

No Longer Us versus Them

Trade Policy for the 21st Century

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International Policy Network



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Executive summary

The removal of political and technological barriers to trade over the past two decades has had huge ramifications. In the new globalised economy, a product might be designed by teams in the USA and India, have components produced in Thailand, Poland and Mexico, while final assembly takes place in China, from where it is distributed to millions of consumers around the world. The benefits, equally widespread, include: better, less expensive products, more rewarding and higher paying jobs, and economic growth.

But anti-trade activists (wearing shoes designed in Seattle and made in the Philippines) use cell phones (designed in Finland and made in Taiwan) to upload press releases to the Internet, calling for restrictions on trade. Unions meanwhile call for “British jobs for British workers.” If politicians heed these calls, they not only raise the cost of doing business in their economy, they undermine the whole global production process, driving up the cost of goods and services, depriving us of innovations, and generally undermining the process of development through voluntary exchange.

That is why “Buy American” and the many other “protectionist” measures introduced in the wake of the financial crisis are counterproductive. As with similar measures introduced in previous recessions, they will deepen and prolong the current crisis. Governments that indulge in such protectionism, restricting the flow of trade, investment, and human capital will find their economies – and opportunities for their citizens – falling behind those countries where policies are more amenable to the realities and opportunities of today’s globalised world economy.

Global economic integration has enabled enterprises to flourish on scales unimaginable just a generation ago. The re-imposition of barriers would be a huge mistake

and should be eschewed. Instead, trade and investment policy should be brought up to speed with 21st century commercial reality. To nurture the promise of our highly integrated global economy, governments should commit to policies that reduce frictions in the flow of goods, services, investment, and human capital. Such policies would make sense under normal circumstances but are even more important during the tough times we face.

No Longer Us versus Them

Introduction

During the past few decades, a division of labour on a truly global scale has emerged, presenting opportunities for specialisation, collaboration, and free exchange that might have astounded even Adam Smith – and which certainly reaffirms his insights. 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 produced a highly integrated global economy with vast potential to produce greater wealth and higher living standards.

A new paradigm has emerged, called “The Death of Distance,” under which workers in both wealthier and poorer countries are more likely to be co-workers than competitors. “We” and “They” often collaborate in the same endeavor, to our mutual benefit. 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 minimise regulations or administrative frictions that are based on misconceptions about some vague or ill-defined “national interest.”

There have been signs in recent years that policymakers are beginning to grasp the new reality. “Autonomous” or “unilateral” liberalisation of trade barriers has accounted for the majority of trade liberalisation in developing countries over the past two decades and, on average,

“applied” tariff rates globally are well below their maximum allowable “bound” rates under World Trade Organisation agreements. Policymakers seem to have developed an appreciation of the benefits of economic liberalisation or have at least grown more abashed about seeking protectionist exceptions.

However, the financial crisis and subsequent global recession are testing the depth of that understanding. Shuttering businesses, rising unemployment, and other signs of recession have caused some governments to turn to policies better left in the past. Some governments have created new trade barriers or deepened existing ones: tariffs have been ratcheted up in some countries, domestic champions have been subsidised in others, and local-lending or hiring quotas have been imposed across

a variety of industries in several countries. The World Bank estimates that nearly 90 new restrictions on trade have been implemented since October 2008 and 17 of the countries in the G-20 have implemented some type of trade protectionism since November 2008. Perhaps most significantly, protectionism has begun restricting

competition in government procurement markets. It started with Buy American provisions in the United States, and like swine flu has jumped borders to Canada, China, the Philippines, and Australia.

This paper seeks to put these measures into the context of the new realities of global supply chains. It begins with a discussion of the nature of such supply chains and the implications for the concept of “national” production. Various examples are given of products and companies for which supply chains have become

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internationalised. It then seeks to reassess various concepts that are often used in discussions of trade and investment, such as “the trade deficit,” “the race to the bottom” and “comparative advantage.” Finally, some policy implications are adduced.

What makes an “American” car?

The demise 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 opinion-editorial, tried to find some answers:

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.¹

However, GM’s original announcement that its revitalisation plans included shifting more production to Mexico and China drew incredulous, angry reactions from American labour unions, their patrons in Congress, and media pundits.² For those who object to GM’s plans,

it is not the company’s home address that matters, but rather the company’s capacity to create U.S. jobs and stimulate U.S. economic activity. In zero-sum fashion, they see investment in foreign operations as antithetical to domestic job creation and economic growth.³

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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 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.⁴

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 criticise “insourcing” for shipping profits or control of U.S.-based assets abroad.

Even though the top-ten 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 (of a very similar title):

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.⁵

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 modern automobile industry transcends national boundaries and is just 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.

Production in defiance of national identification

Dell is a well known American brand and Nokia a popular Finnish brand, but neither makes its products in the "home country." Some components of products bearing the logos of these internationally recognised brands might be produced in the United States or Finland, respectively. But with much greater frequency nowadays, component production and assembly operations are performed in different locations across the global factory floor. As IBM's chief executive officer put it: "State borders define less and less the boundaries of corporate thinking or practice."⁶ Take one of IBM's emerging competitors, Lenovo, as an example. Lenovo began life as an entirely Chinese entity, but now its research centres, manufacturing bases and even company headquarters are based in many different countries. Its executive headquarters are located in

Beijing, Singapore and in Morrisville, North Carolina. The company operates research centres in China, the United States and Japan, while its manufacturing and assembly processes span three continents, taking place in China, India, Mexico and Poland. Lenovo's operations are increasingly common and shared by many in the computer industry. Dell, one of Lenovo's biggest competitors, was one of the firms that pioneered the just-in-time supply chain that connected an assembly line across many different countries. To call Lenovo "Chinese", or to call Dell "American" misses the point that these companies are now truly global entities, which employ workers and pay taxes in dozens of countries and sell their products in hundreds more.

These inescapable realities carry profound implications for the substance and conduct of national trade and economic policy. What is the purpose and who are the intended beneficiaries of policy when there is no agreement about the definition of a domestic company? The distinction between what is and what isn't American or Finnish or Chinese or Indian has been blurred by foreign direct investment, cross-ownership, equity tie-ins, and transnational supply chains.

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.

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.⁷*

The definition itself makes allowance for the fact that a purebred American product is in fact a curious breed. Even the "DNA" of the U.S. steel industry, one of the most active groups that pushed for highly-restrictive Buy American provisions and continues to be one of the manufacturing sector's most vocal proponent of trade barriers, is difficult to decipher nowadays. The largest U.S. producer of steel is the majority Indian-owned

company Arcelor-Mittal, a company that is headquartered in Luxembourg and Hong Kong, and listed on stock exchanges in Paris, Amsterdam, Brussels, Luxembourg, four separate exchanges in Spain, and in New York.

The largest “German” producer, Thyssen-Krupp, a conglomerate that owns 670 companies worldwide, 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. And most of the carbon steel shipped from U.S. rolling mills – as finished hot-rolled or cold-rolled steel – is produced in places such as Brazil and Russia, and as such is disqualified from use in U.S. government procurement projects for failure to meet the statutory definition of American-made steel.⁸

A generation ago the cost of a product bearing the logo of an American or Japanese or German company might have comprised exclusively domestic labour, materials, and overhead. Today that is much less likely to be the case, regardless of location of the company’s headquarters or the country affiliated most closely with the brand. A 2008 World Trade Organisation report explains the pattern as follows:

“A generation ago the cost of a product bearing the logo of an American or Japanese or German company might have comprised exclusively domestic labour, materials, and overhead. Today that is much less likely to be the case, regardless of location of the company’s headquarters or the country affiliated most closely with the brand.”

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.⁹

Trade in intermediate goods related to “fragmentation of production”, “vertical specialisation” or “offshoring” – terms given to the inexorable expansion of the factory floor across borders and oceans in response to falling costs and expanding markets – has grown faster than trade in final goods during the past two decades. Offshoring continues to grow among countries large and small and across the globe¹⁰

Economists generally rely on trade data, input-output tables, and firm-level surveys to study trends in offshoring. Though the literature describes different

analytical approaches to measuring offshoring – each with its own strengths and weaknesses – the consensus from each approach is that the phenomenon continues to grow among countries large and small and across the globe.

The Organisation for Economic Cooperation and Development (OECD) 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).¹¹ The median ratio for goods offshoring increased from 17.9 percent to 22.5 percent between the two periods.¹²

Under the metric just described, smaller economies – which tend to specialise in fewer activities and rely more extensively on imported materials and components – show a relatively 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 goods offshoring countries by this metric are all relatively small: Ireland (70.6%), Hungary (63.2%), Belgium (57.0%), Slovak Republic (54.4%), and Austria (52.7%).¹³ And the bottom five are much bigger: Japan (7.2%), Brazil (10.5%), China (12.6%), India (12.7%), and the United States (17.8%).¹⁴

A high value of imported inputs to total inputs suggests that a country is dependent upon imports for production, but does not give much indication about where the supply chain goes after that. An alternative formulation that may be a more useful measure of the degree of integration would consider the use of imported inputs used in domestic production that is *exported*. A high value of imported inputs contained in exports would suggest that producers in that country rely on foreigners for inputs, whose output is, in turn, relied upon by producers or consumers abroad.¹⁵

Under this formulation, the median degree of vertical specialisation is higher, and it increased from 26.3 percent in 1995 to 29.9 percent in 2000.¹⁶ The top five goods offshoring countries are still relatively small countries under this metric, but some of the larger countries, on account of the value of exports, escaped the lowest five. The United States increased from 12.3 percent in 1995 to 15.1 percent in 2000, and China increased during the period from 16.6 percent to 21.0 percent.¹⁷ One other highlight from this dataset is that the ratio of exports to output increased an average of 7.3 percent between 1995 and 2000, and more than half of that increase (53.1%) was attributable to vertical specialisation.¹⁸

Interpreting the statistics and trends, the growth in trade during this period was not of different countries exchanging finished goods, but mostly of producers in different countries acquiring intermediate goods from producers in other countries, adding value and other imported inputs to those products, and then moving the product further down the supply chain.

David Hummels, who has been studying the topic since the 1990s, estimates that this vertical specialisation grew by as much as 40 percent in the last quarter of the twentieth century.¹⁹ He explains the reason for that growth, as follows:

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.²⁰

Hummels’ estimate of a 40 per cent expansion of vertical integration might be too conservative. OECD data suggests the import components of exports in a selection

of both wealthy and emerging economies expanded by 25 per cent just between 1995 and 2005. The data also

illustrates how many emerging economies – not just China – are becoming increasingly involved in global production patterns, helping to garner investments, technology transfer and to create local jobs which are ultimately the ingredients economies need to move up the value chain to promote economic development.

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From the death of distance rises the global factory floor

This evolution from centralised production under one roof toward disaggregated production in different locations across the globe has been driven by revolutionary changes in information, communications, and transportation technologies, as well as by seismic political upheavals, and the persistent liberalisation of trade, investment, and regulatory regimes around the world.

The revolution in information and communications technology is something with which most people can identify. The simultaneous increase in sophistication and

reduction in the cost of global communications has contributed to the realisation of a truly global factory floor. Suffice it to say that a far-flung enterprise is unlikely to succeed without powerful, reliable communications, the cost of which is no longer prohibitive in more and more cases.

The time required to export and import products has always been a significant barrier to trade. Time is a function of distance, mode of transportation, type of product,

administrative procedures, logistical delays and so on. A faster process is a lower trade barrier. Between 1950 and 1998, the average shipping time to the United States declined from 40 to 10 days.²¹

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Another feature of time and distance that represents a trade cost is unpredictability. If customers require delivery of products by a certain date, or if the product is an input to a “just-in-time” production-supply chain, then the cost of unpredictability and variability in delivery times can be very high – exceedingly high in some cases. The advent and proliferation of containerised shipping has reduced transportation time and costs by standardising loading and unloading procedures, and eliminating the need to repack cargo as it is transferred from truck or rail to ship, and vice versa. The reform and streamlining of customs procedures in many countries has reduced transit times, as well. And the ten-fold decline in air shipping rates since 1950 has enabled traders to take advantage of the lower cost of speed to market, and to hedge against the uncertainty associated with longer ocean freight times by transporting some product by air.²²

Despite these revolutionary improvements in communications and transportation, the explosion in transnational production and foreign direct investment might have not occurred without the opening of China to the West in 1979 and the fall of the Berlin Wall ten years later. Those events not only increased the size and potential size of markets by linking unprecedented numbers of people, but they also ushered in the realisation that there were no legitimate alternatives to capitalism. Accordingly, countries around the world began to abandon long-held policies of import substitution and started to liberalise their investment regimes during this time.

The primary and secondary effects of the disintegration of political barriers and the softening of ideological dogma might deserve the most credit for reorienting methods of production and supply. After all, as MIT Professor Suzanne Berger noted in her detailed 2006 book *How We Compete*:

Between 1870 and 1914, levels of capital mobility, trade, and immigration among the countries of the North Atlantic region were by some measures even higher than those today...The major drivers of this “first wave” of

globalisation were technological innovations which drastically speeded up transportation and communication and reduced cost. At the time of the American Revolution, it took Benjamin Franklin forty-two days to travel to France. By 1912, he could have made the trip in five and a half days. In 1815, the English branch of the Rothschild bankers used carrier pigeons to learn the outcome of the Battle of Waterloo, an information coup that allowed them to earn a fortune on English markets. Before the laying of the transatlantic cable in the 1860s, stock market prices took three weeks to travel between London and New York City, but by 1914, telegraph and telephone linked the major financial centers of the world, making communication almost as fast as it is in our Internet Age.²³

Yet, despite these advances, transnational production and foreign direct investment didn’t take off during that period. The

global market during the first wave of globalisation was considerably smaller. What is evident in this latest wave of globalisation, according to World Bank economist David Dollar, “is that the majority of the developing world (measured in terms of population) has shifted from an inward-focused strategy to a more outward-oriented one.”²⁴

That is not to say that international fragmentation of production didn’t start until after 1989. IKEA was already producing furniture in Poland in the 1970s. In the 1980s, Swissair outsourced its accounting functions and the City of London its computer maintenance services to India.²⁵ The same was true of a growing number of companies in the consumer electronics industry. But in the last two decades, the trend has picked up and intensified, moving into previously closed economies in East Asia and Eastern Europe.²⁶

This trend is nowhere more visible than in the iPod, which provides the quintessential model of transnational production in the 21st century. According to the inscription on its underside, every iPod is “Designed by Apple in California; Assembled in China.” 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 components 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 labour) 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. and a few components producers from other countries all 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.²⁷

The capture of value in the iPod production chain is fairly typical for Western brands. James Fallows characterises 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

“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.”

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.²⁸

One implication is that Chinese and American labour is complementary in this process. Without the division of labour, ideas hatched in American laboratories by high-skilled, high-wage American engineers would be less likely to materialise into ubiquitous consumer products because they would be too expensive to make and sell for mass consumption. Without the division of labour, 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 specialisation were not possible. The arrangement also provides a conduit for technology transfer and skills acquisition that helps raise productivity levels and standards of living in China. As is described in greater detail below, 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.

Old policy presumptions die hard

The proliferation of transnational supply chains renders traditional, nation-based 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?²⁹ 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.³⁰

Despite these dramatic changes in commercial reality, policymakers around the world still embrace an 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 than their producers has never been correct, but is particularly ill-informed today given the evolution of global business and current trade patterns.

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 diversity of countries depend on this openness. Their livelihoods demand access to imported materials, components, equipment, and foreign investment. Yet, governments still maintain too many trade and economic policies that are stubbornly incongruous with the realities of globalisation. Policy still tends to reflect an old ideal that the national interest and domestic producer interests are the same thing.

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For evidence of the bias toward domestic producers, 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, while gaining the most access possible to other markets.

As the interests of domestic producers are often mistaken with 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 ten 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 labour 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.

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. Creating jobs through fiat is not a difficult task. But creating value is the real goal. The most efficient way to build a dam involves the optimal mix of labour and capital, maybe a few workers and a couple bulldozers. But if the objective is to “create jobs,” then 100 workers and 100 shovels might be preferable. The point is that more jobs do not necessarily mean more

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economic growth, as inefficient approaches – for example, policies that divert trade flows away from foreign commerce – 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 in turn 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 obstruct the flow of trade to 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.³¹

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 chased away many companies in the food processing and confectionery 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 the Europe’s less competitive producers – restrictions which ensnared millions of euros worth of clothing that had already been paid for, but which left retail shelves sparse or empty for weeks and cost retailers a considerable amount of business and consumers fewer choices and higher prices.

In a recent trade policy position paper, the U.S. National Retail Federation (NRF) 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, retailers, and importers.³²

There is an economic interdependence between different interests in different countries that has only intensified over the past few decades. Invariably, restrictions intended to benefit one domestic constituency lead to adverse effects on every other collaborating producer within that supply chain, and can hurt other domestic constituencies too.

Coming to terms with global economic reality?

There are signs, though, that policymakers are beginning to understand that the old assumptions and premises about “our producers” vs “their producers” are no longer valid. The new interdependence and the global division of labour are described in a recent report from the U.S. Congressional Research Service (CRS, more or less the think tank of the U.S. Congress):

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.³³

“Invariably, restrictions intended to benefit one domestic constituency lead to adverse effects on every other collaborating producer within that supply chain, and can hurt other domestic constituencies too.”

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 European Union-based exporters benefits EU-headquartered companies as well as New York- or Tokyo-headquartered companies producing and exporting from Europe. Thus, EU trade negotiators do the bidding of companies that might not fit the common European definition of what

constitutes a European company. Better access to the EU market benefits foreign-based producers as well as EU and foreign producers operating in the EU, who rely on access to imported raw materials, components, and capital equipment. Thus, foreign trade negotiators likewise do the bidding of European-

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?³⁴

It is encouraging to see these questions raised by a research group that informs American Congressional thinking. If the public and the U.S. president are confused about what constitutes an American automobile, then surely other policymakers might also be confused

about the definition and meaning of a domestic producer. They might even consider reexamining their own prejudices before reflexively endorsing policies that shun trade to protect these domestic champions. The CRS report acknowledges that the old 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.³⁵

In many ways it is evident that policymakers around the world already understand this. How else could the last couple of decades have witnessed so much unilateral trade liberalisation – 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 understood it was in their interest to do so, regardless of what other countries did. Between 1983 and 2003, developing countries reduced their weighted average tariffs by almost 21 percentage points (from 29.9 percent to 9.3 percent) and unilateral reforms accounted for fully two-thirds of those cuts.³⁶ Nearly every country reduced its tariff barriers over the last decade and only 3 out of 136 countries experienced an increase in overall “trade restrictiveness.”³⁷ 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.³⁸

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 Indo-China. 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 firm endorsement of the proposition that policymakers know that openness to trade – in both directions – is an economic imperative.

The continued slashing of trade barriers 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.³⁹

Mexico is not alone in the push to continue to liberalise trade. On February 27, a new free trade agreement was signed between Australia, New Zealand, and the 10 member countries of the Association of Southeast Asian Nations to reduce and ultimately eliminate tariffs on 96 percent of all goods by 2020. Meanwhile, 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

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media attention has focused on policies reflecting human fallibility and the instinct to overreact in crises.

The race to the top

Some of trade's critics point to a "race to the bottom," claiming that governments lower their environmental, labour, and other standards to attract investment. But the overwhelming evidence is that most direct investment flows to countries 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.

So, really, the opposite is true. There is a race to the top, as governments compete, not only for markets and investment, but fundamentally to secure for their people the highest value-added rungs possible on the global supply chain. To the extent that governments should play any role in creating an environment that produces the most or the best economic opportunities, the proper approach is one that attracts investment in the highest-skilled activities for which their people qualify. And those policies are the ones that encourage people to value education and to continue to acquire skills so that the qualities in a locality that investors seek can be found in their countries.

Governments should stop negotiating on behalf of their producers for access abroad or to limit access of foreign producers at home. That approach hurts other domestic links in the supply chain, and the reality is that globalisation has been making this old adversarial framework obsolete. The focus should be entirely on removing barriers and reducing the frictions that discourage investment and more meaningful integration into the global economy. To compete

successfully for investment now and into the future, governments will need to have business and regulatory environments that can accommodate the fast-moving nature of global, just-in-time, transnational production processes.

Comparative advantage in a modern context

Over the past couple of centuries, economists have spoken of comparative advantage in the context of industries. David Ricardo discussed Portugal's comparative advantage in winemaking and England's comparative advantage in cloth-making. Even he would be

struck by how his insights have played out in practice. Ricardo's theories on comparative advantage are still relevant but they may be more applicable to specific functions within supply chains than entire industries.

China may have a comparative advantage in electronic assembly operations vis-à-vis the United States today and the United States may have a comparative advantage in product design vis-à-vis Japan. But as people's skill sets and technology evolve over time, economies will become relatively more efficient in some endeavors and relatively less efficient in others. Like people, countries are not destined to remain in their current supply chain rungs, but can ascend or descend

the value-chain. That is both an opportunity and a danger, and should be motivation enough for governments to adopt policies that lead upward. Through the right mix of policies, poorer countries can ascend the value chain, while short-sighted, insular policies can cause countries rich or poor to descend.

Through liberalisation, governments create opportunities for domestic producers to serve niches within global supply chains in the areas where current comparative advantages permit. By filling these niches within much larger supply chains, local producers benefit from the import of knowledge, learning best

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practices, adopting modern technology, and creating further know-how in their turn, while economies as a whole benefit from the creation of relatively high value-added jobs, investment, economic diversification and growth. Through this process of development, the comparative advantages within economies evolve, and will see domestic producers moving into higher value-added activities, which generates more wealth for the local economy and better jobs for the local workforce.

While most contemporary trade-related studies concentrate heavily on the role of China, there are many other countries that have opened up to international competition. In these instances, domestic producers have identified niche areas, and most importantly, the local economy has reaped the benefits of higher value-added activities relatively quickly. We now consider briefly some examples of such countries.

Cambodia

Cambodia's garment industry illustrates how weak economies can benefit from the opportunities created through open trade. Agreements in the European Union and the United States that provided duty-free access for garments manufactured in Cambodia stimulated a massive wave of investment from companies based across Asia in the 1990s, rapidly making the textile industry one of the most prominent sources of economic activity. However, the industry faced significant pressure from other low-cost producers based elsewhere, and thus created a niche for itself by guaranteeing to potential customers that Cambodian producers would maintain relatively high labour standards and allow regular inspections from the International Labour Union and an active role for local labour unions.

The effort to create a comparative advantage paid off handsomely from the outset of the industry, as duty free access generated a significant amount of foreign investment into Cambodia. Since 1997, the Cambodian garment industry has attracted investments worth well

over \$300 million and in spite of the original trade agreements with the EU and the United States having expired in 2005 it continued to grow – and maintained its emphasis on relatively high labour standards. The industry employs well over 350,000 local workers and its products account for over 80 per cent of the economy's

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exports. While competition from China – particularly at the lower end of the market – has proven fierce, Cambodia's producers have proven competitive enough to carve out a sizeable \$1.5 billion chunk of the \$400 billion global market in textiles. According to Roland Eng, a Cambodian Diplomat, “The labour program in the textile industry is more important to Cambodia than any other development program because we know the wages go

directly to Cambodian workers and raise their standard of living.”⁴⁰

Slovakia

As late as 1998 Slovakia was the proverbial sick man in a stagnating region, but a new government imposed sweeping reforms that opened the economy's resources to international supply chains. Local producers slowly began to market themselves as entrepreneurial and fully able to benefit from the country's location at the heart of an emerging region.

The government concentrated on removing obstacles to business, and investors began to pour in, hoping to gain a foothold in the region. In “Reformology”, Katarína Mathernová and Juraj Renčko describe how:

by May 2004, [Slovakia] had consolidated its democracy, successfully implemented reforms, become a member of the EU, and achieved a growth rate and a flat-tax regime that were the envy of its neighbors. It also proved to be a magnet for investors, attracting high levels of foreign direct investment. World Bank's Doing Business 2005, which analyzes the investment climate and compares indicators across 180 countries, ranks Slovakia as the top reformer on a global basis. It points to the number, extent, and depth of the difficult and politically

controversial reforms that took place in the country during a relatively short period of time, putting it, along with Lithuania, in the top 20 countries worldwide in terms of favourable investment climate.

Opening up to international trade and bolstering the domestic business environment has helped Slovakia's once beleaguered producers to become partners with some of the world's most innovative firms, in a wide range of industries. The firms who now operate factories in Slovakia, hire local workers, collaborate with and transfer technology to local firms, and pay Slovakian taxes range from relatively low-value added businesses to some of the key players in the global knowledge-based economy. Auto-producers such as Volkswagen and Skoda have created new automobile manufacturing sites and continue to invest in Slovakian assembly and production. A U.S. steel company invested in what has become the second largest steel mill in Eastern Europe, boosting the Pittsburgh-based company's output by a third. Companies such as Siemens and Motorola have established production centres across the country, creating local manufacturing jobs, but also establishing sales outlets to exploit the Eastern European market. Slovaks have also benefited from much higher value-added activities, thanks to significant investments by Belgium-based Solvay and U.S.-based Bristol Meyers Squibb.⁴¹

In just over a decade, Slovakia's economy has turned itself around, thanks to the 1998 reforms and the country's continued efforts to integrate the local economy with the rest of the world. Crucially, the benefits from reforms have also paid off in other areas, with rates of poverty (11 per cent) well below the average for the European Union (16 per cent). GDP growth has accelerated from 3.7 per cent in 2002 to 6.4 per cent in 2008, peaking at over 8 per cent in 2006.

Mauritius

A third example is Mauritius, which less than a generation ago was home to an unproductive and closed

economy that was almost entirely dependent on just one crop: sugar. Reforms that began in 1982 opened up the economy to significantly more foreign investment, while the government reduced the administrative and logistical burdens associated with doing business on the island. Thanks to these policies, the Mauritian

Government has in a short time overseen a dramatic change in Mauritius' fortunes. This isolated island in the middle of the Indian Ocean is now home to a booming financial services industry, a successful tourism industry and, perhaps most notably, a successful textiles sector that, like its competitors in Cambodia, has

managed to succeed amidst low-priced competition from other countries.

According to Rama Sithanen, Deputy Prime Minister, growth in the Mauritian economy could not have come about without opening up to trade and allowing local entrepreneurs to fit into supply chains: "We realised that it's difficult for us to compete in the "high volume-low value" textile and garment market. Therefore we have gone for specific niche areas where there is high value addition. You need to be creative in terms of design and be able to respond very fast to the needs of the market."⁴²

The only way, according to Sithanen, to be flexible enough is to open up to trade, which provides the best opportunities for local entrepreneurs to discover ways to fit into constantly evolving supply chains.

"We have embraced a very open economy for a very long time. It's an export orientated economy. We have strong institutions that promote economic development, a strong private sector and also institutions to fight corruption and fraud. That is extremely important ... We have integrated vertically the sector. Instead of having only an apparel industry we are investing vertically in spinning, weaving, dyeing and finishing so that the raw materials are physically present in Mauritius. We import cotton only and then we add value to the cotton and we make the industry vertically integrated. What we have really done is consolidation into much bigger industries to reduce costs of production.

According to the International Monetary Fund, Mauritius's success can be attributed to "its openness to foreign direct investment, facilitated by the creation of the export-processing zone," which has been a "resounding success" and "transformed the Mauritian economy." An IMF report estimates that "Since 1982, output has grown by 19 percent a year, on average, employment by 24 percent, and exports by 11 percent. The export-processing zone accounts for 26 percent of GDP, 36 percent of employment, 19 percent of capital stock, and 66 percent of exports. During 1983–99, total factor productivity growth in the export-processing zone averaged about 3.5 percent a year, compared with 1.4 percent in the economy as a whole. In the 1990s, productivity growth in the export-processing zone was remarkable, averaging 5.4 percent a year."⁴³

By reducing frictions in the flow of goods, services, capital and people, the examples of Slovakia, Cambodia, and Mauritius illustrate how businesses in any country can quickly discover innovative ways to join international supply chains and carve out niches for themselves that facilitate growth and development. Given the opportunity to identify these niches, businesses gradually become more productive, and then move up the value-added chain.

A decade ago, China was slowly developing its oft-cited "Factory Asia" reputation. But through collaborations with international supply chains, Chinese producers have acquired modern technology and adopted better production processes, and as a result are beginning to shed this moniker. Rather than being just a hub for the assembly of intermediate goods, some innovative Chinese-based companies such as Lenovo (see above), Srinovac Biotech Ltd., and Huawei have quickly become globally competitive firms, with complicated supply chains of their own.

The international flow of trade that has been unleashed over the past quarter century has the potential to be truly transformative. The right reforms have stimulated development in Cambodia, Mauritius, Slovakia and many other countries, including the United States.

"We realised that it's difficult for us to compete in the "high volume-low value" textile and garment market. Therefore we have gone for specific niche areas where there is high value addition. You need to be creative in terms of design and be able to respond very fast to the needs of the market – Rama Sithanen, Deputy Prime Minister, Mauritius."

Matthew Adley and Gary Claude Hufbauer of the Peterson Institute for International Economics have illustrated how tariff and non-tariff barrier liberalisation was responsible for a full quarter of the growth in trade in the United States between 1980 and 2006.⁴⁴

Implementing reforms that integrate domestic producers into global supply chains for the first time is as important as ensuring the most globally-integrated industries are not handicapped by trade restraints that would interrupt the flow of goods and services and thus retard growth.

Conclusion: economic crises are not the time to unlearn

The second half of the 20th century, and most profoundly the last fifth, is succinctly characterised as a period of barrier erosion. The reduction in trade and investment barriers beginning right after World War II, followed by the 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 turn of India and other developing countries amounted to an 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 business 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.

Thanks to these changing dynamic geo-political and economic dynamics, international commerce is now no longer a contest between national producers, but is more appropriately characterised as a competition between different supply chains, many of which comprise value-added activities in many different countries. This description of how the international trading system really works must become second nature to policymakers and the public if we are to vanquish, once and for all, the outdated, destructive ideas of protectionism and insularity, especially when economic conditions deteriorate.

True to form, and despite everything that history has taught, the current economic crisis 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 characterised as “us” versus “them.” Such short horizon thinking threatens to reintroduce barriers and discounts the role that the integration of markets – that supply chains, that foreign direct investment, that collaboration 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.

It makes no sense. Before inflicting lasting damage on the global economy, governments should understand that policies that work during economic expansion – indeed policies like relatively free trade and investment that helped fuel economic expansion – still work during cyclical downturns. What is good for the economy during normal circumstances is good during tough times too.

Notes

1. Matthew J. Slaughter, “What is an ‘American’ Car?” *Wall Street Journal*, May 7, 2009.
2. 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, available at <http://online.wsj.com/article/SB124786970963060453.html>.
3. 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, “‘Shipping Jobs Overseas’ or Reaching New Customers? Why Congress Should not Tax Reinvested Earnings Abroad,” *Cato Institute Free Trade Bulletin No. 36*, January 13, 2009: “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 often require the hiring of more managers, accountants, lawyers, engineers, and production workers at the parent company.”
4. Matthew J. Slaughter, “What is an ‘American’ Car?” *Wall Street Journal*, May 7, 2009.
5. Joseph B. White, “What is an American Car?” *Wall Street Journal*, January 26, 2009.
6. Samuel J. Palmisano, “The Globally Integrated Enterprise,” *Foreign Affairs*, Volume 85 No. 3, May/June 2006, p.129
7. *Federal Acquisition Regulations*, Subpart 25.1 – Buy American Act – Supplies, Provision 25.101(a), available at http://www.acquisition.gov/far/current/html/Subpart%2025_1.html.
8. The Buy American provision requires 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.
9. World Trade Organization, *World Trade Report 2008*, p. xviii.
 10. WTO Report, p.102.
 11. Norihiku Yamano and Nadim Ahmad, *The OECD Input-Output Database: 2006 Edition*, STI Working Paper 2006/08, available at <http://www.oecd.org/dataoecd/46/54/37585924.pdf>.
 12. Author's calculation based on data in Yamano and Ahmad, Annex 1.
 13. WTO Report, p.103.
 14. Yamano and Ahmad.
 15. For the exact formula, devised by Hummels (2001), see WTO Report, Box 14, "Vertical Specialisation" formula.
 16. Author's calculations based on Table 12, WTO Report, p.104.
 17. Ibid.
 18. Ibid.
 19. Hummels, Vertical Specialisation and the Changing nature of World Trade, June 1998, FRBNY
 20. Hummels, David L., Ishii, Jun and Yi, Kei-Mu, The Nature and Growth of Vertical Specialization in World Trade (March 1999). FRB of New York Staff Report No. 72.
 21. Hummels, 2001, cited in WTO Report 2008, p.86, footnote 3.
 22. Hummels, 2001, cited in WTO Report 2008, p 86.
 23. Suzanne Berger, *How We Compete: What Companies Around the World are Doing to Make It in Today's Global Economy*, Broadway Press (December 2006)
 24. David Dollar, Globalisation, Poverty and Inequality, World Bank Policy Research Working Paper No. 3333, June 2004.
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 26. Ibid.
 27. 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.
 28. James Fallows, "What China Makes, the World Takes," *The Atlantic*, July/August edition, 2008
 29. 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 to 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.
 30. <http://www.oecd.org/dataoecd/41/18/39936529.pdf> – p.6
 31. "More Trade Protection for Steel Threatens Consumers," July 7, 2007 AIIS, <http://www.aiis.org/index.php?tg=articles&idx=Articles&topics=19>
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 34. CRS Report, p.2.
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