

## The Rise of the New Mercantilists: Unfair Trade Practices in the Innovation Economy

Julie A. Hedlund and Robert D. Atkinson<sup>1</sup>

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*Many nations have turned to an easier and faster path to winning the global competition for IT leadership: erecting a whole host of unfair and protectionist policies focused on systematically disadvantaging foreign, including U.S., companies in global competition.*

The United States leads the world in the development, production, and use of information technology (IT).<sup>2</sup> Because IT is not only the major driver of economic growth but also a key source of high-paying jobs in sectors like semiconductors, hardware, services, and software, most countries have adopted policies to win the international competition for IT jobs. While most have adopted legitimate policies such as research and development (R&D) tax credits, programs to build IT skills, and liberalizing domestic markets, the payoffs from this path to IT industry competitiveness are neither certain nor immediate. As a result, many nations have turned to an easier and faster path to winning the global competition for IT leadership: erecting a whole host of unfair and protectionist policies focused on systematically disadvantaging foreign, including U.S., companies in global competition. These policies include:

- raising the relative price of foreign IT products and services by applying tariffs, taxes, subsidies, and excessive antitrust enforcement;
- acquiring foreign IT products and services without paying for them through digital theft and forcing U.S. companies to give up their intellectual property; and/or
- blocking or limiting access of foreign companies to markets through standards, government procurement, data privacy and other policies.

Perhaps most troubling is that nearly all of the nations engaging in these unfair and distorting trade practices targeting U.S. IT leadership are members of the World Trade Organization (WTO) and signatories of the Information Technology Agreement (ITA). These nations and regions—from Asia, Europe, and South America—have aggressively put in place strategies that violate the spirit, and often the letter, of

international trade rules. These countries want it both ways. They desperately want access to the U.S. market (and as reflected by the fact that the United States is running a nearly \$800 billion<sup>3</sup> massive trade deficit they are getting it) but they don't want to buy U.S.-produced IT goods and services. They want U.S. IT foreign direct investment, through offshoring, joint ventures, and R&D, but they also want to systematically weaken the competitive advantage of U.S. IT companies in favor of their domestic IT companies.

These aggressive and unfair foreign IT trade policies lead to fewer high-paying IT jobs in the United States and threaten our global IT leadership position. But these policies don't just hurt the United States, they hurt the global economy. By raising the price of IT goods and services, forcing companies to produce IT in places other than where they would prefer, and reducing incentives to produce innovations and intellectual property, these mercantilist policies distort trade, leading to a lower standard of living for global citizens.

These protectionist policies are not just targeted at IT, although that is the focus of this report. It is likely that other studies focusing on biotechnology, financial services, or aviation—to name just a few—would uncover similar practices.

If we want to maintain America's IT leadership position the federal government needs to take a number of crucial steps:

- 1) **The administration should vigorously and unequivocally enforce other nations' IT trade commitments under the WTO.** In particular, the Office of the U.S. Trade Representative (USTR) needs to be more proactive in challenging nations that are violating WTO rules or engaging in other unfair practices.

- 2) **Congress needs to increase USTR's appropriation so that it will have more resources to focus on trade enforcement.**
- 3) **Congress should allow companies to take a 25 percent tax credit for expenditures related to bringing WTO cases.**
- 4) **The administration should include the elimination of IT-based trade distortions among several important priorities when negotiating new bilateral trade agreements.**
- 5) **Congress should significantly expand funding for initiatives to educate the rest of the world on the importance to prosperity of innovation, IT usage, intellectual property protection, and market-based trade.**
- 6) **Congress should conduct hearings into the many and systematic strategies countries are using to challenge America's competitive advantage in IT (and other innovation-based industries).**

The United States is in the midst of a new trade war. But this time the war is not between socialism and capitalism, it's between two very different versions of capitalism: one that puts consumers, property rights, and market-based decisions at the center and one that puts producers, "fair use," and government intervention at the center. It's a battle about which framework more effectively drives innovation and prosperity: the U.S. framework that focuses on the impact of corporate actions on consumer welfare, protects intellectual property and drives innovation, or the European and Asian framework that restricts innovation by giving priority to public rights.

## Why IT Mercantilism?

In his book *An Inquiry into the Nature and Causes of the Wealth of Nations* Adam Smith describes a “mercantile system” as one where nations try to enrich themselves through policies that constrain imports and encourage exports. In particular, Smith said that by these protectionist policies (e.g., favoring domestic goods and services), “nations have been taught that their interest consisted in beggaring all their neighbors. Each nation has been made to look with an invidious eye upon the prosperity of all the nations with which it trades, and to consider their gain as its own loss.”<sup>4</sup> Smith specifically criticized mercantilism because it had been the prevailing economic theory since the 16<sup>th</sup> century. Perhaps the lead practitioner of mercantilist policy was Jean-Baptiste Colbert, King Louis XIV’s finance minister, but England, Holland, and Spain all used various policies to promote their exports in order to build up their stores of gold and silver. These nations, including the United States after independence from Britain, saw trade as a zero-sum game in which one side wins, and the other loses. Conversely, in a market-based innovation economy, trade can be a positive-sum game in which everybody wins. Although Adam Smith helped to discredit mercantilism and many nations eventually abandoned it, he didn’t destroy it. In fact, there are disturbing signs that many nations—particularly in Asia, but also in Europe and South America—have turned the clock back, choosing to take their inspiration more from Colbert than Smith. As a result, too many nations have turned to trade manipulation and distortion, particularly targeted at technology industries, as a way to get richer.

One reason many nations have resurrected mercantilism is because it is an easier and

faster way for them to grow than boosting productivity in domestic industry. The major way economies boost per-capita income growth over the medium and longer-term is to increase productivity. Nations can do this in two ways. One is for existing firms to become more productive, usually by using new technologies or improving workers’ skills. The second is for firms in low productivity sectors to be replaced by firms in high productivity sectors. For example, a developing nation could lose 50 agricultural jobs (which normally have low productivity) and replace them with 50 jobs in a software firm (which normally have high productivity). Across-the-board productivity growth (the growth effect) and shifts in the mix of establishments toward more productive ones (the mix effect) will both contribute to an increase in a nation’s productivity and average incomes.

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So which strategy—growth or mix—is the best path to higher per-capita incomes? The answer depends on the size of the economy. The larger the economy the

more important the growth effect is, while the smaller the economy the less important it is. To see why, consider an automobile factory in a small city. If it installs robotic technology and raises productivity, a large share of the benefits will flow to the firm’s customers in the form of lower prices. In contrast, if the city attracts or grows a high productivity semiconductor firm to replace a lower-productivity firm that moved away, most of the benefits will accrue to the residents in the form of higher wages. This means that for all but the smallest nations, productivity growth across the board, rather than a shift to higher value-added sectors, will generate the majority of per-capita income growth. But even for smaller nations, across-the-board productivity gains are still important ways of getting richer.<sup>5</sup>

## 10 Worst IT Mercantilist Practices Since 2000

China	Applied a 17 percent VAT to both foreign and domestically produced integrated circuits (ICs) used in the semiconductor industry, and gave a rebate on most of the VAT only to companies producing ICs in China for export, but not to companies importing ICs. Also, allows both domestic and foreign companies to deduct the costs of the products they make in China from their corporate income taxes—but only if those products were produced with local parts.
	Rampant theft of U.S. intellectual property content—both physical and digital.
	Developed a wireless encryption standard (the Wireless Local Area Network Authentication and Privacy Infrastructure (WAPI) standard) without international collaboration in order to limit foreign IT companies' access to its market and give its domestic companies a competitive advantage.
European Union	Re-classifying some IT imports so that they are no longer covered by the ITA: applying duties of 14 percent on LCDs larger than 19 inches, and planning to allow duties on set-top boxes with a communication function as well as on some types of digital cameras.
France	Using copyright law to force U.S. companies to make their copyright software protection (digital rights management) interoperable.
India	Applies a 12 percent excise duty on computers that local manufacturers can offset against their VAT. Foreign manufacturers also pay a 4 percent countervailing duty (CVD).
Italy	De-criminalizes "file sharing," which facilitates digital content theft.
Korea	Used excessive antitrust enforcement to disadvantage a U.S. IT company: forced Microsoft to develop two different versions of its Windows software in order to give domestic producers of media players a competitive advantage.
	Used unfair subsidies to support Hynix Semiconductor Inc. to give it a competitive advantage over foreign—and particularly U.S.—competitors.
Russia	Extensive piracy of U.S. physical and digital intellectual property.

Yet, although boosting domestic productivity (while raising domestic demand) is the royal road to prosperity,<sup>6</sup> many nations would rather adopt mercantilist strategies to attract or grow high-tech jobs—particularly in the IT industry—which in the United States pay 84 percent more than average jobs.<sup>7</sup> These strategies are much easier politically than engaging in the hard struggle of boosting productivity. They win the favor of powerful constituents (e.g., domestic producers seeking protection from foreign IT competitors; consumers who don't want to pay for software and other digital products; and workers seeking policies to protect their jobs from competition). In contrast, supporting policies to boost productivity risks the opposition of powerful interests (unions and workers who may be displaced; domestic producers who enjoy cozy relationships and low levels of competition; and government bureaucrats whose top-down control is challenged).

As a result, the global economic system has become systematically distorted from more politically difficult, yet more effective, policies to boost domestic productivity toward beggar-thy-neighbor policies to attract and grow high wage industries. Moreover, it's worse than that. It would be one thing if nations were focused on boosting and growing IT industries through supportive policies like expanding funding

for research, government adoption of IT and e-government, educating highly skilled workers, and developing broadband infrastructure. These policies are not only fair but they grow the global pie by increasing productivity and innovation. They could erode U.S. competitive advantage, but in our hyper-competitive global economy firms as well as nations routinely compete to gain a competitive advantage. There is nothing wrong with using government policies to promote economic development. These innovation policies are different from mercantilist policies, although what some countries call "development policy" is really just mercantilism in disguise (see Table 1). There is something wrong when nations use protectionist trade strategies to gain a competitive advantage over U.S. IT firms by shifting the cost equation, taking technology without paying for it, and blocking or limiting access to their markets.

Even if they acknowledge these mercantilist practices, some may claim that while it might be unfair for rich regions like Europe and countries like Japan to use mercantilist policies to get ahead, it's not unfair for developing nations to do so. After all, their people are poor and need all the help they can get. Moreover, when the United States was a young nation, they argue, it employed policies that helped it create dominant

**Table 1: Comparison of Innovative and Mercantilist Policies**

<b>Innovative Policies</b>	<b>Mercantilist Policies</b>
R&D tax incentives	Forced R&D investment by foreign companies
Government procurement of domestic and foreign IT	Government procurement favoring domestic IT firms
Government-funded R&D	Forcing foreign companies to give up intellectual property
Ensuring markets that are competitive and open	Using antitrust policy as a competitive weapon for industrial policy
Government funding of broadband, IT health infrastructure, other IT investments	Funding development of domestic IT companies through targeted subsidies

domestic companies by keeping out foreign competition. Also, before there were international copyright rules, the United States supposedly was a haven for piracy, as Charles Dickens frequently complained. So, the argument goes, these poor nations have a right to steal U.S. intellectual property, force U.S. firms to transfer their technology, and subsidize standards to compete against U.S. software companies. But just because developing nations may be poor doesn't mean we should ignore their unfair trade policies. The nations engaging in protectionist practices made a free decision to join the WTO and when they did they agreed to reduce if not end mercantilist practices. The reality is that most of these nations saw membership in the WTO as an avenue to exporting to the U.S. without committing to their responsibilities as WTO members.

Moreover, the problem with the argument that developing nations (or even consumers in developed nations) somehow deserve free access to our technology to get ahead is that it ignores the fact that there are legitimate paths to building a competitive advantage in IT. Yet, because these paths are difficult and politically sensitive, many nations refuse to follow them. So when Asia and Europe failed to develop strong IT firms the fair way they turned to using unfair practices to get ahead. Accordingly, the Chinese government creates mandatory domestic standards to block U.S. IT products and services; Korea forces U.S. companies to turn over their intellectual property if they want to sell software to the Korean government; and the European Commission's data protection policy restricts market access for some U.S. companies that handle customers' personal data. Meanwhile India, Pakistan, Malaysia, the Philippines, and Indonesia all ignore their WTO commitments under the

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Information Technology Agreement (ITA) and charge high tariffs on IT goods. Additionally, Europe and Korea use competition laws to try to take one of America's leading IT firms, Microsoft, down a few pegs.

Perhaps this story would be different if the United States were running a trade surplus and dominating most high-tech industries. But it's running a huge trade deficit and countries are challenging it in virtually every industrial sector. If the United States is going to turn around its massive trade deficit, maintaining our leadership position in the IT industry will be critical. Indeed, it's hard to feel sorry for countries that use protectionist practices while they enjoy huge trade surpluses with the United States in IT goods and services. For example, Korea, which uses discriminatory certification procedures against U.S. software companies and subsidizes the development of "home-grown" IT standards, has become a leader in software exports and had a trade surplus in commun-

ication equipment in 2004 of \$19.3 billion.<sup>8</sup> Chinese exports of information technology and communication (ICT) goods grew by 40 percent between 2000 and 2004 while the country had a \$34 billion trade surplus in computer products with the United States and a \$180 billion-plus surplus in all goods and services.<sup>9</sup> During this same period, China used standards, forced technology transfer, and government procurement to favor its domestic IT companies. Malaysia, which uses government procurement policies to block software imports, had the second highest computer trade surplus with the United States, of \$9.2 billion. Mexico, with a \$64.1 billion overall trade surplus lets Telmex, its telecommunications monopoly, charge huge fees for calls from U.S. wireless subscribers.<sup>10</sup> And the list goes on and on.

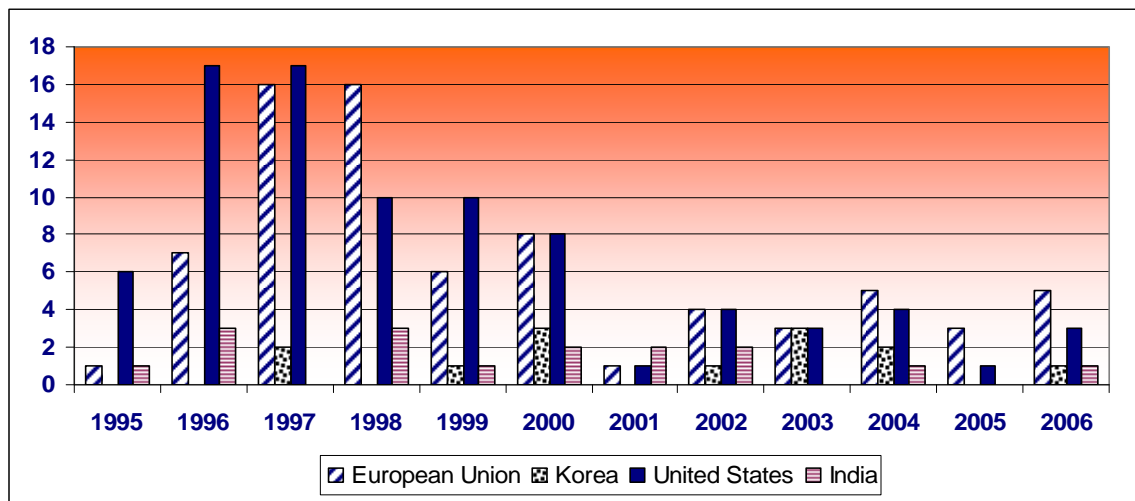
Since these mercantilist countries are WTO members, the United States can complain about their unfair practices via the WTO dispute settlement process. Since the WTO's creation in 1995, the United States has been the most prolific country in bringing WTO complaints (84 from 1995 to 2006), followed closely by the European Union (75 during the same period).<sup>11</sup> Yet a comparison of WTO complaints brought by the European Union, Korea, India, and the United States shows that while complaints have decreased after a high in 1996 through 1998, in the last three years U.S. complaints have fallen faster than those brought by the other two countries and the European Union, despite the fact that all of these countries are advancing mercantilist policies against U.S. IT companies (see Figure 1).

Yet hopefully this trend may be changing. In 2007 the United States has brought four complaints: against Canada for agricultural supports, against India for import duties, and against China for intellectual property enforcement, as well as for trading rights and distribution services for publications and audiovisual entertainment products.<sup>12</sup>

One reason U.S. WTO complaints have decreased in the last few years and the U.S. has not challenged many unfair trade practices is because of the current administration's focus on negotiating new bilateral trade agreements instead of on enforcement prevents the USTR from pursuing every possible case. Another reason is that it is extremely expensive for companies to prepare a case for the USTR. Companies that do so find that their legal counsel cannot participate in WTO dispute settlement proceedings. The reason is that although it is common practice for private legal counsel to participate in developing countries' delegations in dispute settlement proceedings and there is no WTO rule preventing this practice,<sup>14</sup> the U.S. government adheres to previous practice under the General Agreement on Tariffs and Trade (GATT) and does not allow private counsel to appear in its delegation.<sup>15</sup>

Companies also are reluctant to pursue WTO complaints because of the risk of retaliation. For example, if a U.S. telecommunications equipment company raised a complaint about unfair trade

**Figure 1: WTO Complaints Brought by the European Union, Korea, India, and the United States (1995-2006)**<sup>13</sup>



practices against China, it is likely that U.S. China would retaliate by refusing to buy the company's products.

While the array of IT mercantilist practices that countries have devised is extensive, they can be categorized into three main groups: 1) shifting the cost equation; 2) taking U.S. technology without paying; and 3) blocking or limiting U.S. access to their markets.

### **Shifting the Cost Equation**

The most straightforward way for nations to make foreign IT goods and services less competitive is to shift the cost equation by making them more expensive than domestic IT goods and services. They can do this by applying tariffs, taxes, and antitrust enforcement to raise the price of IT imports, which make foreign goods and services less competitive because they cost more for consumers to buy and use. In contrast, nations can lower the price of domestic IT goods and services by subsidizing domestic IT industries. One way is to exempt or offset taxes on goods and services produced domestically or for export only. Alternatively, they can directly subsidize domestic IT industries by providing financial support such as zero-interest loans, free land and buildings, and tax holidays. Subsidies shift the cost equation by allowing government-supported companies to produce goods and services at lower cost even if they are less efficient than competitors.

### **Tariffs**

The easiest way to make an import cost more is to apply a tariff. Throughout history nations have used tariffs to make imported goods and services more expensive. Yet, as developed nations have gradually seen the value in reducing their tariffs, developing nations continue to claim that they need

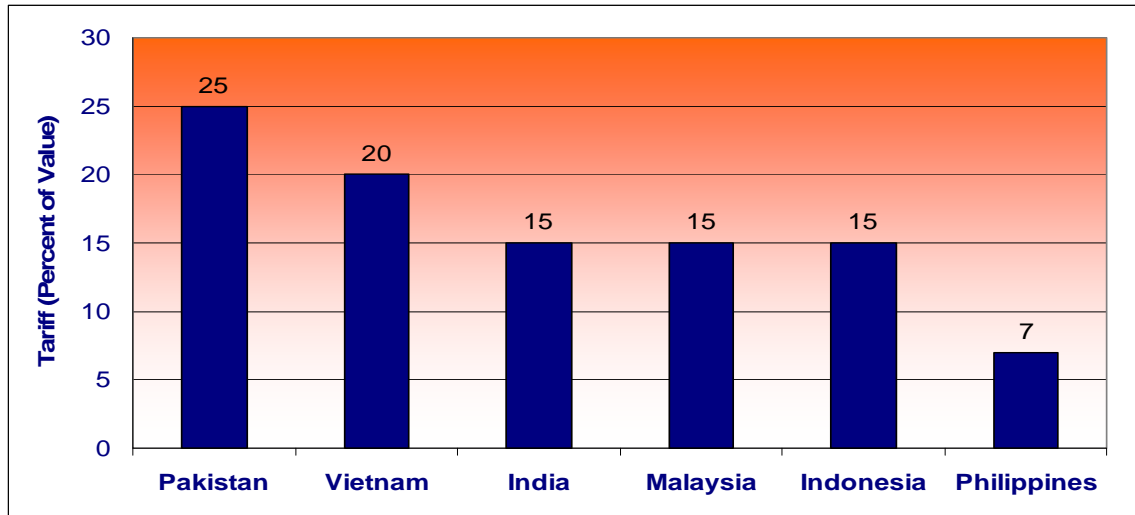
tariffs to help them protect their nascent IT industries. While tariffs could provide some advantage to domestic IT producers, thereby hurting foreign IT companies, they also hurt the nations imposing them by raising the cost of IT goods and services, causing businesses to invest less in IT and see lower productivity.<sup>16</sup> Also, since high tariffs favor domestic goods over imports, they distort trade flows from what they would be in a free market.

The WTO's Information Technology Agreement (ITA) was supposed to eliminate the IT tariffs that distort trade flows when it was completed in 1996 (and after countries gradually met their commitments). This is because the Agreement covers a wide variety of IT goods, including computers and components; telecommunications equipment; printed circuits, resistors, and capacitors; semiconductors and components; and set-top boxes with a communications function. Nevertheless, a review of selected Asian nations shows that ten years after its passage some countries have still not met their commitments (see Figure 2). Yet, many of these remaining tariffs go largely unnoticed because they are carefully hidden deep within these countries' tariff schedules. Also, countries sometimes rewrite the descriptions of some IT goods so that they no longer appear to be covered by the ITA. So, for example, India charges a 15 percent duty on all lab equipment—including components that are used for semiconductor production (which would be exempt from duties under the ITA).

For example, such complexities enable India, a signatory to the ITA, to keep tariffs as high as 15 percent on a variety of ITA-covered products to protect its telephony, electronics, and semiconductor industries (see Table 2). Even worse, India is redefining its description of ITA-covered goods in order to assess 12.5 percent duties on computer monitors, printers, and digital



**Figure 2: 2005 IT Tariffs (Highest Tariff Applied to an ITA-Covered Good)**



cameras. Yet, India was running a trade surplus with the United States at the end of 2006 of \$11.7 billion and is promoting itself as a hot location for U.S. IT outsourcing. While it wants market-based trade in IT services and software, it is content to engage in mercantilist trade in IT hardware. Similarly, Pakistan, which wants to catch up to India in outsourcing and has a trade surplus with the United States of \$1.9 billion, applies high tariffs on a number of electrical parts used in computers.

The Philippines, Indonesia, and Malaysia also have tariffs on imported IT goods despite being signatories to the ITA and

maintaining high trade surpluses with the United States. Tariffs on some imported ITA-covered electrical parts make them 7 percent more expensive in the Philippines, which is running a trade surplus of \$2.1 billion with the United States and some imported telephone equipment costs 3 percent more. In Indonesia, which has a trade surplus of \$10.3 billion with the United States, some electrical components covered by the ITA have tariffs as high as 15 percent while some imported telephony equipment has 10 percent tariffs. Malaysia protects its telecommunications equipment manufacturers by keeping 20 percent duties on imported telephones and switches despite

**Table 2: 2005 IT Tariffs in Selected Asian Countries**

Country	Computers & Parts	Telephony & Parts	Circuits, Resistors, Capacitors	Semiconductors & Parts
Pakistan	25	0	0	0
Vietnam	10	20	20	20
India	0	15	15	15
Malaysia	0	20	15	0
Indonesia	0	10	15	5
Philippines	0	3	7	0

its \$24 billion trade surplus with the United States. Now that the WTO General Council approved its WTO accession in November 2006, Vietnam has pledged to sign onto the ITA and to eliminate tariffs on all ITA-covered products, but nonetheless maintains tariffs as high as 20 percent on these same products. Although countries that join the WTO and sign onto the ITA generally adopt a schedule to reduce tariffs gradually, since some countries seem to feel they can pick and choose which tariffs they want to eliminate, joining the WTO is certainly no guarantee that a nation like Vietnam will meet its commitments.

Asian nations are not the only ones playing this game. With a \$116.6 billion trade surplus with the United States in 2006, Europe has decided that this is not enough and that it must erect barriers to IT imports. But as a signatory to the ITA and having already eliminated tariffs on many IT products, it is difficult for Europe to come right out and re-impose them on foreign IT products. As a result, Europe is trying to do this without seeming to violate its ITA obligations—by re-classifying some IT imports so that they are no longer covered by the ITA. Accordingly, since 2005 the EU has applied duties of 14 percent on LCDs larger than 19 inches, and in 2007 plans to allow duties on set-top boxes with a communication function as well as on digital still image video cameras. The European Union's action sets a dangerous precedent. What if every nation decided what the ITA covered and what it did not—each with its own interpretation based on the industries it wanted to protect, or based on forcing foreign companies to produce goods domestically to avoid high import tariffs? The ITA would become meaningless and IT tariffs would increase across the board, forcing up the price of IT goods and services, reducing productivity, and hurting innovation.

The ITA was a success, but we are a long way from being done. The Agreement is outdated and hasn't kept pace with technology innovation. As technologies evolve and converge, it will be easier for nations to decide that IT products with new features or applications aren't covered by the ITA. The next step is to ensure complete coverage for IT goods while phasing in specific products as they evolve, so that the ITA better reflects technology innovation now and into the future.

### *Taxes*

While tariffs are the most straightforward way to shift the cost equation in favor of domestic producers, taxes are less obvious but no less effective. In particular, nations may apply a combination of different types of taxes to support domestic IT producers. However, using taxes to promote exports is complicated by the fact that certain subsidies for goods (but not services<sup>17</sup>) are a violation of the WTO, while other subsidies are not. In particular, the WTO prohibits subsidies that require the companies that get them to meet certain export targets or to use domestic goods instead of imported goods.<sup>18</sup> A nation that chooses instead to give a domestic (but not foreign) manufacturer a tax break, perhaps through a rebate, for example, may not be violating the WTO.<sup>19</sup> This lack of clarity and the difficulty in proving damage enables mercantilist nations to manipulate taxes to support domestic IT industries while avoiding WTO violations.

To achieve their mercantilist goals nations may choose to manipulate a variety of taxes, including excise and value-added taxes (VAT), as well as countervailing duties (CVD). An excise tax is levied on the manufacture, sale, or consumption of goods or services. The VAT is similar to the U.S. sales tax and is assessed against businesses at various points in the production of goods

or services—usually any time a product is resold or when value is added to it. In addition, nations can take one of two measures to counter perceived export subsidies. One is to assess a CVD on imported goods, but only after nations have conducted an investigation and determined that these are hurting domestic producers. The second is to use the WTO's dispute settlement procedure to seek the withdrawal of a subsidy or the removal of its adverse effects.<sup>20</sup>

Nations also may combine various taxes and duties in a way that may not initially appear to discriminate against imports or favor exports, but could have the same effect. For example, India applies a 12 percent excise duty on computers that local manufacturers (either domestic or foreign) can offset against their VAT.<sup>21</sup> But foreign manufacturers are nonetheless at a disadvantage because they also pay a 4 percent countervailing duty (CVD), which the Indian government has specifically imposed to protect domestic computer manufacturers.

Furthermore, the Indian tax authorities have figured out a way to tax even those foreign companies that don't generate revenue in the local market but may be providing financial support to an Indian subsidiary company. When Indian tax authorities find out about this support, they force the company to make additional payments to the Indian subsidiary above its cost of operation. This practice is not unusual. Other countries' tax authorities typically charge foreign companies fees above the cost of operation of 5 to 15 percent, yet in India these are as high as 30 to 35 percent.<sup>22</sup> The combination of these tax policies puts foreign IT companies doing business in India at a distinct competitive disadvantage. Mercantilist countries like India and others use these types of unfair and protectionist tax schemes to support domestic manufacturers by ensuring that they pay less tax than their foreign competitors so they

will be able to charge less for their products.

China recently created a tax scheme that blatantly violated the WTO when it applied a 17 percent VAT to both foreign and domestically produced integrated circuits (ICs) used in the semiconductor industry, and gave a rebate on most of the VAT only to companies producing ICs in China for export, but not to companies importing ICs. China is the world's third largest consumer of ICs, which also are China's second-largest import from the United States. China is trying to build up its domestic IC industry to reduce its reliance on U.S. imports, but rather than choosing to increase productivity in the semiconductor industry by promoting R&D and boosting worker skills, China would rather use a discriminatory tax that cost U.S. producers as much as \$344 million a year.<sup>23</sup> In 2004 the United States filed its first WTO case over the VAT policy and in response China eliminated it the next year. Not to be deterred, China has since devised another tax policy that favors domestic production of IT goods and services, but is not tied to exports so it may not directly violate the WTO. Similar to India's excise tax scheme, China allows both domestic and foreign companies to deduct the costs of the products they make in China from their corporate income taxes—but only if those products were produced with local parts. While this subsidy may not violate the WTO, it is nonetheless mercantilist since it discriminates against imports. After repeatedly raising concerns about these and other tax policies, the U.S. government filed a WTO case over China's prohibited subsidies in early 2007.

### *Antitrust Law as a Mercantilist Tool*

Antitrust law has proven to be a powerful weapon in the mercantilist arsenal. Mercantilist nations can use antitrust enforcement to force foreign companies selling in their market to redesign products, share technology with competitors, or in

some cases to pay exorbitant fines. These tactics raises their cost of doing business and make their products less competitive compared to rival products in the nation's domestic market. Antitrust enforcement is a more subtle tool, however, because nations may justify it in the name of competition.

Antitrust enforcement can increase consumer choice and foster competition. For example, the Consent Decree and Final Judgments of the U.S. District Court for the District of Columbia in *United States v. Microsoft Corporation* required Microsoft to disclose all of the interfaces internal to Windows called "middleware" (computer software that connects software components or applications)<sup>24</sup> within the operating system.<sup>25</sup> At the time of the ruling, Microsoft was already providing application programming interfaces (APIs) to developers so that they could design products to run on the Windows platform. However, the ruling went further by requiring Microsoft to provide APIs that were internal to Microsoft, which encouraged competition by expanding the number of applications that could interoperate with Windows—giving consumers more choices—particularly as Microsoft pledged to continue this practice once the Consent Decree expires. More importantly, the court showed restraint in its decision by not forcing Microsoft to remove its applications from Windows or create separate versions of its software with, and without, its applications.

In contrast, the European Commission generally takes a more regulatory approach to competition than the United States and mercantilist considerations may more often guide its decisions. For example, in 2001 the Commission blocked the merger of Honeywell and General Electric, two U.S. technology companies, on antitrust grounds despite the fact that the U.S. DOJ had already approved the deal.<sup>26</sup> Such a merger

would have produced a powerful competitor to leading European electronics companies like Siemens and Phillips. Furthermore, with respect to Microsoft, although both the United States and the European Commission opted for behavioral (as opposed to structural) remedies, the Commission's decision went much further in 2004 when it required Microsoft to sell a separate version of Windows without the Media Player application. Although the Commission's ruling may have been based solely on the goal of promoting competition, it may also have indirectly furthered mercantilist goals. For example, while the Commission based its actions on the claim that it wanted to ensure a competitive marketplace in the media player market, in actuality anyone using Windows could download, install and use competitors' players at no cost. Moreover, consumers had little desire to buy copies of Windows without Media Player installed.

The Commission's ruling set a disturbing precedent for other countries that might want to attack a foreign company in order to protect or bolster domestic competition. Even more troublesome is the Commission's 2006 decision to fine Microsoft \$357 million for noncompliance with its 2004 decision and its recent threat of further penalties. In particular, the Commission warned in March 2007 that "there was no significant innovation" in the interoperability information (called "protocols") that Microsoft is required to license to its rivals under the Commission's 2004 order, despite the fact that government agencies in the United States and Europe have awarded Microsoft 36 patents for these protocols. Since an invention must be innovative in order to gain a patent, this suggests that although the European Patent Office found Microsoft's protocols to be innovative, the Commission decided they are not.

Ultimately, no nation should be able to force any company to sell a different version of its

product. What is particularly egregious about the Commission's action, however, is that it also has engaged in a campaign to get other nations to join it in attacking Microsoft with the goal of promoting its world view that public property rights are more important than market property rights, like those protecting intellectual property and encouraging innovation.

The Korea Fair Trade Commission (KFTC) seemed eager to answer the Commission's call and jump into the "battle" against Microsoft by initiating an investigation based on complaints that may have come from Korean companies such as Daum Communications and NateOn (of SK Communications), both of which had been complaining that Microsoft's Instant Messaging application was hurting their business. The KFTC later expanded its investigation to focus on Microsoft's Media Player, which competes with similar products made by Sanview and DideoNET, also Korean companies. The KFTC not only followed the Commission's decision but took it a step further. In addition to requiring Microsoft to provide two versions of its product, one without Media Player and Windows Messenger, it also required Microsoft to promote its competitors' media player and instant messaging products through links to icons on the Windows desktop. Moreover, the KFTC fined Microsoft \$34.5 million. The KFTC's decision makes Microsoft's products less competitive versus its domestic competitors' applications not only by forcing the company to assume the costs of the re-design as well as the fine, but by forcing Microsoft to promote the software applications of these Korean companies. Perversely, the KFTC decision actually restricts domestic competition because the products Microsoft must promote on its desktop are chosen by their dominant market share, making it harder for new entrants to compete in Korea.

## *Subsidies*

Unfair practices like tariffs, taxes, and antitrust enforcement change the cost equation by raising the price of foreign IT goods and services to make them less competitive when compared to domestic IT goods and services. However, another way to change the cost equation is to subsidize the cost of producing domestic IT goods or providing IT services. This is not to suggest that all subsidies or incentives are bad. On the contrary, the fair way for countries to move ahead in the production of high-value-added goods and services, like IT, includes actions such as expanding R&D tax incentives, promoting the use of IT in the economy, encouraging expansion of broadband infrastructure, and increasing IT skills. These kinds of government support can boost productivity and growth. The real problems are large subsidies that favor one firm over another or domestic producers over foreign. When nations—not markets—decide which specific companies to favor, they distort trade by giving a competitive advantage to domestic companies over their foreign competitors. Moreover, they often fail to lead to domestic growth.

A classic example of a failed government subsidy of an IT company is France's support of Groupe Bull, the French data processing company. Bull started out as a private company in the 1950s, but by 1975 the French government bought a majority interest in it to promote the company as a national computer champion. The company was officially nationalized in 1982, yet after only two years Bull's lack of competitiveness forced it to seek outside investment. In the 1980s and 90s it tried to become more competitive by acquiring Zenith and teaming with IBM, but by 1994 it was forced to restructure, close plants, and sell assets. In 1998 the company moved its headquarters to the United States, an obvious sign of France's failure to make

Bull a pillar of the French computer industry to rival IBM (by this time a primary investor in Bull). In 2002 the French government tried to bail out Bull with a \$350 million cash injection, but this move was rejected by the European Commission as violating EU rules on state subsidies.

Nevertheless, France has not given up on the idea that it can subsidize its way to IT success, this time by supporting the creation of a European web search engine called “Quaero” to compete with U.S. companies like Google and Yahoo!. It seems clear that France is supporting Quaero to enable Europe to gain an advantage in the “battle for tomorrow” against other nations, principally America. If Bull is any example, this “digital Airbus” will probably never be competitive with U.S. search engines, although it will have the advantage of massive government funding. But that’s not the point. The point is that massive government subsidies directed at preventing U.S. IT firms from gaining market share in Europe are a gross violation of the spirit, if not the letter of the WTO.

The Japanese government has had more success in using subsidies to support its IT industries starting in the 1960s when the Ministry of International Trade and Industry (MITI) financed the development of a domestic computer industry to compete with IBM, which had 70 percent of the Japanese market in mainframe computers. By 1978, thanks to MITI’s support, there were 32 Japanese business computer manufacturers and by 1982 IBM’s market share had dropped to 40 percent, and Fujitsu sold \$2.1 billion of computer equipment compared to IBM’s \$1.9 billion.<sup>27</sup> During the next decade through the mid-1990s, Japanese companies focused on building and maintaining their lead in the domestic mainframe market, despite the growing popularity of personal computers (PCs) in the U.S. and elsewhere. Government-funded agencies—some of the largest

purchasers of computers in Japan—continued to purchase mainframes instead of PCs and further bolstered Japanese suppliers through procurement rules that favored domestic companies.<sup>28</sup> While these rules were changed in 1987, as recently as 2001 Japan’s mission-critical systems still relied on enormous mainframe-based networks. The Japanese government’s reliance on these computers ensured that Fujitsu and other domestic mainframe vendors have continued to dominate Japan’s mainframe market while resisting global downturns in mainframe sales such that by 2001 the Japanese mainframe market reached \$2.3 billion, exceeding the \$1.9 billion of the U.S. market.<sup>29</sup>

Like Japan, the Korean government also decided its IT industry could use help and its strategy was so successful that Korea’s semiconductor manufacturers captured one-quarter of the world market in the 10-year period leading up to 1994. While the Korean government provided support in ways that did not distort trade—such as R&D tax credits and manpower development—it also engaged in unfair practices to help at least its national champion get ahead. In particular, in 2001 Hynix Semiconductor Inc., Korea’s second largest semiconductor manufacturer was in financial trouble. Its creditors, led by the Korea Exchange Bank (which at that time was government-owned), arranged for a rescue package of about \$770 million in fresh loans and a swap of \$2.3 billion of debt into equity. Yet Hynix did not have to pay back its debt at the market rate and as a result was able to export its products below cost, which hurt U.S. competitors.<sup>30</sup> In response, the U.S. government applied countervailing duties of 44.29 percent on Hynix’s exports. Korea countered by initiating dispute settlement proceedings in 2003, but the WTO upheld the U.S. government’s subsidy determination. So, in this case, U.S. diligence in holding Korea to its WTO commitments helped U.S. industry

to fight back against Korea's unfair subsidies, but not before Korea's industry and Hynix in particular received enough support to make significant inroads into the global semiconductor market.

In response to charges that they are unfairly subsidizing their IT firms, other nations often will counter that they are only doing what the United States did through its defense policies. It's true that these policies, in particular support of R&D and procurement of IT products, helped the U.S. IT industry gain a global competitive advantage. But they don't violate either the letter or the spirit of the WTO. The former policies support scientific research. The latter can be employed by any government in support of its governmental missions (e.g. defense). Indeed, many have argued that the focus on defense research has hurt the United States compared to other nations that focus their research investment on civilian technologies.<sup>31</sup>

### *Taking U.S. Technology Without Paying*

Most countries know that intellectual property is valuable, that it is the foundation for innovation, and that it needs to be protected (at least when they create it). For example, Indian IT firms have started rewarding employees who file patents with bonuses as high as 20 percent of their salary.<sup>32</sup> Intellectual property is important because it is the creative thought that is embodied in inventions, books, music, and works of art. It is in the design of a car engine, the wings of a plane, the software that runs the computer, the words that form a story, and the notes of a song. Patent, copyright, and trademark laws give the creators of intellectual property the right to prevent others from using their works for a limited time. A patent gives an inventor of a type of circuit design the right to keep someone else from producing a circuit using the same process.<sup>33</sup> Copyright allows a software company to prevent anyone from

copying the software without permission. Trademarks protect brand names, designs, and other symbols (like the apple design on the Apple computer) that companies use to sell their products.

Not everyone agrees that granting the exclusive right to control intellectual property promotes innovation. In particular, advocates of free access to and distribution of intellectual property believe this will foster innovation by making it easy and cheap for anyone to improve on and distribute the benefits of existing innovations. For example, the Open Source Initiative promotes free redistribution, access and modifications to computer source code—the commands that make computers and their programs work.<sup>34</sup> Software developers use many different business models. Some distribute the software for free, but charge for support. Others charge for the software, but not for support or documentation. It's for these businesses and individuals to decide which model works best for them and for consumers to determine which they prefer. The marketplace should decide.

The problem occurs when people who are simply freeloaders take advantage of the open source model or steal software that companies otherwise would be able to sell. While some countries are willing to buy or license U.S. intellectual property, others would rather take it without paying for it, particularly if it advantages their own IT industries while simultaneously disadvantaging ours. International rules like the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) offer little if any protection from countries that want to steal U.S. technology because TRIPS only offers standards on how countries should protect intellectual property, and it's up to each nation to decide how, and whether, to enforce them. If a nation decides that it's beneficial to take U.S. technology, it may enact weak laws (or

none at all), have lax enforcement policies, or simply ignore violations. Countries do this in two ways: either by stealing content or by forcing companies to give up their intellectual property.

As a net exporter of manufacturing know-how as intellectual property, the United States is the most vulnerable to this form of unfair trade practice, especially compared to countries that specialize in producing physical goods and services. In 2006 U.S. receipts (exports) from intellectual property licensing transactions were more than \$62 billion,<sup>35</sup> more than twice the amount of U.S. payments.<sup>36</sup> Over 50 percent of U.S. exports depend on some form of intellectual property protection, compared to less than 10 percent 50 years ago.<sup>37</sup>

## Content Theft

Before there was an Internet, intellectual property was available in digital form, but was most commonly obtained as physical media, such as compact disks (CDs) or software diskettes. These physical digital goods could all be copied illegally—sometimes with a bit of effort to get around copyright protection—but usually with ease. Thus creators and sellers of digital content have long faced the specter of piracy and sought protection from it. They even have a saying, “it’s hard to compete with free.” Many nations have taken this maxim to heart as they continue to turn a blind eye when their consumers, businesses, and even sometimes government agencies illegally copy software and other digital content without paying. More than a third of the software installed on personal computers worldwide in 2006 was pirated and the United States lost \$6.9 billion to software piracy in 2005.<sup>38</sup> Computer software piracy rates are particularly high in some regions (see Figure 3). In the European Union, more than a third of software is pirated. In Central and Eastern Europe, a region working hard to be the global location of

choice for computer software programming, nearly 70 percent of software is stolen. In Asia, it’s more than 50 percent. China’s rate of software piracy is 86 percent, which is a result of the ubiquity of cheap illegal copies.

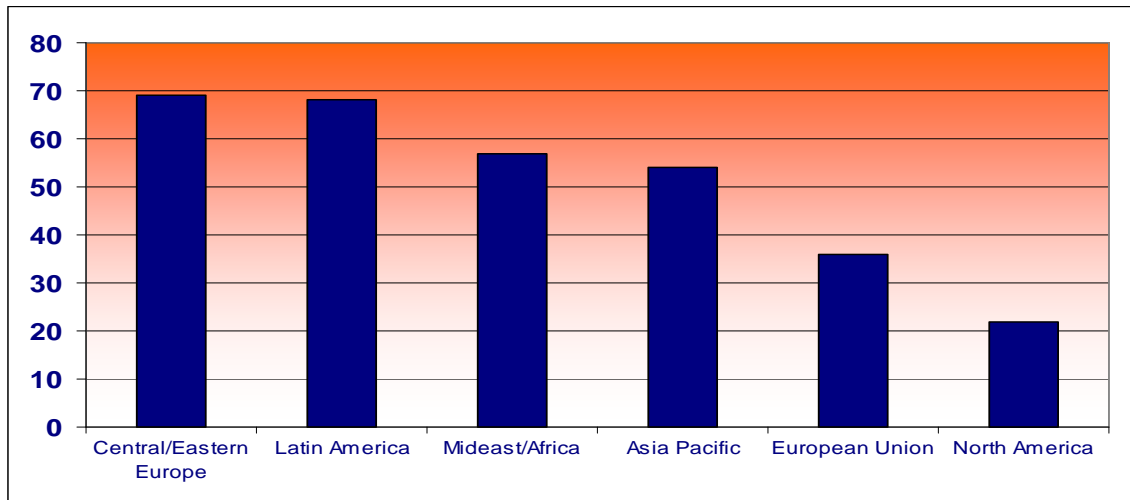
Easy access to low-cost fakes encourages Chinese consumers, private businesses and government entities to steal software rather than to buy a legitimate version. So, even though China’s State Council ordered all government agencies to use only legal software in 1999, lack of enforcement or monitoring ensures that the Chinese government still favors cheap (or free) illegal software, as is reflected in its low levels of government purchases.<sup>39</sup> India, despite its huge software export business, has a piracy rate of 72 percent, which means it’s biting the hand that feeds it—begging IT investment morsels from the U.S. for IT outsourcing (such as producing customized software), while stealing U.S. IT digital content. Because the United States is a leading exporter of intellectual property the U.S. economy is most damaged by content theft. So it follows that the United States had the greatest dollar value of pirated software in 2005.

Computer software piracy is just the tip of the iceberg. The entertainment software industry (e.g., video games), which the U.S. leads, suffers from rampant piracy in other nations. Over 90 percent of video games consumed in China are pirated.<sup>40</sup> But China doesn’t just copy them; it is a leading producer of pirated cartridge-based entertainment software. To add insult to injury, it actually exports these pirated cartridges around the world. (Paraguay is China’s primary transshipment point into Latin America, for example.) Russia is one of the primary sources of pirated CD-based software (such as PC-based games), which is controlled by organized crime syndicates.

Russia also is a distribution center for pirated entertainment software into Central



**Figure 3: 2005 Percent of Pirated Computer Software by Region as Compared to Total Software Sales<sup>41</sup>**



and Eastern Europe. Malaysia is a primary source of pirated optical-media-based (CDs, digital video disks, DVDs) entertainment software (primarily console games) with a capacity of producing over 300 million disks per year.<sup>42</sup>

In addition, CD and DVD music and movie piracy is rampant worldwide. In China and Indonesia more than 80 percent of music is stolen. In Russia and Mexico it's more than 60 percent. Because of this unwillingness to pay, the U.S. lost more than \$4.5 billion worth of content.<sup>43</sup> The United States finally fought back and filed a WTO complaint against China in April 2007 over its lack of intellectual property enforcement as well as market access barriers to copyright-based industries.

When content had to be obtained through physical media (e.g., game cartridge, CD-ROM, DVD, etc.), individuals seeking to obtain pirated content had to go out in public and get it. There are still many notorious markets around the world where cheap illegal digital goods are easily obtainable—in broad daylight and with little government

interference, even where these markets clearly violate national copyright laws. For example, Chinese pirates sell stolen software, CDs, and DVDs in Beijing around the corner from the U.S. Embassy. When local authorities raid these markets, the sellers just relocate. So, when Russian police raided the Gorbushka market in Moscow, the pirates just migrated to the nearby Rubin Trade Center. In some countries popular shopping centers provide havens for pirated content, such as the Stand Center “25 de Marco” in Sao Paulo, Brazil. Others are spread throughout small street markets in large cities. In Mexico, 50,000 vendors of illegal digital goods operate in small markets in Mexico City, Puebla, and Guadalajara.<sup>44</sup>

The advent of the Internet and broadband lets individuals bypass the middleman and steal content directly by downloading software, games, music, movies, photos, and even books over the Internet. Content theft in digital form is increasing as more people have access to the Internet at homes and offices, and as broadband infrastructure improves. Now instead of setting up a place

to sell pirated CDs in a back alley, digital pirates set up websites to do the same digitally.

Indeed, several countries have become havens for virtual markets in illegal copies of digital content. These countries let pirates run websites that make it easy for people around the world to steal and exchange illegal digital copies of music, movies, and software. For example, Russia continues to allow pirates to operate the world's largest server-based pirated music website: [www.allofmp3.com](http://www.allofmp3.com), despite the fact that it is violating the country's new copyright law, passed in September 2006. (The United States has warned Russia that it's not acceptable for Russia to join the WTO while allowing the site to exist.<sup>45</sup>) The Chinese government looks the other way when its domestic Internet service provider, Baidu, offers search engines for digital music theft. Taiwan tolerated Kuro, a file exchange service for stealing software, music and movies, until the United States pressured the country to crack down on the service. Yet these Internet piracy havens are not confined to Asia or Russia. It's not just poor nations that willfully ignore IT copyright theft, Europe does as well. In fact, two of the richest countries in the world, Norway and Sweden, have weak copyright laws that enable digital thieves and pirate sites to operate unhindered. One of the most notorious websites for transferring stolen digital music, movies, and software, ThePirateBay.org, is located in Sweden. A visitor to their website will see a home page that looks not all that different from a commercial e-commerce site—with products organized around “audio,” “video” “(software) applications,” “games,” and “other.” There's only one problem. All the digital content and applications that consumers can download are pirated and

***Even though copying media and downloading content without paying for it are illegal, many countries do little to stop it.***

illegal.

Even though copying media and downloading without paying for the content are illegal, many countries do little to stop it. And why should they, when they can not only get free goods for their citizens but also at the same time reduce the competitive advantage of U.S. software and digital content companies. ThePirateBay, while it was briefly shut down by the Swedish government, was able to return to operation. Although in June 2007 the Swedish government prosecutor was granted an extension until October to continue his investigation into ThePirateBay and its copyright theft.<sup>46</sup> Yet the site's administrators rather disingenuously claim that they aren't breaking the law because they don't actually provide copyrighted files, they just show users where to find them. So, although Sweden's new law, passed in 2005, makes downloading unauthorized copies of copyrighted material illegal, pirates get around the law by saying it's not illegal to help people get illegal content.

While developing nations use the claim of poverty to justify stealing software and other content, richer nations in Europe use a more sophisticated rationale: information should be “free” and copyright laws restrict the free flow of content. The operators of ThePirateBay use this fallacious reasoning: “All of us who run the TPB are against the copyright laws and want them to change,” said “Brokep,” a Pirate Bay operator. “We see it as our duty to spread culture and media. Technology is just a means to doing that.” This is also why Sweden's Justice Minister threatened in 2005 to ban companies from using technological “locks” to prevent users from copying music CDs, because under Sweden's (and Norway's) copyright law consumers have the right to make personal copies of digital media.<sup>47</sup>

Even Sweden's laws are evidently not lax enough for operators of ThePirateBay, who are now seeking to buy an abandoned oil rig off the coast of Britain (an "island" called Sealand) so that it will have its own copyright-free nation from which to operate.

Norway goes a step further by not only giving consumers the right to make an illegal copy for "private use," but also to let them distribute these stolen digital goods to family and friends. In other words, as long as you are only using pirated software or music for your private use or giving it to others you know and not reselling it, it's okay. They surely would feel differently if Americans stole Thule vehicle roof racks (Thule is one of the largest companies in Norway), for their own "private use" on their own cars or gave them to their friends and family to use. In each case the company that makes the product loses the revenue it might have gotten if consumers had bought—instead of stolen—the product. It doesn't matter if it's software or a roof rack, the result is the same.

Yet to the Norwegians, Swedes, and increasingly many officials in Europe, it isn't the same. To them, consumers have a right to use intellectual property without paying for it. These "fair use socialists" take the concept of the balance between the exclusive right to intellectual property and public use of that property and they tip the scales in favor of public use. The problem is that this takes away the incentive to innovate. But this doesn't prevent European countries from adopting these policies.

The poster child for this is France's recent law to force companies that use copyright protection software to protect digital music to make this software interoperable with their competitors' digital music players. Specifically, in 2006 the French government proposed changes to its copyright law that required any company that uses technology—such as a software program—

to prevent users from making copies of copyrighted media to tell anyone who asks how that software works. France claims the goal of its law is to make digital music players and other digital content devices work together so that music downloaded for one device can be played on any other device—that is to make the players and their content interoperable. Interoperability is one of the models companies use for technology devices that allow users to play content—the way that nearly any music CD can be played on any type of player. Another is to link devices and content—the way video games designed for the Xbox can only be played on the Xbox. Digital music player companies have adopted different strategies. One manufacturer, Apple Computer, uses the MP3 music compression standard for its music but also uses proprietary digital rights management (DRM) software to protect the music that users download from Apple's iTunes Music Store. This is the same model used by other makers of digital music players, such as Microsoft's Zune player. However, while a user can't download a file directly from iTunes to a Zune player or from Zune Marketplace to an Apple iPod, both devices have software that lets the user convert files from each other's formats so that they can be played on either device. Also, in both cases the files can be downloaded to a PC and then copied to a CD.

Yet, it appears that the true goal of France's law is to get these companies to drop their copyright protection so that it is easier for consumers to make "free" copies of the music files to play on other devices, or "share" with others. This also is the goal of several European consumer groups, as well as the European Union's Consumer Protection Commission, all of which are pressuring Apple to allow users to circumvent the copyright protection on its music files.<sup>48</sup> Early in 2007 German, French, and Dutch consumer groups joined those from Norway, Sweden, and Denmark

in charging Apple with violating their copyright laws because iTunes music files cannot be played on rival companies' devices.<sup>49</sup>

Meanwhile, Italy's highest court ruled in January 2007 that downloading music, movies, and software from "file-sharing" websites is not a crime as long as it isn't done for financial gain.<sup>50</sup> This means that it is not a crime in Italy for someone to download a copyrighted version of U.S. software for free and either keep it for personal use or give it away (but not to sell it). Yet, this same person would have no incentive to buy a legitimate copy of the software nor would the person who gets the "shared" copy. As the world leader in music and the music industry, this type of law is a direct assault on the United States.

### *Intellectual Property Theft*

Developing nations have long argued that intellectual property laws keep them from enjoying the benefits of the intellectual property created by the developed world. This is a bit like the children's story about the Little Red Hen who did all the work to make the bread—including growing the wheat and grinding the grain, making the loaves and baking them—only to have her barnyard mates demand the right to eat it. To appease developing nations, negotiators enshrined the right to access intellectual property in the TRIPS agreement, requiring developed countries to provide incentives for their companies to transfer technology to least-developed countries. But mercantilist nations have decided that this is not enough. In addition to turning a blind eye to digital content theft, some actively promote it when they force IT companies to transfer technology such as product designs, software code, or technical specifications. For example, some countries make technology transfer a requirement for selling a product or service in the market through certification procedures, or foreign direct

investment (FDI) requirements such as joint ventures and R&D. Mercantilist nations use these unfair tactics to give their IT companies a competitive advantage by enabling them to get their competitor's technology for free, even while they run large trade deficits that could be going to pay for technology.

### *Certification*

One way to get technology for free is to force companies to transfer it in order to get their IT products certified to be sold in the market. Japan, China and Korea all have used certification requirements in various ways to force foreign IT companies to give up their source code, technical designs, or other proprietary information. For example, in 1995 the Japanese Accreditation Board (JAB) proposed that all software to be sold in Japan for government procurement should be submitted for evaluation by a quality review board. Japan's standard for certification went beyond the international standard and would have added delays and expense. But of greater concern was the fact that Japanese evaluators would have access to proprietary information as part of the review process. Also, although the JAB claimed the review would be voluntary, it was clear that Japanese government agencies would only procure software that had passed the review.

At that time U.S. software companies had a significant share of the Japanese market, particularly in spreadsheet software, with Microsoft and Lotus at 40 percent and 21 percent respectively. Given the United States' dominance of software in the Japanese market, the quality review requirement seemed to be designed to give a competitive advantage to Japanese software companies by making it harder for foreign software companies to get their products approved for sale and delaying their time to market.<sup>51</sup> Ultimately, the proposal was dropped after pressure from the United

States, which claimed the standard was a significant non-tariff trade barrier that would violate the WTO's Technical Barriers to Trade (TBT) agreement, which prevents WTO members from using certification and standards as a barrier to trade.

Not deterred by Japan's experience, China and Korea have recently established procedures that require foreign companies to submit their IT products for a review that is both time-consuming and costly and one that could give Chinese and Korean IT companies access to U.S. intellectual property. In China, since August 2003 U.S. companies that want to sell IT equipment, devices, appliances, and components must undergo a safety and quality review in order to obtain a China Compulsory Certification (CCC) mark. The CCC is similar to the Underwriters Laboratory (UL) safety certification mark for electronic and other products in the United States, but with two important differences. First, unlike the CCC mark—which as its name suggests is compulsory—the UL is a voluntary industry standard. Second, the UL is a non-profit and independent organization that is not affiliated with either the U.S. government or any U.S. companies. Only UL employees, who are required to sign a confidentiality agreement, perform product evaluations and tests. Conversely, the CCC mark is administered by the China National Regulatory Commission for Certification and Accreditation, a government organization. More importantly the technical committees that evaluate the products for the CCC mark include industrial and other experts that may be affiliated with Chinese competitors which could get access to the intellectual property. While there is no evidence that such theft has occurred, the U.S. government is concerned enough to raised this issue in its annual 2007 National Trade Estimate Report.<sup>52</sup>

Korea's strategy is similar. In July 2005 Korea's National Intelligence Service (NIS) expanded the scope of its Security Review requirement to include all IT products falling under the Common Criteria (CC), an international standard for evaluating IT security. Korea's revision of its Security Review was supposed to prepare it for membership in the CC Recognition Arrangement (CCRA), which allows members to procure products that earn a CC certificate without additional evaluation.<sup>53</sup> For example, if a company wants to sell a software system for payroll processing to the Korean government and it has already received a CC certificate for the product (meaning the product meets international security requirements), then as a member of the CCRA Korea shouldn't require an additional review. However, Korea expanded its requirements to include both the CC review as well as an additional security review performed by the NIS, even if the product isn't being used for sensitive or secure systems. Conversely, the United States accepts the CC security review for IT products for government procurement and only requires an additional review for software used in secure or sensitive systems. Furthermore, in Korea the NIS performs the additional testing, but in the United States independent testing labs conduct the testing.

Korea's requirement was problematic because it violated the CCRE and forced foreign companies to give up their computer software source code as part of the review. Not only did this go beyond the U.S. requirements, it would have given the NIS unwarranted access to valuable intellectual property. When the U.S. government complained, the NIS switched tactics and instead required foreign companies to submit to an evaluation test report—also in violation of the CCRE. Foreign companies and the United States again resisted, so the NIS opted to require companies to comply with “protection profiles.” These documents are used as part of the evaluation

process for the CC standard, so they don't violate the CCRE. But the NIS refuses to translate these highly technical documents into English, which makes it difficult if not impossible for non-Korean companies to comply with them since their complexity results in a variety of possible interpretations. This delays and restricts foreign companies' access to Korea's vast market. So Korea has found a way to give its domestic software manufacturers a competitive advantage while violating the spirit—but not the letter—of its membership in the CCRE.

### *Joint Ventures/R&D*

Conditioning technology transfer before foreign companies can enter into business alliances, such as joint ventures, or requiring them to set up R&D facilities before getting access to the domestic market are two ways nations get intellectual property for free.<sup>54</sup> These violate the WTO when they require companies to comply with certain provisions as a condition for market access. But they are popular tactics with some mercantilist countries because they let them get valuable technological know-how, which they can then use to support domestic technology development in direct competition to the foreign firms originally supplying it. It is one thing if companies want to invest in R&D in other nations as part of their business strategy. It is quite another for them to be coerced into doing so in order to access the market. Since the WTO prohibits forced technology transfer, mercantilist nations that are members have discovered that they can avoid a WTO violation by “encouraging” technology transfer without formally requiring it. One way is for local government officials reviewing investment applications to make it clear that a quid-pro-quo deal is required for approval. Burying these deals in the fog of bureaucracy lets mercantilist countries hide their WTO violations.

China is a master of joint venture and R&D technology transfer deals. In the 1990s when the country began aggressively promoting domestic technological innovation it developed investment and industrial policies that included explicit provisions for technology transfers, particularly for collaboration in production, research, and training.<sup>55</sup> So, rather than doing the hard work to build its domestic technology industries, or better yet focus on raising productivity in low producing Chinese industries, China decided it would be much easier and faster simply to take the technology from foreign companies. It uses several approaches. One is to get companies to donate equipment. Others include requiring companies to establish a research institution, center, or lab for joint R&D in order to get approval for joint ventures. Several large U.S. companies, including Motorola, IBM, and General Motors Corporation, have since built more than 400 R&D facilities in China. China recently approved Intel's plans to build a semiconductor chip fabricating plant in China, although U.S. export control laws will probably prevent China from accessing the company's most sensitive technologies. While these companies haven't publicly said they were forced to make these investments or give up technology, it's likely that many had little choice since China's strategy of extorting technology from U.S. companies as a condition for entering the market is an important source of technology transfer from the United States to China.<sup>56</sup>

Since the WTO prohibits these types of deals and China is a member it now hides them in the informal agreements that Chinese government officials force on foreign companies when they apply for joint ventures. They also still require other WTO-violating provisions, such as export performance and local content, to approve an investment or a loan from a Chinese bank.<sup>57</sup> So China continues to violate the WTO, only more covertly, getting U.S.

technology and paying nothing in return. U.S. companies continue to capitulate because they have no choice. They either give up their technology or they lose out to other competitors in the growing Chinese market.

China isn't the only nation that has figured out how to force foreign companies to give up their intellectual property. Brazil is taking a page out of China's book in its new innovation law that encourages public-private R&D collaboration, but does not provide for the protection of the intellectual property resulting from that collaboration. So, a company that invested and participated in the development of a new IT product in Brazil would not be able to exclude others from capitalizing on the invention.<sup>58</sup> If a company could not be sure that it could protect its investment in its invention, it would not have an incentive to innovate. Yet Brazil, like China, is an important market for IT goods and services and one which many companies feel they can't afford to ignore. Like China, Brazil wants the benefit of gaining the technology without paying for it, while maintaining a \$7.2 billion trade surplus with the United States.

On the surface, India would appear to provide a better investment environment since it allows 100 percent foreign investment in IT companies without requiring technology transfer.<sup>59</sup> But in practice its investment rules make it impossible for foreign companies to acquire Indian IT companies, as Oracle, the U.S. software company, discovered when it attempted to acquire majority ownership in i-flex, an Indian company that develops banking software. In 2005, Oracle bought a 41 percent equity interest in i-flex and later tried to increase this to 90 percent in order to de-list i-flex from the Indian stock market. But it encountered several obstacles. First, Oracle had to pay an exorbitant filing fee for its open offer to share holders. Then an

arcane rule forced it to delay another offer. Finally, an Indian investment rule that allowed minority shareholders to refuse to sell prevented the company from obtaining other nations' ownership. The result is that these nations want to be able to sell the products they are good at, whatever they may be (and U.S. consumers seem happy to buy them), but they don't want to have to buy what we are good at: IT and intellectual property.

### **Blocking or Limiting U.S. Access to Their Markets**

While mercantilist nations have a variety of policy tools at their disposal to support domestic technology production by blocking or limiting access to their markets to foreign goods and services, they seldom will be so bold as to admit the true reason for these policies. Rather, they will usually claim that the policies are needed to protect consumers. These protectionist policies include mandatory domestic standards, data privacy requirements, government procurement and encryption restrictions, blocking refurbished equipment, and blocking or limiting IT services.

### **Standards**

Nations have increasingly used mandatory standards as a useful tool for blocking or limiting foreign IT companies' access to their markets and for supporting domestic IT industries. Standards are particularly valuable because they are ubiquitous in IT products and services. In fact, we use them every day. They play a key role in ensuring that things work the way we expect them to: reliably and safely. We print documents on standardized paper sizes, communicate using data and audio standards, and expect to be able to plug in our lamps without burning down the house.

There are many different standards organizations, but most are comprised of

private companies with some government participation. Members may include businesses, professional and trade groups, scientists and engineers, government agencies, and consumer and labor organizations from around the world. In addition to allowing participants from all countries, standards organizations use consensus to arrive at a standard in order to ensure that all participants are heard. So there is nothing unfair or unusual about governments participating in standards-setting as long as they do not dominate the process, interfere with the consensus, or mandate a certain standard.

Mercantilist nations take advantage of the standards-setting process by preventing foreign companies, organizations, or governments from participating and by mandating standards that block or limit access to their markets to foreign IT goods and services, or that support the development of domestic IT goods and services. Unbiased technology standards can promote trade by ensuring interoperability between products and services, while improving production efficiency and quality. But countries that develop discriminatory domestic standards give local IT companies a competitive advantage by keeping foreign competitors out of the market.

A prime example of a government interfering in the standards-setting process and mandating a standard in order to support domestic industry was the European Commission's involvement in the development of the European Global System for Mobile Communications (GSM) standard and its third generation (3G) wireless successor. The Commission got involved because during the early 1980s in Europe, Scandinavia, and the United Kingdom analog cellular telephone systems were growing rapidly, but each country had its own standard that was incompatible with everyone else's. Since the Commission was

promoting a unified Europe, it decided that a unified wireless standard would help increase the market for European-made telecommunications equipment with significant savings from economies of scale. So the Commission proposed the establishment of a European telecommunications standards organization—ETSI—and under the Commission's direction ETSI took up the development of GSM, which was based on a digital system, as opposed to the then-standard analog cellular systems like the U.S. standard—advanced mobile phone service (AMPS).<sup>60</sup>

We should be clear: It wasn't unfair for the Commission to participate in setting the GSM standard. What was unfair was the Commission's mandate that EU member states must use only official EU standards (e.g., GSM) in public procurements.<sup>61</sup> This mandate unfairly disadvantaged existing standards, such as AMPS, because it meant that EU member states were required to purchase only equipment that was compatible with GSM and U.S. telecommunications equipment providers had to build their equipment to work with GSM in order to sell it in the market. So, U.S. companies had the added cost of having to design products for two different standards—AMPS for the U.S. market and GSM for Europe—while EU equipment providers only had to design their products to work with GSM.

GSM's dominance in the EU market with the Commission's support ensured that its third generation (3G) wireless successor also would dominate the market. In particular, when the International Telecommunications Union (ITU) established the International Mobile Telecommunications (IMT)-2000 concept for third generation (3G) wireless services and requested standards proposals, the Commission backed Wideband Code Division Multiple Access (W-CDMA—the European successor to GSM) over Wideband Time Division Multiple Access



(W-TDMA, an alternate European standard that was considered by some as less technically efficient), and CDMA2000 (the U.S. standard).<sup>62</sup> As with GSM, the Commission favored the domestic standard by requiring EU member states to give at least one mobile license to a service provider using it. So the Commission again forced U.S. telecommunications equipment manufacturers to adopt the EU standard if they wanted to sell to EU service providers. This made their development costs higher than those for EU manufacturers, who only had to build to one standard, putting them at a competitive disadvantage if they wanted to sell to the EU market.

Similarly, China gave its wireless telecommunications equipment manufacturers and operators a competitive advantage by developing a domestic standard and then forcing foreign companies to adopt it for their Chinese products and operations. In addition to mandating standards, the Chinese government dominates the process and runs it without international consensus. It drafts most standards without foreign, or even public, input. If foreign representatives are allowed to participate at all they can only be observers without voting rights.<sup>63</sup> So Datang Corporation, a Chinese energy company, developed the country's domestic 3G wireless standard (TD-SCDMA—Time Division-Synchronous Code Division Multiple Access) with explicit Chinese government support, little foreign participation (some technology development by Siemens, a Germany company), and without consensus.<sup>64</sup> Although China later submitted the standard for approval by the International Telecommunications Union (ITU) in 1998 and it was subsequently approved, it was a mere formality.

China's goal with TD-SCDMA was to force foreign telecommunications equipment manufacturers to adopt the standard in order to sell their products to Chinese service

providers in the potentially huge and lucrative 3G wireless market. Not only would they be forced to design their equipment to conform to the standard, they also would have to pay royalties to Datang to use it. The only problem for China was that TD-SCDMA needed a lot of development before it could compete with the existing 3G standards—CDMA2000 and W-CDMA. So China has held off on granting wireless licenses for operators to deploy 3G services until TD-SCDMA is ready for prime time, and in particular for the 2008 Olympics. That means that China will need to give out licenses soon, but this delay has given the existing standards an advantage because they already have subscribers around the world, including in Asia. It also gave foreign telecommunications equipment providers time to design their equipment so that it will be compatible with all the 3G standards, including TD-SCDMA.<sup>65</sup> That leaves only the royalty payments as the primary way that China's standard can still get a competitive advantage.

Because the Chinese government knows that it has considerable "market power" over foreign companies due to its sheer size, it knows that unless challenged by other governments or the WTO it has considerable leeway in unilaterally setting standards to favor domestic firms and force foreign firms to pay licensing fees. Such was its motivation when the Chinese government announced that by June 2004 the Wireless Local Area Network Authentication and Privacy Infrastructure (WAPI) standard would be mandatory for both domestic and foreign companies to use for Wi-Fi technology, even though an international standard had existed since 1997.<sup>66</sup> While the government claimed WAPI was justified because it was more secure than the existing standard, there was no evidence of this. Its true motivation was to force foreign companies to pay license fees to Chinese companies and to give up U.S. technology.

In particular, before U.S. companies could use the standard they needed to get the encryption algorithms and to do that they had to give up proprietary technical specifications to their Chinese competitors. When the United States government threatened to file a WTO complaint against China for violating WTO's Technical Barriers to Trade (TBT) agreement by creating a standard that constituted a trade barrier, China dropped its mandate.<sup>67</sup> However, this has not deterred the Chinese government from continuing to support the standard by requiring WAPI to be used in all government procurement.

The Chinese government is also involved in the development of an Audio/Video Coding (AVS) standard to keep Chinese companies from having to pay high licensing fees to foreign companies and to give them an edge over their American competitors.<sup>68</sup> Yet despite explicit Chinese government support and adoption of the standard nationally in 2005, the Chinese State Administration of Radio, Film, and Television (SARFT) rejected AVS in favor of the international standard, MPEG-4. In addition, the Chinese government is trying to give its IT companies a competitive advantage in the optical disk market. Thus in 2005 the Ministry for Information Industry (MII) approved a high-definition optical disk standard called Enhanced Versatile Disk (EVD).<sup>69</sup> Although EVD is a voluntary standard and faces competition from other international standards that have backing from several well-established companies, including Sony's Blu-ray consortium and Toshiba's HD-DVD alliance, it has a competitive advantage because it was developed with financial and political support from the Chinese government.

Most recently, the Chinese government is supporting the development of a domestic cell phone charger standard that may force U.S. handset manufacturers to redesign their equipment at considerable cost. Under the

standard, all mobile phones will have to use the same charger. Although the Chinese government is not mandating the standard, it will be "recommended" by MII. It's not clear when the new standard will be enforced, but when it is U.S. handset manufacturers that do not redesign their products will be effectively blocked from the market.

Additionally, both the Chinese and Korean governments support the development of a mandated domestic radio frequency identification (RFID) standard, without international participation or consensus. Neither country wants to pay royalties to use the existing electronic product code (EPC) standard developed through a consensus process by EPCGlobal with both U.S. and foreign participants. In China, the MII has supported research on RFID as one of six projects on IT in the five-year plan. However, work has not proceeded very far and there is support in other parts of the government for the EPC standard. The South Korean government is taking a more deliberate approach by making development of a domestic RFID standard a key part of a government-supported system that will tie together all of the country's broadband networks.<sup>70</sup> The system will include a new Korean RFID standard that products will have to conform to in order to interoperate with the new government-supported system. Since Korea plans to use the system to tie together every broadband and wireless service throughout the country, the Korean standard will have a huge advantage over the EPCGlobal standard. Again, the problem with China and Korea is not that their governments are involved in standards setting; it's that they are doing so without international participation or consensus and then forcing the standard on the market in order to keep out foreign competition. Foreign companies that want to do business in these countries will be forced to redesign their products and systems, at great expense, to conform to government mandated

domestic standards.

### ***Data Privacy***

Data privacy is another policy mercantilist nations can use, in the name of security, to block or limit foreign goods and services. In the new global economy, data flows throughout the world. Data on Chilean airline passengers may be processed in Brazil, while data on U.S. insurance customers may be processed in India. Such global systems of data processing are much more efficient than nationally-based siloed data functions, and save global consumers hundreds of millions of dollars. Moreover, in spite of what some privacy advocates say, there is no more risk of privacy breaches in this system as in one where data remains within nations generating the data because under most nations' privacy laws, including the United States, the domestic companies collecting the data (e.g., the Chilean airline or American insurance company) are liable for privacy breaches whether they process the data in their own nation or another.

This has not stopped nations from using the concern over data privacy for protectionist purposes. In particular, many nations have set requirements on the transfer of personal data. These type of protectionist policies create particular difficulties for U.S. and other IT companies that provide services that transfer data and could prevent these companies from operating them.

The leading case of this type of unfair protectionist tactic is the 1998 European Data Protection Directive that imposes wide-ranging obligations regarding the collection, storage and use of personal information relating to employees and customers. The measure regulates both European business and the European subsidiaries of U.S. and other non-EU companies.<sup>71</sup> The European Commission's directive has already forced foreign companies to move their operations to

Europe or risk being blocked from the European market. For example, many U.S. companies have moved operations such as payroll processing to Romania, Hungary, or the Czech Republic because these countries have data protection laws that comply with the EU Directive.<sup>72</sup> But other nations, including the United States, are beginning to at least look to privacy laws as a way to restrict trade and favor domestic production over foreign. In particular, the "Privacy Rights and Oversight for Electronic and Commercial Transactions Act of 2006" (S. 3713[109]) would have made it virtually impossible for a U.S. company to offshore data on its U.S. customers, even if performing data management activities in another country would save its customers money.<sup>73</sup>

### ***Government Procurement***

Another way to block or limit foreign IT products and services is to put restrictions on government procurement. While it is not uncommon for countries to require their government agencies to procure domestic products and services (such as the U.S. "Buy America Act" of 1933) countries that sign onto the WTO's Government Procurement Agreement (GPA) have to let other GPA signatories sell to their governments. The problem is that many countries have not yet signed the GPA yet their companies expect to be able to sell to the U.S. government. So, these nations have no compunction in blocking U.S. and other foreign companies from selling to their governments while their companies are pursuing foreign government procurement deals. For example, China has yet to finalize its GPA negotiations and in 2003 draft a government procurement law that required local and federal government agencies to buy domestic goods and services with few exceptions. After the United States objected to the policy in 2005 China agreed to suspend the drafting of the implementation rules indefinitely, but if the U.S. government hadn't protested China

certainly would have implemented them. Yet, Lenovo, a Chinese company, recently sold 16,000 PCs to the U.S. State Department.

China is by no means alone. India, Indonesia, the Philippines, Malaysia, and Thailand all have rules that require government agencies to buy local goods and services. None of these five countries has signed the GPA, but that doesn't make what they are doing any less unfair. India, which is so anxious to attract U.S. offshore business, has its Purchase Preference Policy that favors any government business that makes an offer that is within 10 percent of the lowest bid. Indonesia gives special preferences for domestic sourcing and local content in government projects as well as requiring foreign companies to enter into joint ventures in order to bid on a project. To make matters worse, Indonesia may "ask" these foreign bidders to purchase and export the equivalent value in Indonesian products.

Similarly, the Philippines' Government Procurement Reform Act favors purchases from Filipino citizens and domestically owned companies. In particular, locally funded projects must procure their goods and services from companies that are at least 60 percent Filipino-owned. In Malaysia, the government's policy explicitly discriminates against foreign firms bidding for government projects and favors ethnic Malays over all other bidders to encourage technology transfer to local industries. Moreover, the government awards contracts without transparent or competitive bidding. Last, but not least, Thailand has a "Buy Thai" directive that discriminates against foreign producers and that has been used specifically to block imports of U.S. computers. In addition, the language in government instructions on some procurement tenders explicitly excludes non-Thai products from the bidding process.<sup>74</sup> All these countries are

aggressively pursuing offshored IT and business process work from the United States, but have essentially closed their government market to U.S. companies, including U.S. IT companies.

Mercantilist countries also can promote local procurement by urging national monopolies to purchase domestic IT goods and services. For example, in the 1980s Nippon Telegraph and Telephone Corporation (NTT), Japan's dominant telecommunications service provider, was privatized but remained majority owned by the Japanese government, which "encouraged" NTT to buy its telecommunications equipment only from Japanese companies. This limited U.S. companies' ability to access the market until the U.S. negotiated bilateral purchase agreements with Japan.

Another prime example of this type of unfair support is European and other government's financial and procurement assistance for Airbus, the second largest aerospace company in the world. In addition to financial assistance, the governments of the United Kingdom, France, Spain, and Germany politically and economically pressure governments (and in some cases national airline carriers) to purchase Airbus equipment.<sup>75</sup> In 2005 the United States initiated a WTO case, for which it provided additional evidence of WTO-violating practices in 2006 relating to EU governments' support for Airbus.<sup>76</sup> Yet, U.S. airlines are under no such pressure to buy airplanes from Boeing, the U.S. aerospace company and may elect to buy from Airbus instead.

### *Encryption*

Placing limits on or blocking foreign software code that is used to make information private (called "encryption") is another way that mercantilist nations can give their domestic software manufacturers

a boost by keeping their foreign competitors out of the market. Encryption technology enables data to be made more secure with only authorized users being able to read it. Because encryption is used to make products and services more secure, nations may justify their restrictive policies in the name of national security. Yet this is a fallacy. Governments can use both foreign and domestic encryption software for secure products and services—they just need to be able to have the encryption “keys” so that they will be able to access the information. Giving the government access to the “keys” is called “key escrow” because the government (and only the government—not an individual or a software vendor) gets to keep the “key” to unlock the encryption codes. The real reason nations are blocking foreign encryption is because they want to give the competitive advantage to their domestic competitors.

Two countries have policies that are so restrictive that they effectively prevent any encryption technology from being imported. China regulates the importation, distribution, and use of commercial encryption. Only foreign-owned entities may import and use commercial encryption products developed outside of China. This policy ensures not only that foreign companies cannot sell their encryption to Chinese companies, but it also requires that the Chinese government has access to the algorithms for all encryption available to its citizens. Russia uses a similar approach by regulating the importation and distribution of encryption products.<sup>77</sup> Technically a company could get an import license for its encryption products from the Russian Ministry of Trade, but it doesn’t generally approve foreign encryption products unless only a foreign subsidiary (as in China) uses them. So, both countries’ policies severely restrict U.S. companies’ access to the market.

### ***Refurbished Equipment***

Countries also can block or limit access to foreign IT goods by restricting imports of refurbished (used) equipment. In the IT sector in some developing countries refurbished equipment is very attractive because it can be purchased at much lower costs than new products while providing similar benefits to consumers. For example, a consumer in China may not be able to afford a new computer, but might be able to buy a used one. But China sees refurbished equipment as a threat, not a benefit, and so China’s Ministry of Commerce (MOFCOM) is drafting rules that would impose restrictions on the import of certain types of vaguely defined “key” used machinery and electronic products, which could encompass a multitude of items. Used computers could be blocked, for example, because they might create environmental pollution when they are discarded. Moreover, in order to qualify to sell refurbished equipment in China, foreign companies would need to obtain a license from the Chinese that would only be valid for one year. In addition, applicants would be required to provide documentation and submit their products to a technical evaluation. While China says security, public interest, and safety are the reasons for its policy, it’s likely that the true objective is to block used IT goods from the market since they will be less costly for consumers and will compete better against cheap domestic products.

### ***Blocking Telecommunications Investment and Services***

Many countries have liberalized their telecommunications markets, privatized their incumbent telecommunications operators, and set up telecommunications regulatory bodies. Nonetheless, many of these still protect their incumbent telecommunications operators by letting them block foreign competitors’ services,

often in violation of the WTO's General Agreement on Trade in Services (GATS) Basic Telecommunications Agreement. The result is that these operators are able to keep their foreign competitors out of the market by refusing to let them invest in domestic companies or to give them access to their networks or charging prohibitive network interconnection fees.

### ***Foreign Investment Limits***

Several countries limit foreign investment in domestic telecommunications services, often by arguing that these services are public utilities so it's in the public interest that they should be majority-owned by domestic shareholders or even by the government. Since there are no multilateral trade rules for FDI and the GATS commitments only apply to industries where countries have explicitly agreed to open their markets to foreign companies, there is nothing to stop countries from blocking foreign investment in telecommunications services, or any other industry they deem "sensitive." For example, there was nothing to prevent Venezuela from nationalizing its telecommunications services.

Similarly, several nations prevent foreign companies from having a majority ownership in domestic telecommunications service operators. So the Philippine government limits foreign ownership to 40 percent, Thailand allows only 49 percent as does China. These policies restrict market entry for foreign telecommunications service providers, particularly because providing this type of service is very capital intensive. Unless a service provider can afford to spend millions to build a separate telephone network, the only way for it to enter a market is to invest in an existing network. However, it's also very important for foreign firms to be able to have majority control. So mercantilist countries can use foreign ownership limits to have it both ways—get the benefits of investment

without giving up control of a valuable IT resource.

### ***Blocking or Limiting Telecommunications Interconnection***

Another way for mercantilist countries to limit foreign participation in their markets is to allow their telecommunications operators to make it difficult, if not impossible, for foreign operators to access their networks in order to transfer telephone calls from their subscribers into the country. The transfer of telephone calls and data between networks is called "interconnection." These agreements are often voluntary between service providers—they are essentially saying "I'll carry your traffic if you'll carry mine"—and either the market, or sometimes the government, sets the price of interconnection.<sup>78</sup> If a telecommunications operator cannot interconnect to a rival's network, it can't send telephone traffic or data back and forth on that network, so it won't be able to provide its service in that country. Or, if interconnection is very expensive, it will be more costly for the telecommunications operator to provide service, which will make its service less competitive.

The WTO's GATS annex on telecommunications (the Basic Telecommunications Agreement) specifically requires members to allow any service provider use of public telecommunications transport networks and services on a reasonable and non-discriminatory basis and also to interconnect with them. Nonetheless, many WTO member countries willfully ignore their commitments by refusing to force their dominant telecommunications service providers to open up their networks to foreign competitors. This is not surprising since until recently most developing countries' telephone companies were owned and operated by their governments and many still retain some government ownership. Consequently,

nations may believe they are protecting their own interests when they keep out competition, even though in the long run they are hurting themselves by keeping out new and innovative services that would cost less for consumers, raise productivity, and spur development.

India, which owns 26 percent of VSNL, its dominant international telephone company, refuses to force the company to allow foreign operators to interconnect at cable landing stations. These are points where long distance telephone and data traffic enter India via fiber-optic cables laid under the ocean. Also, because VSNL hasn't activated additional capacity on its undersea cables, India has an artificial shortage of bandwidth into and out of the country. This hurts Indian consumers by inflating the price of telephone and Internet service, but also prevents U.S. telecommunications operators from serving their global customers within India.<sup>79</sup> The country's refusal is particularly shortsighted because it makes its own offshoring businesses less competitive by making them pay more to provide their services.

Japan has perhaps the longest running practice of steadfastly protecting its incumbent telecommunications operator, NTT. The Japanese government sets interconnection rates charged by NTT that are several times higher than the rates in the United States and Europe. NTT also makes it difficult, if not impossible, for foreign providers to operate in the market by preventing them from providing access to emergency services. Similarly, NTT's wireless subsidiary, NTT DoCoMo, charges high mobile termination rates that prevent new wireless entrants from competing in the market since their services would be significantly more expensive. As a result, U.S. telecommunications operators cannot compete against NTT in the Japanese market because it's prohibitively expensive for them to let their customers make calls into

NTT DoCoMo's network and their customers can't access essential emergency services.<sup>80</sup>

Similarly the Taiwan government refuses to force its dominant telecommunications company, Chunghwa Telecom (CHT), to let its foreign competitors access its network. CHT makes it particularly difficult for competitors to negotiate reasonable interconnection arrangements. For example, CHT requires that non-CHT service providers' access to CHT's network can only be initiated by customers, which means that competitors cannot negotiate directly with CHT to interconnect but must get potential customers to change services—a very difficult prospect. Taiwan has no incentive to make CHT open its networks to competitors since until 2005 both CHT and Taiwan's telecommunications regulator were controlled by the Ministry of Transportation and Communication. Although Taiwan has since privatized CHT and created an independent regulator, conflicts of interest continue to linger. Consequently, Taiwan will continue to block U.S. telecommunications operators from its market.<sup>81</sup>

Mexico also protects its monopolistic telecommunications service provider, Telmex, by helping it to discriminate against foreign services. Despite the United States government's WTO dispute settlement that forced the Mexican regulator, COFETEL, to drop its discriminatory tariff on international telecommunications services, Mexico simply changed strategies. The latest is to shift all long distance interconnection charges to the company whose subscribers originate the calls—which means that when wireless subscribers from outside Mexico place calls to the country their wireless service providers will have to pay all interconnection charges. This scheme could cost U.S. wireless providers and their customers as much as \$400 million per year.<sup>82</sup> Telmex hardly needs the help since

it already has around 94 percent of the fixed line market and an estimated 77 percent of the wireless market through its mobile unit Telcel.<sup>83</sup>

### ***Blocking Internet Services***

Another way nations can unfairly support domestic IT companies is by blocking Internet services, often in the name of security or public safety, but sometimes without any particular justification. For example, the Chinese government has blocked Google and Yahoo! as well as other websites, such as Wikipedia. This is in contrast to China's domestic policy where instead of blocking an entire service it will simply filter the content to prevent users from seeing certain information, such as on political issues or the banned religious group, the Falun Gong. Furthermore, China's network firewall, known as the "Golden Shield" or "The Great Wall of China," filters content coming from Internet service providers outside of China. Filtering slows access to foreign websites significantly because the computers on which the services operate are located outside the country, which already makes them slower to deliver content to Chinese subscribers. While the Chinese government says it filters and blocks foreign websites to protect its citizens from dangerous content, another reason may be to give a competitive advantage to China's own Internet services, such as Baidu, its search engine. So when China blocked Google and Yahoo! it was helping Baidu, because Chinese consumers were forced to use that service when no competing services are available, and Baidu will be faster.

In addition, several countries block access to Skype, the Voice over IP (VoIP) service that allows users to make free or very cheap long distance telephone calls via the Internet. In 2005 the United Arab Emirates blocked Skype, probably at the request of the

country's incumbent telecommunications service provider, Etisalat, which was losing long distance revenue when many of its customers switched to Skype. In Korea, Skype launched its service in conjunction with Auction, a local company, but the Korean government has since charged that Skype's service is violating the country's telecommunications regulations. China also has regulatory restrictions on Skype's PC-to-phone service to protect its telecommunications service providers. All of these restrictions have the same result; they keep Skype (a U.S. company owned by EBay) out of potentially lucrative markets and prevent consumers from accessing a service that is significantly cheaper than domestic services.

### ***Conclusion and Policy Recommendations***

In an IT-driven global economy, virtually every nation wants thriving IT hardware, software, application and services industries, like the United States has. But to get there, many nations engage in widespread unfair trade practices in order to either favor domestic IT firms or force foreign (especially U.S.) IT firms to move facilities and good paying jobs there. If the United States hopes to continue to lead the world in IT and reduce its soaring trade deficit, it needs to see this for what it is: an assault on U.S. technology leadership—and standard of living.

There are three major steps that the U.S. government should take to turn back the tide of unfair trade.

#### ***Trade Enforcement***

- 1) **The USTR needs to be significantly more proactive in challenging nations that are violating the WTO or engaging in other unfair practices:** First we need to be more willing to enforce vigorously and unequivocally



other nations' IT trade commitments under the WTO. We can do this by making it clear to nations that they can't get the WTO's benefits if they don't meet its obligations. This means that the USTR needs to be more proactive in challenging nations that are violating the WTO or engaging in other unfair practices. The USTR's goal should be more than simply negotiating new trade agreements; it should also be making sure that existing trade agreements are followed.

- 2) **The administration should include the elimination of IT-based trade distortions among several important priorities when negotiating new bilateral trade agreements:** When WTO rules don't go far enough in limiting mercantilist actions, we need to make sure that market-based IT trade is a higher priority when we negotiate bilateral trade agreements. U.S. government should require other nations to dismantle their host of protectionist and mercantilist laws, regulations, and practices targeted at the IT industry before they enter into these agreements with us.
- 3) **Congress can play an important supporting role. To start with Congress should conduct hearings into the many and systematic strategies countries are using to challenge America's competitive advantage in IT:** While many of the tools for enforcement of global trade policies are in the hands of the administration, hearings can shine a strong light on these coordinated and deceptive practices and show that they are not random, isolated, or accidental.

### *Resources*

- 4) **Congress needs to increase USTR's appropriation so that it**

**will have more resources to focus on trade enforcement:** USTR's proposed budget for FY2008 is \$44 million. But much of that goes toward negotiating new trade agreements, as opposed to a vigorous enforcement effort. Congress should consider increasing the budget to at least \$60 million with the new resources devoted to enforcement and the fight against unfair trade practices countries are using against us

- 5) **Congress should encourage companies to build WTO cases by allowing them to take a 25 percent tax credit for expenditures related to bringing WTO cases:** Even if Congress gives the USTR more resources, government alone cannot investigate all potential WTO cases. The private sector is deeply engaged in the problems caused by unfair trade practices, while the government is a step away. Why don't companies do more? It's because they have an incentive to be "free riders"—taking advantage of cases filed by the government or prepared by other companies. Companies that do bring cases to the USTR are acting on behalf of the U.S. government. So what's good for General Motors is, in this case, good for the country. The U.S. should help countries in this fight by giving them a 25 percent tax credit for expenditures related to bringing a WTO case.

### *Education*

- 6) **The U.S. government should undertake a major effort to get our message out to the world that the keys to prosperity are innovation, IT development and usage, and intellectual property protection:** America needs to educate the rest of the world on the importance of fair, open, and reciprocal trade, particularly in IT.

We are already losing ground in a global trade war to other nations that have made it a priority to impose their world view on developing countries at every opportunity. The European Union is undertaking a global effort to convince developing nations of their world view and we need to fight back if we don't want to lose our leadership position.

One way to do this is by expanding our regulatory and legal training programs to bring in students, officials, and businesspeople from developing countries and providing training on the principles of a fair, open, and reciprocal trading system. Several government agencies already run programs to train regulatory and legal officials, such as those at the Federal Communications Commission, the National Telecommunications Information Agency, the Department of Justice, the State Department and U.S. Agency for

International Development's funding for the U.S. Telecommunications Training Institute. But we need to do more. EU and Korea officials are actively recruiting trainees from other nations and turning them into missionaries to spread their trade message. We can't afford to be idle while they shape a global competition and trade policy that encourages countries to devalue intellectual property.

Trade is at the crossroads with one path leading to neo-mercantilism and beggar-thy-neighbor policies and the other to market-driven commerce and expanding-the-pie investments. The United States can lead the world down the right path by rigorously enforcing international and bi-lateral trade rules and by showing the world that market-driven commerce is the best way to achieve robust and sustainable domestic and global prosperity.

## Endnotes

1. The authors thank the following individuals for providing input to the report: Peter Morici and John Zysman, as well as ITIF staff John Anderson, Daniel Castro, Dan Correa and Torey Liepa.
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3. “Foreign Trade Statistics: Annual Trade Highlights,” U.S. Census Bureau: <[www.census.gov/foreign-trade/statistics/highlights/annual.html](http://www.census.gov/foreign-trade/statistics/highlights/annual.html)>.
4. Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*: <[www.adamsmith.org/smith/won-index.htm](http://www.adamsmith.org/smith/won-index.htm)>.
5. To see why, consider a nation in which average productivity among existing firms increases 2 percent per year for 5 years. After 5 years, national productivity is up by almost 11 percent. To achieve a similar increase in total productivity through an industry mix strategy, a nation would have to replace 20 percent of its jobs with average value-added per worker with jobs having a value-added of over 50 percent more, an unlikely transformation at best.
6. Yet, raising the productivity of all clusters has about the same effect on income as shifting to higher productivity clusters. In other words, a strategy of raising productivity in existing firms is just as effective as attracting or growing higher productivity industries. Moreover, raising the productivity of non-traded firms (e.g., firms in industries like retail, health care, local government) whose output is consumed almost entirely by the nation’s residents can have even larger benefits to the region, as most of the benefits will go to area residents in the form of lower prices and to workers in the form of higher wages. Michael E. Porter, “The Economic Performance of Regions,” *Regional Studies* 37.6-7 (Aug./Oct. 2003): 568.
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70. The system is called "IT839," which provide a "ubiquitous sensor network" encompassing *eight* services, *three* infrastructure projects, and *nine* new or upgraded devices.
71. When U.S. businesses realized that the EU was not going to issue a general ruling that U.S. policy was compliant with the directive and that individual contracts for information exchanges could not be easily negotiated, they urged the U.S. Department of Commerce to develop a "Safe Harbor" arrangement with the EU, which would allow the U.S. to be in compliance with the directive. Had the U.S. government not acted U.S. businesses that engage in the exchange of information and that sell to the EU would have been shut out of the EU market.
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(A) the business enterprise provides the notice of privacy protections described in sections 502 and 503 of the Gramm-Leach-Bliley Act (15 U.S.C. 6802 and 6803) or required by the regulations promulgated pursuant to section 264(c) of the Health Insurance Portability and Accountability Act of 1996 (42 U.S.C. 1320d-2 note), as appropriate;

(B) the business enterprise complies with the safeguards described in section 501(b) of the Gramm-Leach-Bliley Act (15 U.S.C. 6801(b)), as appropriate;

(C) the consumer is given the opportunity, before the time that such information is initially disclosed, to object to the disclosure of such information to such foreign branch, affiliate, subcontractor, or unaffiliated third party; and

(D) the consumer is given an explanation of how the consumer can exercise the nondisclosure option described in subparagraph (C)”. Privacy Rights and Oversight for Electronic and Commercial Transactions Act of 2006, S. 3713:

<[www.govtrack.us/congress/billtext.xpd?bill=s109-3713](http://www.govtrack.us/congress/billtext.xpd?bill=s109-3713)>.

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## **About the Authors**

Julie A. Hedlund is a Senior Analyst at the Information Technology and Innovation Foundation. She is the author of a paper, "Patents Pending: Patent Reform for the Innovation Economy." She also has provided instruction to government officials and private sector representatives from Africa, Asia, Eastern Europe, and Central and South America on Internet regulatory and trade policy for the U.S. Telecommunications Training Institute since 2001.

Dr. Robert Atkinson is President of the Information Technology and Innovation Foundation. He is also author of the *The Past and Future of America's Economy: Long Waves of Innovation that Power Cycles of Growth* (Edward Elgar, 2005).

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