in steel production. Foreign investment in other U.S. manufacturing sectors—such as machinery, computers and elec-

tronics, beverages, and cement and concrete—is also more substantial than FDI in the U.S. automotive sector. In 2006, foreign majority-owned companies employed more than 5 million people in the United States, and accounted for $195 billion or 13 percent of U.S. exports and $482 billion or 22 percent of U.S. imports of goods and services.[10]

Meanwhile, statistics on U.S. direct investment abroad further support the notion that industries transcend national borders. Between 2004 and 2008, the total stock of direct U.S. investment abroad in all economic sectors increased 45 percent, from $2.2 trillion to $3.2 trillion. The stock of direct U.S. investment in foreign manufacturing increased by 23 percent from $417 billion in 2004 to $512 billion in 2008.[11]

The "us" versus "them" characterization of the global economy has never been quite right, but with today's levels of cross-border investment and economic collaboration, such thinking is dangerously anachronistic.

The Proliferation of Global Production and Supply Chains

Dell is a well-known American brand and Nokia a popular Finnish brand, but neither makes most of its components or assembles its products in the United States or Finland, respectively. Some components of products bearing the logos of these internationally recognized brands might be produced in the "home country." But with much greater frequency nowadays, component production and assembly operations are performed in different locations across the global factory floor.

Consider the Chinese-born computer company, Lenovo. Its executive headquarters are located in Beijing, Singapore, and North Carolina. It operates research centers in China, Japan, and the United States. And its production and assembly operations occur in China, India, Mexico, and Poland.

To call Lenovo "Chinese" or Nokia "Finnish" or Dell "American" misses the broader point that these companies are truly global entities with facilities, employees, and stakes in dozens of countries. Whereas a generation ago a product bearing the logo of an American or Japanese or German company may have been comprised exclusively of domestic labor, materials, and overhead, today that is much less likely to be the case. Today, that product is more likely to reflect foreign value-added, regardless of location of the company's headquarters or the country affiliated most closely with the brand. The distinction between what is and what isn't American or Finnish or Chinese has been blurred by foreign direct investment, cross-ownership, equity tie-ins, and transnational supply chains. As Samuel Palmisano, IBM's chief executive officer, put it, "State borders define less and less the boundaries of corporate thinking or practice."[12]

A 2008 World Trade Organization report explains the pattern this way:

> Recent theories of fragmentation predict that a reduction in trade costs leads to greater fragmentation of production, with firms geographically spreading the different stages of their production process. When trade costs of intermediate inputs fall, different stages of the production process can take place in different places.[13]

Trade in intermediate goods related to "fragmentation of production" or "vertical specialization" or "production sharing"—terms given to the inexorable expansion of the factory floor across borders and oceans in response to falling costs—has grown faster than trade in final goods during the past two decades.[14] The same is true for services.

Economists generally rely on trade data, input-output tables, and firm-level surveys to study trends in these multinational production-sharing operations. Though the literature describes different measurement approaches—each with its own strengths and weaknesses—the consensus conclusion, regardless of measurement approach, is that the trend toward vertical specialization continues to grow among countries large and small and across the globe.

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The Organization for Economic Cooperation and Development maintains an input-output database to study the importance of intra-industry linkages and inter-country dependencies in the production of manufactured goods. Out of 31 countries for which comparisons could be made between the mid-1990s and 2000, 29 demonstrated an increased reliance on imported intermediate inputs (measured as the ratio of imported intermediate inputs over total consumption of intermediate inputs).[15] The median ratio increased from 17.9 percent to 22.5 percent between the two periods.[16]

Under the metric just described, smaller economies—which tend to produce a more narrow range of products and rely more on imported materials and components—show a higher level of integration than larger economies, which produce a wider array of intermediate products domestically and find it easier to exploit economies of scale. Accordingly, the top five integrated countries by this metric are all relatively small: Ireland (70.6%), Hungary (63.2%), Belgium (57.0%), Slovakia (54.4%), and Austria (52.7%).[17] And the bottom five are large: Japan (7.2%), Brazil (10.5%), China (12.6%), India (12.7%), and the United States (17.8%).[18]

An alternative formulation, which considers the use of imported inputs used in domestic production that is *exported*, may be a more useful measure of the degree of integration. A high value of imported inputs to total inputs suggests that a country is dependent on imports for production but does not give much indication about where the supply chain goes after that. A high value of imported inputs contained in exports, however, would suggest that producers in that country rely on foreigners for inputs, whose output is, in turn, relied on by producers or consumers abroad.

Under this alternative formulation (imported inputs over domestically produced exports), the degree of vertical specialization is higher than under the first formulation (imported inputs over total inputs). The median increased from 26.3 percent in 1995 to 29.9 percent in 2000.[19] The top five integrated countries are still relatively small countries under this metric, but some of the larger countries escape the lowest five: the United States increased from 12.3 percent in 1995 to 15.1 percent in 2000; China increased during the period from 16.6 percent to 21.0 percent.[20] One other highlight from this dataset is that the ratio of exports to output increased an average of 7.3 percentage points between 1995 and 2000, and more than half of that increase (53.1%) was attributable to vertical specialization.[21] In other words, the growth in trade during this period was mostly of intermediate goods sold across borders but within production supply chains.

David Hummels, who has been studying the topic since the 1990s, estimates that vertical specialization grew by as much as 40 percent in the last quarter of the 20th century.[22] He explains the reason for that growth this way:

> Rather than concentrate production in a single country, the modern multinational firm uses production plants—operated either as subsidiaries or through arm's length relationships—in several countries. By doing so, firms can exploit powerful locational advantages, such as proximity to markets and access to relatively inexpensive labor.[23]

Perhaps the most compelling example of Hummels' observation is the production process for the Apple iPod. A popular device with which consumers around the world are familiar, the iPod—according to the inscription on the back of every model—is "Designed by Apple in California; Assembled in China." The iPod provides the quintessential model of transnational production in the 21st century. The process between the design and final sale of an iPod involves collaboration and cooperation within a production supply chain that spans several countries, supporting jobs and economic activity in each.

A 2007 study published by the University of California–Irvine sought to determine "who captures value in a global innovation system" by disaggregating the components contained in an Apple iPod and determining the companies and countries involved in manufacturing a unit in China. The authors found that the compo-

nents were produced in the United States, Japan, Singapore, Taiwan, Korea, and China by companies headquartered in the United States, Japan, Taiwan, and Korea. The total cost of producing the iPod (components plus labor) was estimated to be about $144.

Most of the profits on the constituent components accrue to Japanese companies, who produce the most important and most expensive parts. Two U.S. components producers and a few from other countries capture small shares of the value. But the lion's share of value accrues to Apple since iPods retail for $299 and the cost of production is $144 (at the time the study was conducted). Some of the $155 per-unit mark-up goes toward compensating U.S. distributors, retailers, and marketers, while the rest is distributed to Apple shareholders or devoted to research and development, which supports engineering and design jobs higher up the value chain.[24]

The capture of value in the iPod production chain is fairly typical for western brands. James Fallows characterizes this process of outsourcing as following the shape of a "Smiley Curve" that is plotted on a chart where the production process from start to finish is measured along the horizontal axis and the value of each stage of production is measured on the vertical axis. About this production process, Fallows concludes:

> The significance is that China's activity is in the middle stages—manufacturing, plus some component supply and engineering design—but America's is at the two ends, and those are where the money is. The smiley curve, which shows the profitability or value added at each stage, starts high for branding and product concept, swoops down for manufacturing, and rises again in the retail and servicing stages. The simple way to put this—that the real money is in brand name, plus retail—may sound obvious, but its implications are illuminating.[25]

Rather than appreciate how this complementary process harnesses the benefits of our globalized division of labor, some begrudge iPods sales in the United States for adding to the bilateral trade deficit. But as the iPod study authors caution, "For every $300 iPod sold in the U.S., the politically volatile U.S. trade deficit with China increased by about $150 (the factory cost). Yet, the value added to the product through assembly in China is probably a few dollars at most." Should we really lament a trade deficit in iPods or any other products assembled abroad, particularly when those products comprise U.S. value-added and support high-paying U.S. jobs?

One implication is that Chinese and American labor is complementary in this process. Without the division of labor, ideas hatched in American laboratories by high-skilled, high-wage American engineers would be less likely to materialize into ubiquitous consumer products because they would be too expensive to make and sell for mass consumption. Without the division of labor, fewer ideas would go far beyond conception. As a consequence, higher paying jobs at both ends of the smiley curve would be more difficult to support, as would the lower value-added manufacturing and assembly jobs in China.

The U.S. economy may reap the most absolute value out of this arrangement, but from China's perspective there are considerable benefits as well. U.S. technology and investment provide jobs that would not exist in China if this vertical specialization were not possible. The arrangement also provides a conduit for technology transfer and skills acquisition that helps raise Chinese productivity levels and standards of living. China is in no way consigned indefinitely to performing low-wage, low-skill functions in the global supply chain. In fact, Chinese workers have been moving up the skills and value chain to perform more sophisticated tasks in globally integrated production networks, yielding lower-skilled functions to workers in Vietnam and other poorer countries.

The dismantling of global barriers, both political and economic, is a hallmark of the progress achieved in the second half of the 20th century. The economic growth it unleashed is indisputable. Today, increasing numbers of people in a

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diversity of countries depend on this openness. Their livelihoods demand access to imported materials, components, equipment, and foreign investment.

Coming to Terms with Global Economic Reality

The proliferation of transnational supply chains renders trade statistics—import value, export value, the trade balance—rather misleading, if not meaningless. What significance should be attached to the fact that the United States runs a trade deficit with China when Chinese value-added accounts for only about 50 percent of the value of U.S. imports from China?[26] The other half is value-added from other countries. As concluded in a recent OECD study:

> Exports of final goods are no longer an appropriate indicator of the (international) competitiveness of countries, as following the emergence of global value chains, final goods increasingly include a large proportion of intermediate goods that have been imported into the country.[27]

The new interdependence and the global division of labor are described in a recent report from the U.S. Congressional Research Service:

> Trade policy aimed at curbing imports from China, for example, would likely affect Chinese exporters and ancillary sectors, but it also may hit subsidiaries of U.S. companies and manufacturers whose supply chains stretch there. It is not surprising, therefore, that some of the strongest voices both for and against trade protectionism come from American-based manufacturers and service providers.[28]

There are signs that U.S. policymakers are beginning to grasp the concept that the old assumptions are no longer valid. Recognition of that interdependence probably helped ward off a proposed 27.5 percent tariff on all Chinese imports—the so-called Schumer-Graham bill—that had been under consideration in Congress for a several years.

And just as policy intended to benefit one constituency can inflict costs on others, sometimes policy misses its target altogether or has unintended beneficiaries. For example, better access to the Brazilian market for U.S.-based exporters benefits U.S.-headquartered companies but also Stuttgart- or Tokyo-headquartered companies producing and exporting from the United States. Thus, U.S. trade negotiators do the bidding of companies that might not fit every American's definition of an American company. Better access to the U.S. market benefits foreign-based producers as well as U.S. and foreign producers operating in the United States, who rely on access to imported raw materials, components, and capital equipment. Thus, foreign trade negotiators likewise do the bidding of American-based producers by facilitating their access to cheaper inputs.

In light of the proliferation of cross-border investment and transnational supply chains, on whose behalf are national trade policies crafted anyway? That is one of the central questions posed in the aforementioned CRS study:

> A large proportion of international trade is conducted within production networks and chains that cross international borders. How does this affect traditional trade and investment policy that is based on national governments, national economies, and country-to-country relations?[29]

It is encouraging to see these questions raised by a research group that informs U.S. congressional thinking. If the public and the U.S. president are confused about what constitutes a domestic automobile, then surely other policymakers might be confused, too. They might consider reexamining their own prejudices before reflexively supporting status quo policies.

In many ways it is evident that policymakers around the world already understand this. Why

else would average applied tariff rates among World Trade Organization members be so much lower than their bound—or maximum allowable—rates?[30] How else could the last couple of decades have witnessed so much unilateral trade liberalization—trade and other domestic economic reforms without reciprocity from other countries? Australia, New Zealand, China, India, Mexico, Chile, and many other countries undertook significant reforms because the governments reckoned it was in their interest to do so, regardless of what other countries did. Between 1983 and 2003, developing countries slashed their tariffs by two-thirds (from 29.9 percent to 9.3 percent on average) and unilateral reforms accounted for fully two-thirds of those cuts.[31]

During the 10 years ending in 2006, nearly every country reduced its tariff barriers, and only 3 out of 136 countries experienced an increase in overall "trade restrictiveness."[32] Likewise, countries both rich and poor have been rapidly implementing what are known as trade facilitation reforms—measures aimed at reforming and overhauling the administrative and physical procedures associated with the transport of goods and services across borders.[33]

The Southeast Asian nations of Thailand, Laos, and Vietnam recently made good on a 10-year-old effort to better integrate their transportation systems. In the first phase of an agreement that officials hope will help create a "New Asia Silk Road," traffic rights have been extended among the three countries that allow trucks to transit without having to unload cargo at border crossings. The deal is expected to reduce the cost and time of cross-border trade, leading ultimately to more trade and the development of new industries throughout what is still hard-to-access portions of Indochina. Ultimately, the agreement is to include Burma and will establish the only direct land route between the Indian Ocean and the South China Sea.

The fact that governments throughout the developing world are seriously engaged in efforts to reform their customs procedures and upgrade or overhaul their physical trade infrastructure is a rather firm endorsement of the proposition that policymakers know that openness to trade—in both directions—is an economic imperative.

The continued tariff slashing is testament to the imperative of openness, too. In an effort to "reduce business operating costs, attract and retain foreign investment, raise business productivity, and provide consumers a greater variety and better quality of goods and services at competitive prices," the Mexican government initiated a plan in January to unilaterally reduce tariffs on 70 percent of the items on its tariff schedule. Those 8,000 items, comprising 20 different industrial sectors, accounted for about half of all Mexican import value in 2007. When the final phase of the plan is implemented on January 1, 2013, the average industrial tariff rate in Mexico will have fallen from 10.4 percent to 4.3 percent.[34]

Mexico is not alone in the push to continue to liberalize trade. For reasons similar to Mexico's, the Canadian government announced plans to scrap all remaining tariffs on imports of machinery and equipment to help reduce costs at Canadian factories.[35] And since February, the Brazilian government has been suspending or eliminating tariffs on a variety of products in an effort to reduce costs for Brazilian companies relying on imported inputs. Other countries have taken similar actions, but the bulk of media attention has focused on policies reflecting human fallibility and the instinct to overreact in crises.

Old Assumptions Die Hard

Despite the dramatic changes in commercial reality, governments often maintain trade and economic policies that are stubbornly incongruous with these facts of globalization. Policy still tends to reflect an old ideal of the national economic interest. And that ideal—that standard—is still too often conflated with domestic producer interests.

Policymakers too often succumb to the anachronistic, mercantilist view of trade as a zero-sum contest between "our" producers and "their" producers. The belief that we are "winning at trade" when our producers sell more stuff than their producers has never been correct but is particularly ill-informed given the evolution of global business and trade patterns.

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Though domestic producer interests have never been an adequate representation of the broader national economic interest, they are even less representative today, with transnational production and supply chains, foreign direct investment, and the multitude of new economic relationships that play such important roles in international trade. However, trade policy tends to be ignorant of these changes and, in most countries, still maintains a bias toward domestic producers. For evidence of that bias, one needs to look no further than the fact that governments continue to engage in trade negotiations on behalf of producers, where the strategy is to concede as little access to their own markets as possible while gaining the most access possible to other markets.

As the interests of domestic producers are often mistaken for the national interest, so is the number of jobs in the manufacturing sector misperceived as a barometer of the well-being of producers. But employment is a weak and misleading measure of the health of producers. It is the value of output that matters to the producer. It is the value of output that determines the size of the economy. It is not how many workers a producer employs that matters, but really how few, or put differently, how productive each is. If 10 workers are required to produce $1,000 worth of output, then each worker (all things equal) accounts for an average $100 of output and, assuming a simple example, an average $100 of income. But if, through improved techniques that increase labor productivity, five workers can produce that same $1,000 worth of output, not only do incomes rise to $200 for those workers, but there are now five additional workers who are free to add value in some other endeavor. It is the freed-up capacity of those five workers—when applied elsewhere in the economy—that fuels economic growth.

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Mandating jobs through fiat is not a difficult task. But creating value is the real goal. What matters is performance—the ability to provide value at a profit. Government policies that undermine performance, which include policies that are concerned first with job creation, do not help economies grow. The most efficient way to build a dam involves the optimal mix of labor and capital, maybe a few dozen workers and a couple dozen bulldozers. But if the objective is to "create jobs," then a few hundred workers with a few hundred shovels might be preferable. The point is that more jobs do not necessarily mean more economic growth, as inefficient approaches detract from the national welfare by diverting resources from areas that could produce the most value to those where resources cannot be deployed efficiently. And, inefficiency undermines the ability of producers to compete internationally.

Mercantilist negotiating strategies or trade barriers may temporarily benefit some producers, but they invariably hurt consumers, wholesalers, retailers, importers, truck drivers, warehouse operators, designers, engineers, accountants, marketers, financiers, and globally integrated producers who rely on imports and who have great stakes in an open world economy. Policies that benefit one group very often harm another. The past few years are littered with such examples.

U.S. antidumping duties on hot-rolled steel from China have contributed to the fall in U.S. supply and a rise of U.S. prices, which (among other effects) caused U.S. structural pipe producers to be less competitive internationally because hot-rolled steel is the primary material input for U.S. pipe production. Meanwhile, the U.S. restrictions caused the global supply of hot-rolled steel to increase and its price to decline, benefiting pipe producers operating in other countries. Facing these competitive disadvantages, U.S. pipe producers themselves subsequently petitioned for antidumping duties on imports from their competitors. As David Phelps, president of the American Institute for International Steel, describes it:

> We see the pipe case as another example of trade protection against one product negatively affecting another. In the pipe case, the large number of hot rolled sheet cases, including against China, have severely limited US pipe producers' access to competitive internationally priced raw materials. In the last year the price differential between Chinese and US hot rolled sheet approached $300

> per metric ton, putting US producers at a serious competitive disadvantage. AIIS does not believe that more protectionism solves the problems caused by protectionism. In fact, we believe that protectionism for steel mill products has and continues to threaten the health and international competitiveness of steel consumers, who themselves are seeing increased competition from China and other countries who have access to internationally competitively priced steel.[36]

Under the U.S. sugar program, producers of cane and beet sugar are guaranteed by the government a certain price for their commodity. Central to the scheme is a series of tariff rate quotas, which ensure that imports are insufficient to exert any significant downward pressure on prices. As a result of the program, sugar prices in the United States have averaged around twice the world market price for sugar over the last decade. And this "benefit" for a few uncompetitive producers in a few states has sent many companies in the food processing and confectionary industries to Mexico and Canada, where they have access—like their international competitors—to a crucial input at world market prices.

In 2005, millions of women's brassieres, lingerie, and other garments from China sat in confinement in European ports for weeks, pitting Europe's retailers, shippers, and logistics industries against the continent's textile industry. The so-called "bra wars" were the result of the EU government's impositions of restrictions against imported apparel on behalf of Europe's less competitive producers—restrictions that ensnared millions of euros worth of clothing that had already been paid for. The bra wars left retail shelves sparse or empty for weeks and cost retailers a considerable amount of business and consumers fewer choices and higher prices.

These problems are all products of trade policies that consider the interests of domestic producers to be tantamount to the national interest. In a recent trade policy position paper, the U.S. National Retail Federation explained the dangers of conducting trade policy without considering the interests of all links in the supply chain:

> Retailing is also an extremely trade reliant industry that is directly impacted by, and has a considerable stake in the direction and operation of U.S. trade policy. Like other U.S. industries, including manufacturing and agriculture, every retailer, from the largest national chains to the smallest neighborhood shop, depends on a global supply chain to procure the products that American consumers need and want . . . when USTR and other trade agencies have addressed textile and apparel issues, they have focused mainly on accommodating the objectives of U.S. textile manufacturers, while often ignoring the equally important—if not more significant in terms of job impacts—interests of other U.S. industry stakeholders, such as apparel manufacturers, retailer, and importers.[37]

There is an economic interdependence between different interests in different countries that has only been growing over the past few decades. Invariably, restrictions intended to benefit one domestic constituency cause adverse effects elsewhere in the supply chain, often hurting other domestic constituencies.

Barrier Erosion, Not Imposition, Begat Integration and Growth

The second half of the 20th century, and most profoundly the last fifth, is succinctly characterized as a period of barrier erosion. Reduction in trade and investment barriers beginning right after World War II, followed by expansion of those more liberal trading rules to other countries, followed by China's opening to the West, the collapse of the Berlin wall (and, with it, any remaining credibility to communism), and the subsequent outward reorientation of India and other developing countries amounted to an

Restrictions intended to benefit one domestic constituency cause adverse effects elsewhere in the supply chain, often hurting other domestic constituencies.

unprecedented enlargement of the world. And that enlargement was made more apparent by revolutionary changes in communications and transportation. Larger markets meant more customers and greater opportunities for economies of scale. Having more potential customers over whom to spread start-up and then operating costs opened up greater possibilities. And consideration of those potential customers as potential employees or collaborators unleashed massive changes in how and where production and other value-added activities take place.

The elimination of barriers (physical, technological, political, administrative, and psychological) has expanded the pie and delivered tremendous wealth and opportunity over the past several decades, lifting hundreds of millions of people out of abject poverty, while reinforcing the preference for cooperation over conflict. It has been a story about the virtues of barrier erosion and integration. Yet, a popular, almost reflexive response among policymakers to the global recession is to embrace barriers and segmentation. But policies that are good for the economy under normal circumstances—policies that paved the way for unprecedented economic growth—must not be eschewed during tough economic times.

Only a rudimentary understanding of supply and demand is required to see that limiting government procurement to fewer bidders only ensures that taxpayers get less bang for their buck.

Unfortunately, a sort of tribal instinct has played a large role in shaping policy responses to the global recession. One of the more prevalent forms of trade tribalism on display has been protectionism in government procurement markets. Tempted by the ghost of Keynes, many governments embarked on wildly extravagant fiscal expansions in efforts to "stimulate" their economies and "put people back to work." But, in some countries, supposedly to prevent "leakage" of taxpayer funds outside of the domestic economy, legislators imposed buy-local, hire-local, and lend-local rules on the disposition of the funds.

Only a rudimentary understanding of supply and demand is required to see that limiting government procurement to fewer bidders only ensures that taxpayers get less bang for their buck. If there is less competition for every procurement dollar, projects will cost more and suffer from delays and lower quality. Meanwhile, there will be fewer resources to devote more efficiently elsewhere in the economy. If companies that receive funding from the government are precluded from hiring foreign workers—as recipients of TARP money in the United States are restricted from doing—then they are more likely to spend too much on labor and less likely to attain the services of the most qualified candidates. If the government limits certain financial institutions to making loans domestically, as is the case in the United Kingdom, then they will be less capable of spreading risk prudently and accessing potentially lucrative foreign markets, threatening their very viability.

In a "chickens coming home to roost" example of the absurdity of imposing buy-local rules in a globalized economy, consider the following. In the United States, foreign and domestic value-added is so entangled in so many different products that even the Buy American provisions in the recently enacted American Recovery and Reinvestment Act of 2009, struggle to define an American product without conceding the inanity of the objective.

> The Buy American Act restricts the purchase of supplies that are not domestic end products. For manufactured end products, the Buy American Act uses a two-part test to define a domestic end product.
> (1) The article must be manufactured in the United States; and
> (2) The cost of domestic components must exceed 50 percent of the cost of all the components.[38]

The definition itself makes allowance for the fact that a purebred American product is often a mutt. Most of the carbon steel shipped from U.S. rolling mill operations—as finished hot-rolled or cold-rolled steel—is first produced in slab form in places such as Brazil and Russia, and as such is ironically disqualified from use in U.S. government procurement projects for failure to meet the statutory definition of American-made steel. Duferco Farrell, a Pennsylvania company that rolls imported steel slabs into hot-rolled coils for consumption by downstream producers, lost its

most important customer, Wheatland Tube, a steel pipe and tube supplier located just next door to Duferco's plant, because Duferco's supply chain includes a foreign producer of steel slab.[39]

It is tough to muster much sympathy for these particular victims, given the steel industry's longstanding role in the trade restrictions racket. But in this case, as in all other cases of protectionism, unwitting groups are being forced to subsidize the existence of businesses against their will.

The removal of barriers and the subsequent integration of markets were catalysts for the unprecedented global economic expansion of the past several decades. According to what logic, then, do new barriers and segmentation represent the road to recovery?

Optimal Government Policies

The global economy can no longer be characterized as a competition between "us" and "them." Dramatic increases in cross-border investment and the proliferation of transnational production and supply chains have blurred any meaningful distinctions between our producers and their producers. Very often, they are we and we are they, working collaboratively toward the same objectives.

What does this say about the propriety of current trade policies, which are predicated on maximizing benefits for domestic producers? It affirms that policy reform is in order.

Trade policies predicated on the conflation of producer interests and "the national interest" produce frictions throughout supply chains—from product conception to consumption. Policies that do not try to channel incentives for the benefit of specific groups or specific objectives but instead provide the greatest opportunities for citizens to partake of the opportunities afforded by our increasingly integrated global economy are the ones that will maximize economic growth and national welfare.

Producers operating in the United States, whether they are domestic, foreign, or some combination of the two, compete with other producers for U.S. and foreign market share. So do their upstream suppliers and downstream customers. In this competition, policy should be neutral.

The CRS report cited earlier suggests that the old mercantilist approach will no longer do:

> A crucial issue for U.S. policymakers is how to create conditions that make the U.S. economy more attractive as a location for both U.S. parented supply chains and for segments of supply chains of foreign companies.[40]

Rather than predetermine winners and losers, trade policy should aim exclusively to attract human capital and financial investment to the highest value-added activities possible. Of course that implies a considerably diminished role for trade policy, which should be focused exclusively on ensuring openness and predictability with respect to import rules and customs procedures. The rest depends on transparent financial regulations, liberal immigration policies, limited frictions in labor, financial, and goods markets, and respect for and adherence to the rule of law.

Although trade's critics speak of a "race to the bottom," where governments compete for investment by lowering the standards—a concern unsupported by trade and investment flows—it is really more appropriate to speak of a race to the top. Governments are competing for investment and talent, which both tend to flow to jurisdictions where the rule of law is clear and abided; where there is greater certainty to the business and political climate; where the specter of asset expropriation is negligible; where physical and administrative infrastructure is in good shape; where the local work force is productive; where there are limited physical, political, and administrative frictions; and so on. Thus, there is a race to the top, as governments compete to secure for their people the highest value-added rungs possible on the global supply chain.

Over the past couple of centuries, economists have spoken of comparative advantage in the context of industries. In David Ricardo's telling, Portugal had a comparative advantage in wine-

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Today, the factory floor crosses borders and spans oceans, from the idea mills in Silicon Valley to the components producers in Singapore to the assembly operations in Shenzhen to the distribution centers in St. Louis to the shoppers in suburbia.

making and England had a comparative advantage in cloth-making. So each country would focus its productive efforts where they were most efficient, and exchange surpluses, to attain the highest level of output and consumption.

Today comparative advantage can apply to functions in the supply chain. China may have a comparative advantage in electronic assembly operations vis-à-vis the United States today, the United States may have a comparative advantage in product design vis-à-vis Japan, and Japan may have a comparative advantage in component production. Instead of trading wine for cloth, the modern set-up implies a collaboration between U.S. engineers, Japanese manufacturers, and Chinese assemblers—that is, collaboration in the production of Apple iPods and similar products. But as a country's skill sets change—partly as a function of its policies—the people will become relatively more efficient in some endeavors and relatively less efficient in others.

That countries are not destined to remain in their current supply chain rungs, but can ascend or descend the value-chain, as the case may be, should be motivation enough for governments, both rich and poor, and at all stages of development, to adopt the policies that are most likely to provide the greatest and highest valued-added opportunities for their people.

Conclusion

International trade today is no longer a competition between our producers and their producers. It is more appropriately characterized as a competition between entities that increasingly defy national identification. Dramatic increases in cross-border investment and the proliferation of transnational production and supply chains have blurred any meaningful distinctions between our producers and their producers. Very often, they are we and we are they, working collaboratively toward the same objectives.

Understanding this new reality and the process that spawned it must become second nature to policymakers and the public if we are to vanquish, once and for all, the outdated, zero-sum-game characterization upon which rests the argument for protection and insularity. Trade policies predicated on antiquated assumptions—policies designed to serve primarily the aims of certain domestic producers whose interests are too often conflated with the national interest—should yield to policies that reduce frictions throughout supply chains—from product conception to consumption.

Today, the factory floor crosses borders and spans oceans, from the idea mills in Silicon Valley to the components producers in Singapore to the assembly operations in Shenzhen to the distribution centers in St. Louis to the shoppers in suburbia. Under this arrangement, trade barriers are akin to malfunctioning equipment on the assembly line. They raise costs and reduce efficiency in a way that hurts everyone touched by the production and supply chains, including, most profoundly, people in the country imposing barriers.

Despite these lessons, the global recession has caused some governments to indulge in retrograde policies and others to be tempted by them. Policymakers have implemented or flirted with ideas that presume the world is still characterized as "us" versus "them." Their ideas would reintroduce barriers and discount the role that the integration of markets—that supply chains, foreign direct investment, and the collaborations across political boundaries and across skill sets—has played in drastically reducing poverty in poorer countries, creating growth, generating wealth, and boosting living standards across the globe. History reveals that our economic growth is a product of enlarging the pie, but policymakers are still tempted to carve it up.

Policies that do not try to channel incentives for the benefit of specific groups but rather provide the greatest opportunities for citizens to participate most effectively in our increasingly integrated global economy are the ones that will maximize economic growth and national welfare. People in other countries should be thought of more as customers, suppliers, and potential collaborators instead of competitive threats. Policies that attract investment and human capital—rather than seek to advance the interests of import-competing industries exclusively—are

more likely to enable collaboration with complementary work forces through integrated supply chains or foreign direct investment.

Global economic integration has enabled enterprises to flourish on scales unimaginable just a generation ago. Not only should the reimposition of barriers under current economic conditions be eschewed, but a firm commitment to bring trade and investment policy up to speed with 21st century commercial reality would be a wise investment in the future.

Notes

1. *The Death of Distance: How the Communications Revolution is Changing Our Lives* is the title of a 1997 book written by Frances Cairncross about the impact of the revolutions in communication and transportation on globalization.

2. Matthew J. Slaughter, "What Is an 'American' Car?" *Wall Street Journal*, May 7, 2009.

3. Under pressure from the United Autoworkers Union and the Obama administration (which controls GM's board of directors), GM abandoned plans to import small cars to give scope to manufacturing facilities in the United States. For details, see Henry Payne, "Will Small Be Beautiful for GM?" *Wall Street Journal*, July 18, 2009, http://online.wsj.com/article/SB124786970963060453.html.

4. For the record, the empirical evidence supports a positive relationship between the growth of a company's foreign operations and the growth of its domestic operations. Following is an excerpt from Daniel T. Griswold, *Mad about Trade* (Washington: Cato Institute, 2009), p. 100: "Investing abroad is not about 'shipping jobs overseas.' There is no evidence that expanding employment at U.S.-owned affiliates comes at the expense of overall employment by parent companies back home in the United States. In fact, the evidence and experience of U.S. multinational companies points in the opposite direction: Foreign and domestic operations tend to compliment each other and expand together. A successful company operating in a favorable business climate will tend to expand employment at both its domestic and overseas operations. More activity and sales abroad usually require more managers, accountants, lawyers, engineers, and production workers at the parent company."

5. Slaughter.

6. Joseph B. White, "What Is an American Car?" *Wall Street Journal*, January 26, 2009.

7. United States Steel Corporation, 2008 Annual Report, p. 8, http://www.uss.com/corp/proxy/documents/2008_annual_report-v2.pdf.

8. Bureau of Economic Analysis, Foreign Direct Investment in the United States, http://www.bea.gov/international/xls/LongIndustry.xls.

9. Organization for International Investment, "Despite Economy, 2008 Sets Record for Foreign Investment," press release, March 18, 2009. Greenfield projects include construction of new factories, warehouses, buildings, or facilities from scratch on previously undeveloped land.

10. Thomas Anderson, "U.S. Affiliates of Foreign Companies, Operations in 2006," *Survey of Current Business*, August 2008, p. 186.

11. Bureau of Economic Analysis.

12. Samuel J. Palmisano, "The Globally Integrated Enterprise," *Foreign Affairs* 85, no. 3 (May/June 2006): 129.

13. World Trade Organization, *World Trade Report 2008*, p. xviii.

14. Ibid., p. 102.

15. Norihiku Yamano and Nadim Ahmad, *The OECD Input-Output Database: 2006 Edition*, STI Working Paper 2006/08, http://www.oecd.org/datoecd/46/54/37585924.pdf.

16. Author's calculation based on data in Yamano and Ahmad, Annex 1.

17. World Trade Organization, p. 103.

18. Yamano and Ahmad.

19. Author's calculations based on Table 12, World Trade Organization, p. 104.

20. Ibid.

21. Ibid.

22. David Hummels, Dana Rapoport, and Kei-Mu Yi, "Vertical Specialization and the Changing Nature of World Trade," *FRBNY Economic Policy Review*, June 1998.

23. David Hummels, Jun Ishii, and Kei-Mu Yi, "The Nature and Growth of Vertical Specialization in World Trade," Federal Reserve Bank of New York, *Staff Report*, March 1999.

24. Greg Linden, Kenneth L. Kraemer, and Jason Dietrick, "Who Captures Value in the Global Innovation System? The Case of Apple's iPod," Personal Computing Industry Center, University of California, Irvine, June 2007.

25. James Fallows, "China Makes, the World Takes," the *Atlantic*, July/August 2007, http://www.theatlantic.com/doc/200707/shenzhen.

26. Robert Koopman, Zhi Wang, and Shang-jin Wei, "How Much of Chinese Exports Is Really Made in China? Assessing Foreign and Domestic Value-Added in Gross Exports," U.S. International Trade Commission, Office of Economics, Working Paper no. 2008-03-B, March 2008. The authors' methodology for determining the Chinese content of Chinese exports yields a much higher figure than Hummels because they set out the capture the effect of "export processing," where imports are made exclusively for production for export, which was ignored by Hummels, but constitutes a large portion of Chinese trade.

27. See http://www.oecd.org/dataoecd/41/18/39936529.pdf, p. 6.

28. Dick K. Nanto, "Globalized Supply Chains and U.S. Policy," CRS Report for Congress, Congressional Research Service, January 16, 2009, p. 8.

29. Ibid, p. 2.

30. See World Trade Organization, *World Tariff Profiles 2008* (Geneva, 2009). For example, India's average bound rate is 50.2%, but its average applied rate is 14.5%; Ghana's average bound rate is 92.5%, but its average applied rate is 13.0%.

31. World Bank, "Global Economic Prospects: Trade, Regionalism, and Development," 2005, p. 42.

32. *World Trade Indicators 2007: Global Trade Policies and Outcomes* (Washington: IBRD/World Bank, 2007), p. 3.

33. For a detailed analysis of trade facilitation, see Daniel Ikenson, "While Doha Sleeps: Securing Economic Growth through Trade Facilitation," Cato Institute Trade Policy Analysis no. 37, June 17, 2008.

34. Government of Mexico, Economic Secretary, "Mexico Launches a Phase Down Plan to Reduce Import Rates," *NAFTA Works (A Monthly Newsletter of NAFTA and Related Issues)*, http://www.naftamexico.net/naftaworks/nw2009/Jan09.pdf.

35. James Pethokoukis, "Canada to Scrap Tariffs to Help Factories," Reuters, http://www.reuters.com/article/marketsNews/idUSTST0000220090917.

36. "More Trade Protection for Steel Threatens Consumers," American Institute for International Steel, July 7, 2007, http://www.aiis.org/index.php?tg=articles&idx=Articles&topics=19.

37. Erik O. Autor, Vice President, International Trade Counsel, National Retail Federation (Letter to U.S. President Barak Obama, March 26, 2009).

38. *Federal Acquisition Regulations*, Subpart 25.1—Buy American Act—Supplies, Provison 25.101(a), http://www.acquisition.gov/far/current/html/Subpart%2025_1.html.

39. The Buy American provision requires that all steel used in procurement projects be made and melted in the United States, and neither Brazil nor Russia is exempted from those restrictions under international treaty. See http://www.sharon-herald.com/local/local_story_135222256.html for more detail.

40. Nanto, p. 2.

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