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The Theory and Practice of Free Trade

Since the end of World War II the U.S. share of world income has fallen, while U.S. trade with the rest of the world has increased. Many believe that these two trends are not coincidental. U.S. firms that once dominated automobile, steel, and consumer electronics industries face stiff competition from Japan and increasing competition from South Korea and other industrializing countries.

In response to the changing pattern of world trade, the automobile, steel, semiconductor, and other industries have requested and received increased trade protection in the form of voluntary export restraints, countervailing duties, and antidumping lawsuits. The trend toward trade liberalization, beginning with the Generalized Agreement on Tariffs and Trade (GATT) in 1947, appears to be changing as the United States and other countries escalate their use of protection to limit imports—especially imports from developing countries.

The perception that liberalized trade contributes to unemployment has been a primary cause of the rise in protection. Indeed, much of the debate surrounding the North American Free Trade Agreement (NAFTA) has focused on the question of whether free trade with Mexico will take jobs away from the United States.

Does free trade cause unemployment, or does it enhance economic growth? In this article, we examine the case for free trade in theory and in the light of recent experience. Fortunately, there is now a good deal of data on trade and protection from numerous countries to use in assessing the role of trade in economic performance. Despite some theoretical exceptions to arguments for free trade, the data suggest that free trade has worked best in practice.

Comparative advantage and international trade

The most fundamental argument for international trade is that it enables a country to expand the quantity of goods and services it consumes. Through imports, a country can acquire goods and services that it either cannot produce at home or can produce at home only at a cost that is greater than the cost of obtaining them indirectly by exchanging them for the exports it produces. In other words, through trade, a country can obtain goods and services with greater efficiency by specializing in those activities in which the country has a *comparative advantage*. For example, the United States can spend its unique talents in developing computing and communications technology while Japan devotes its efforts to consumer electronics. If Japan did not perform these tasks, the United States would have to shift resources from other activities into the production of camcorders, flat-panel displays, TV sets, and other items that the United States currently imports.

David Ricardo developed the principle of comparative advantage in 1817. It says that every country, no matter how inefficient in its overall production structure, can always profitably export

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A Simple Example of Comparative Advantage

The concept of comparative advantage between countries is analogous to exchange between individuals. Suppose a lawyer can write five briefs or type two pages of text in an hour, while a secretary can write one brief or type two pages of text in an hour. Is there room for trade between the lawyer and the secretary?

Although the lawyer can write more briefs and type just as fast as the secretary, it is worthwhile for the lawyer to specialize in writing briefs and the secretary to do the typing. Trade between the secretary and lawyer leads to higher output.

Suppose that the lawyer and the secretary do not trade and each spends half of an eight-hour day typing and writing briefs. The lawyer would write twenty ($20 = 4 \times 5$) briefs and type eight pages ($8 = 4 \times 2$), while the secretary would write four briefs ($4 = 4 \times 1$) and type eight pages ($8 = 4 \times 2$). Combined output for the lawyer and the secretary would be twenty-four briefs and sixteen typed pages.

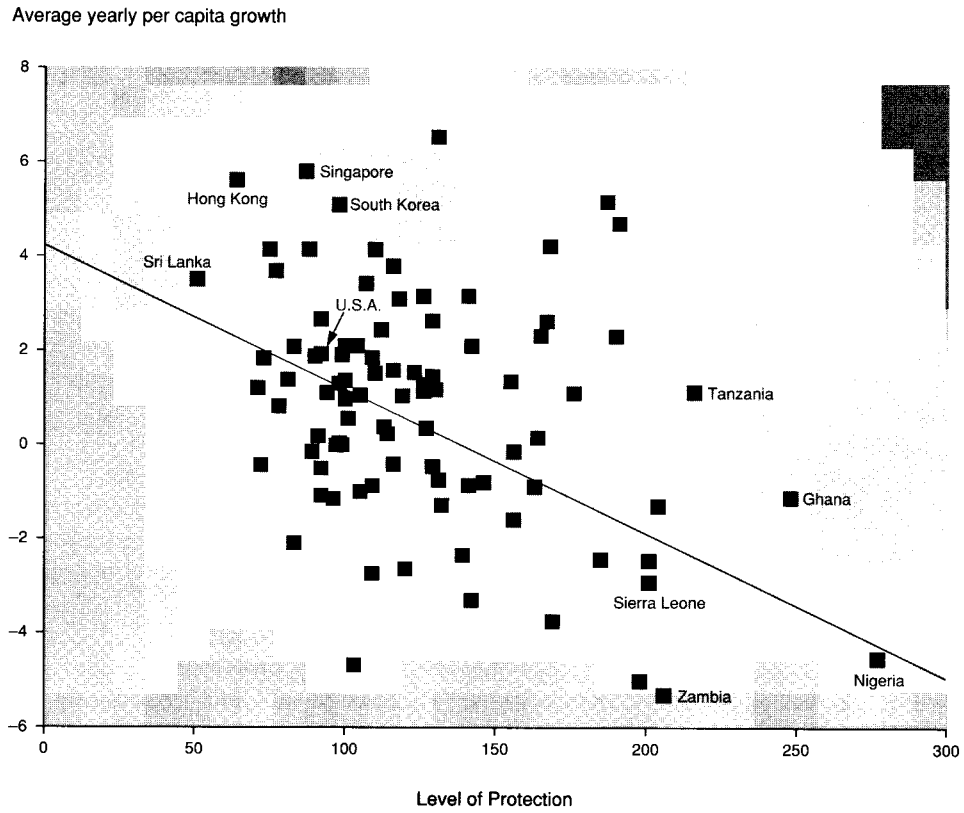
However, if the lawyer and secretary traded services, and the lawyer specialized in writing briefs and the secretary specialized in typing, their combined output would be forty briefs ($40 = 8 \times 5$) and sixteen typed pages ($16 = 8 \times 2$), which is clearly an increase in overall production. The lawyer has a comparative advantage in writing briefs, and the secretary has a comparative advantage in typing. The same basic principle applies to exchange between countries. Countries gain from trade because they obtain goods and services more cheaply by specializing in activities in which they have a comparative advantage.

some goods to pay for its most desired imports. A country's wages reflect its general productivity level and its overall standard of living, but they do not determine its competitiveness or which goods it ultimately exports. Countries with high overall productivity will have high wages, and countries with low overall productivity will have low wages.

What matters for trade is that within countries different industries are more productive than others. It is unavoidable that each country has industries with both higher than average and lower than average productivities. Because a country's high-productivity industries need only pay that country's competitive market wage, these industries will have lower relative costs and will be able to compete in world markets. This principle is the basis for trade. For example, the United States has higher wages than Mexico, but this difference does not prevent the United States from selling products to Mexico. On the contrary, U.S. industries with higher than average productivities, such as the computer industry, can export substantial amounts to Mexico at a lower cost than Mexico can produce them. Likewise, Mexico will export goods and services from its industries with higher than average productivities because these industries will have a cost advantage in the United States. (See the box entitled, "A Simple Example of Comparative Advantage.")

Although we usually think of the benefits of international trade as limited to the exchange of goods and services, perhaps the greatest benefit of international commerce results from the transmission of ideas. Throughout history, international trade has served as the principal means by which new goods (such as the potato), services (such as the music of the Beatles), and processes (such as Japanese just-in-time manufacturing) have spread around the globe. Even rediscoveries of lost civilizations have led to new ideas about furniture, decoration, and art. Our alphabet was devised to keep international trading records on Phoenician ships without using highly trained scribes.

Figure 1
Growth Per Capita and Level of Protection, 1976–85



NOTE: Level of protection is defined by the real exchange rate distortion.
SOURCE OF PRIMARY DATA: Dollar (1992).
Summers and Heston (1991).

The effects of protection

Perhaps one of the best natural tests of whether free trade works can be found in the experience of developing countries. In the 1950s and 1960s, many developing countries adopted the *import substitution industrialization policy* expounded by Raúl Prebisch. The idea, also known as the *dependency theory*, was that if poor countries wanted to develop, they would have to start producing manufactured goods rather than continue to rely on imports of these goods from developed countries in exchange for exports of primary products. The fear was that as income rose, the demand for manufactured products would increase relative to primary products, and this change would lead to a lower relative price for primary products in international markets. In other words, if the poor countries were ever to become rich, they would have to substitute their own domestically produced manufactured goods for manufactured imports. This policy was implemented by imposing high trade barriers on imports from developed countries.

After thirty years, however, the evidence clearly points to the failure of highly protected import substitution trade regimes and the success of outward-oriented open trade regimes. Figure 1 plots the growth experience of developing countries against their level of protection as measured by the country's real exchange rate distortion. The real exchange rate distortion is a practical

measure of the degree of protection.[1] As the figure shows, countries that have pursued highly protectionist policies, such as Tanzania, Nigeria, and Ghana, grew much more slowly than the relatively open economies of Southeast Asia, such as Hong Kong, South Korea, and Singapore.[2]

The basic problem with the import substitution strategy is that it assumes development can only occur through manufacturing and that it is only possible to develop manufacturing by protecting it. To be successful, however, countries have not had to rely solely on manufactured goods production. Regardless of the economic sector—manufacturing, agriculture, or mining—countries have done best by exploiting their natural comparative advantage. In fact, after moving toward a more liberalized trading environment, most countries increase productivity and growth in agriculture as well as manufacturing.

In twenty-nine episodes of trade liberalization analyzed by Michaely, Papageorgiou, and Choksi (1991), growth increased in both the manufacturing and agriculture sectors after liberalization (*Table 1*). Moreover, growth in most agricultural sectors increased not only after the liberalization period but also during the process of liberalization. In other words, for many countries, the benefits of liberalization have been widespread and immediate. Evidently, market economies are sufficiently flexible in most countries to allow the liberalized sectors to expand more quickly than the once-protected sectors contract.

Another flaw in the import substitution theory is the implicit assumption that international competition does not matter to a thriving and strong manufacturing sector. In countries with an inward-looking import substitution policy, firms have no incentive to innovate. The lack of competition leads to high-priced, poor-quality products and retards economic growth. For example, in 1870 Argentina had a larger per capita income level than Japan or Germany. But after more than one hundred years of intense government intervention and high protection, Argentina was at the lower end of the world distribution of income. Until the late 1980s, a 1968 Ford Falcon was one of the finest, most luxurious cars available in Buenos Aires.

The lesson is that outward-oriented policies are a much stronger conduit for economic growth and advancement than protectionist import substitution policies. In highly protected regimes, resources are attracted to industries that do not reflect the comparative advantage of the country. Moreover, protected industries, because they lack the incentive to innovate, produce high-cost, inferior products.

Common misperceptions

Public understanding of international trade issues is often hampered by an array of misperceptions. In this section, we evaluate the logical and empirical underpinnings of several common arguments.

Exports are good, imports are bad. In discussions of a country's trade balance we often hear terms that are filled with value judgements. For example, a *worsening* trade balance implies that imports are growing faster than exports, while an *improving* trade balance implies that exports are growing faster than imports. However, by itself, a trade surplus or deficit is not inherently bad or good. Over time, a U.S. trade deficit must be followed by a U.S. trade surplus. If this were not true, then it would imply that other countries are willingly providing goods to the United States without the expectation of repayment.

[1] *As measured by Dollar (1992). The real exchange rate distortion is a measure of the degree to which a country's tradable goods prices are distorted by domestic trade policies. The greater the amount of domestic protection is, the larger the real exchange rate distortion. Other measures of protection, such as the effective rate of protection and its black market exchange rate premium, also show a strong negative correlation with economic growth. See Gould and Ruffin (1993) for a detailed empirical examination of the relationship between growth and trade regime.*

[2] *Although Southeast Asian economies are relatively open to trade, this does not imply a lack of government intervention. Government protection of import-competing industries in these economies is often undone by government support of export industries. In other words, resources that would be attracted away from export sectors to the import-competing sectors because of protection are kept in the export sectors because of export subsidies. Consequently, the resource misallocation and the price distortion between exports and imports is relatively low.*

Table 1
Summary of Manufacturing and Agricultural Performance Before, During, and After Liberalization (Real Annual Percentage Rate of Growth)

	PtL	*T*	*T* + 1	*T* + 2	*T* + 3
Manufacturing	6.7	5.3	6.9	6.9	8.0
Agriculture	2.8	2.9	5.5	2.8	3.9

PtL, average of three years up to liberalization
T Year of liberalization
T + 1 One year after liberalization
T + 2 Two years after liberalization
T + 3 Three years after liberalization
SOURCE: Michaely, Papageorgiou, and Choksi (1991).

When looking at trade balances this way it is easy to see that the cost of imports are exports. When a country exports something, it gives up the products of its resources; when a country imports something, it adds to the quantity of goods it can consume. What a country can consume at home equals what it produces *plus* its imports *minus* its exports. Thus, from the standpoint what a country can consume, imports are good. The proper concept is what economists call the *terms of trade*, the quantity of imports a country receives in exchange for a given quantity of its exports. The larger the terms of trade, the better. This basic truth was discovered many years ago by David Hume, Adam Smith, and David Ricardo as they developed a rationale to counter the doctrine of mercantilism.

Mercantilists were a group of business writers in the seventeenth and eighteenth centuries who argued that a nation was like a business. This analogy, however, suffers from the fallacy of composition: what is true for a part need not be true of the whole. The mercantalists mistakenly argued that it was better to sell more to foreigners than to buy from them. In this way, it was claimed, a country with a "favorable trade balance" would benefit the most from international trade. This language is still with us today, reminding us of a quotation from John Maynard Keynes (1936, 383):

> [T]he ideas of economists..., both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist.

We often are guilty of a good deal of Orwellian doublethink when it comes to exports and imports. When trading with a friendly nation, like Japan, it is considered bad to export less to them than we import. But when we consider trade with an enemy, such as the former Soviet Union at the height of the Cold War or Saddam Hussein's Iraq, it is considered treason export anything at all to them. For some reason, in times of war or tension, we can see through the flows of money and focus on the flows of goods. Just think of imports of food into starving Somalia. Are the Somalians worse off? Obviously not. A trade "deficit" is perhaps best thought of as a surplus: the value of goods coming into a country exceeds the value of goods leaving the country.

Trade and economic powerhouses. Another reason some observers consider trade deficits bad stems from the notion that a country with a huge trade surplus is an economic powerhouse. Some

International Capital Movements and the Balance of Trade

The balance of trade reflects how long a country has been a borrower or lender. To understand this concept, let us examine the basic structure of a country's balance of payments. Let X = Exports, M = Imports, T = net gifts or unilateral transfers to foreigners, ΔB = net new borrowing from abroad, B = net indebtedness to the rest of the world, and r = the rate of interest on foreign indebtedness. A country's balance of payments must be

$$X + \Delta B = T + M + rB.$$

The left-hand side of the equation refers to receipts from foreigners; the right-hand side refers to payments to foreigners. These must always balance. If $\Delta B > 0$, a country is borrowing; if $B > 0$, a country is a net debtor. If $\Delta B < 0$, a country is lending, and if $B < 0$, a country is a net creditor. A country is considered to be a relatively young, or immature, borrowing nation when its net indebtedness, B, is small compared with its net new borrowing, ΔB. In this case, imports will be greater then exports ($M > X$). A country is considered to be a relatively mature borrowing nation when the interest it pays on foreign indebtedness, rB, is larger than its net new borrowing from abroad, ΔB. Here, exports are greater than imports ($X > M$). The opposite is true for an immature or mature creditor country. As a consequence, trade surpluses or deficits are simple reflections of the efficient means of allocating the world's capital.

people consider the country with the biggest surplus to be the most competitive and efficient nation on earth. Japan is one such candidate. This concept is flawed because trade deficits or surpluses today are the consequence of a country's current and historical position in the international flow of capital. International lending and borrowing allow countries to buy now and pay later, just as domestic lending and borrowing allow individuals to buy now and pay later. What must be true is that the imports of goods and services now must be paid for by the exports of goods and services later. There is no free lunch.

For example, in 1992 the United States had a merchandise trade deficit of $96 billion and net unilateral (mostly government) transfers to foreigners of $31 billion. To finance this outflow of $127 billion, the United States received about $10 billion in net investment income from foreigners, had a $55 billion surplus in service transactions (travel, license fees, insurance, and so forth), and borrowed approximately $62 billion. The reason the United States has a trade deficit is because it earns large amounts from direct investments abroad, has a comparative advantage in selling services, and is considered by many foreigners to be a good place to invest capital. The United States does not have a trade deficit because it cannot compete in world markets. (See the box entitled, "International Capital Movements and the Balance of Trade.")

Most recent discussion of the U.S. merchandise trade deficit has focused on the United States' billion-dollar bilateral trade deficit with Japan. To a large degree, Japan has a trade surplus because Japanese savings are relatively large compared with investment opportunities in Japan. In the same manner, the United States has a trade deficit because its savings are relatively low compared with investment opportunities in the United States. Strong prospects for growth and investment opportunities in the United States can increase the U.S. trade deficit, but this deficit is not impoverishing. Without international capital flows, U.S. rates of interest would be much higher than they actually are. Indeed, Americans who borrowed to build U.S. factories and homeowners who refinanced their homes in 1992 and 1993 at low rates of interest were beneficiaries of these international capital flows.

The level playing field. We often say we believe in free trade, but we want trade to be "fair" because

Table 2
Protection and Per Capita GDP Growth, 1960–85

Countries with Effective Rates of Protection Less than 40 Percent		Countries with Effective Rates of Protection Greater than 40 Percent	
Country	Average Annual Growth (1960–85)	Country	Average Annual Growth (1960–85)
Bangladesh	.6	Algeria	2.6
Burma	2.6	Angola	–1.7
Canada	2.4	Bolivia	1.3
Colombia	2.0	Burundi	.6
Costa Rica	1.8	Cameroon	3.6
Hong Kong	5.5	Central Africa	–.5
India	.4	Congo	3.6
Italy	3.4	Egypt	4.9
Malaysia	3.7	Ghana	–.8
Mexico	2.4	Honduras	1.3
Nepal	1.0	Ivory Coast	1.5
Pakistan	2.3	Liberia	.02
Peru	.9	Mauritania	.1
Philippines	1.4	Niger	.3
Portugal	4.0	Nigeria	–.2
South Africa	1.6	Rwanda	1.3
Singapore	5.4	Sierra Leone	.6
Spain	3.4	Somalia	–.1
Sri Lanka	1.2	Sudan	–.1
Syria	4.2	Tanzania	2.3
Thailand	3.5	Uganda	.6
Uruguay	.1	Zaire	–.2
United States	1.8	Zambia	–1.6
Average	**2.4**	**Average**	**.9**

SOURCE OF PRIMARY DATA: Summers and Heston (1991).
De Long and Summers (1991).

foreigners protect or subsidize some of their producers. This argument is convincing at the political level because it appeals to the sentiment in all of us to deal with others as they deal with us, but it is a red herring. One flaw is its reliance on the misperception that we benefit from exports and lose from imports. However, the core idea is the claim that the benefits of free trade only accrue if free trade is followed in other countries.

A country can still gain from free trade even if free trade is not followed elsewhere. Although protection in other countries can reduce a country's benefit from trade, a country will continue to gain from trade because it can obtain certain goods on cheaper terms by importing them rather than producing them at home. It makes little difference to the free trade country why it is getting the goods on cheaper terms. If it is because another country is subsidizing those exports, the free trade country is simply being provided a gift. As Table 2 suggests, in practice, the countries of the world that grow the fastest are precisely those that have the most open markets, despite high protection elsewhere in the world.

Foreign wages are too low. Perhaps the most subtle argument against free trade is that it is unfair to compete with countries paying wages that are far below domestic standards. To a textile

company in the United States, it may seem unfair to lose business to a Mexican company that is far less efficient. Should efficiency not be rewarded?

Efficiency is rewarded, but in a different way. The U.S. comparative advantage lies in areas in which our productivity advantages outstrip the disadvantages of having higher wages. Import-competing industries in the United States cannot meet the pace set by our most productive industries. In 1992, the United States had a trade surplus of nearly a $5 billion with Mexico, even though Mexico had higher tariffs than the United States, and the United States had wages that were about seven times higher than Mexican wages. In industries that manufacture and market machine tools, electrical machinery, and high-tech business equipment, Mexican workers have difficulty competing with highly skilled U.S. workers.

Low wages are not the key to exporting; if they were, countries with low wages like Bangladesh and Haiti would be great exporting nations. The truth is exactly the opposite: Germany and the United States are the world's largest exporting countries.

American goods create American jobs. Critics of free trade often claim that protection of domestic industries saves jobs. This rationale proceeds at two levels. First, the economically sophisticated argument holds that the benefits of free trade are derived from theoretical models that assume the economy has full employment. Because there is unemployment in the economy, free trade is not necessarily optimal because unemployment might actually increase.

It is true that theoretical arguments for free trade assume full employment and are taken from a simplified version of reality, but these assumptions work well in practice. In fact, absence of free trade may be more correlated to unemployment than the presence of free trade. The most important event in the history of U.S. protection was the 1930 Smoot–Hawley bill, which substantially raised tariff rates. The Smoot–Hawley tariff inspired a trade war between the United States and Europe that may have prolonged and deepened the Great Depression of the 1930s (Meltzer 1976, 460).[3]

Arguments for free trade, however, should not be based on jobs claims. Free trade is not about the number of jobs, but about the types of jobs and standards of living. U.S. experience shows that unemployment changes substantially over the course of business cycles but, over time, the number of jobs roughly equals the size of the working-age population. What matters in the long run is the type of future jobs that are available. If the goal of U.S. policy were to keep jobs, today we would have thriving horse-drawn carriage and blacksmith industries. By keeping the same jobs we have always had we discourage the development of new high-skill jobs that add to the stock of knowledge and generate innovation and growth.

A second argument simply holds that imports of textiles, consumer electronics, and automobiles cost domestic textile workers, electronics workers, and auto workers their good jobs and force them to take bad jobs. In other words, imports supposedly displace domestic workers. The slogan, "American goods create American jobs," has become a rallying cry, but often such sentiments are rooted in the fallacy of composition. What is true for the part is not necessarily true for the whole. It is certainly true that imports of textiles or cars can destroy American textile or automobile jobs. But it is not true that imports reduce the number of jobs in a country. A big increase in imports will inevitably cause an increase in exports or foreign investment. In other words, if Americans suddenly wanted more Japanese cars, eventually American exports would have to increase to pay for these goods. The jobs lost in one industry are replaced by jobs gained in another industry.

In a capitalist society, progress entails what Joseph Schumpeter called "creative destruction." Fundamentally, new job opportunities destroy old job opportunities. The rise of manufacturing in the twentieth century destroyed jobs in farming. Jobs in the automobile and airline industries destroyed jobs in the railroad industry.[4] Imports are just another way of producing goods. As old jobs

[3] *President Hoover signed the Smoot–Hawley Act despite a petition from a rare consensus of 1,028 economists strongly warning of the dire consequences of higher tariffs.*

[4] *See Cox and Alm (1993) for a discussion of the U.S. experience with creative destruction.*

Table 3

The Correlation Between Future Unemployment Rates and Current Import Penetration or Export Performance, 1950–88

	Import Penetration	Export Performance
Australia	.252	.357*
Austria	–.363*	–.400*
Belgium	.830*	.810*
Canada	.046	.111
Denmark	–.240	–.142
Finland	–.445*	–.269
France	.814*	.829*
Germany	.421*	.406*
Greece	–.809*	–.721*
Iceland	–.601*	–.640*
Ireland	–.029	–.155
Italy	–.193	–.199
Japan	.363*	.467*
Luxembourg	–.575*	–.463*
Netherlands	.295	.414*
Norway	–.001	–.017
New Zealand	.468*	.467*
Portugal	–.075	–.101
Spain	.799*	.780*
Sweden	–.427*	–.422*
Switzerland	–.594*	–.549*
United Kingdom	.340*	.537*
United States	.390*	.350*

*Correlation significant at 5-percent level or above.

SOURCE OF PRIMARY DATA: Organization for Economic Cooperation and Development and the Centre for Economic Performance, 1950–88, Centre for Economic Performance, the London School of Economics.

disappear and new ones emerge, people and jobs are eventually matched, but periods of unemployment are inevitable as the economy continually adjusts to new ways of production and new goods.

Economic theory suggests that, for the economy as a whole, more exports lead to more imports, and vice versa, so that neither imports nor exports should correlate with widespread unemployment. Jobs lost and jobs gained roughly balance. Table 3 sheds some light on the correlation between unemployment rates and import penetration (the ratio of imports to gross domestic product) or export performance (the ratio of exports to gross domestic product). Data are from the twenty-three members of the Organization for Economic Cooperation and Development (OECD) for 1950–88.

The data suggest that there is no simple causal link between unemployment and import penetration or export performance. Correlations of import penetration with the following year's unemployment rate vary substantially among countries, from 0.814 in France to –0.809 in Greece. There is no statistically significant correlation for eight countries, and for nearly half the countries for which there is a significant correlation, the correlation is negative. Moreover, virtually the same pattern of correlation holds for export performance. There is no instance of a significant positive or negative correlation of imports with

the following year's unemployment that is not similar for exports.[5] Exports and imports are more related to each other than other macroeconomic factors, as one would expect since, ultimately, exports must pay for imports. In this case, as in others, practice follows theory.

A country can gain from strategic trade policy. New theories of international trade that emphasize monopolistic competition and international oligopolies have led some economists to think that free trade may be out of date (Krugman 1986). The new theories of trade have emphasized the importance of economies of scale, learning curves, and innovation. These new theories are incompatible with the assumption of perfect competition that lies behind the classical argument for free trade. Thus, in a real world environment, some have argued, a country might be able to follow an activist trade policy that promotes domestic industries at the expense of foreign competitors.

Strategic trade policy is usually based on one of two key ideas. The first is that a domestic industry is part of a world industry that earns monopoly profits. Subsidizing a domestic firm can secure more of the world's monopoly profits for a country. The second is that a particular industry, such as semiconductors, may confer spillover benefits on other domestic industries by lowering their costs and raising their rates of return. In this latter case, subsidizing the industry generating the spillover benefits may improve a country's total real income.

Proposals for the use of trade protection to benefit the domestic economy at the possible expenses of other countries have a long history. For many years, trade theorists have recognized the possibility that through a tariff a large country may be able to raise revenue by, in effect, getting smaller foreign countries to pay indirectly into the national treasury. This rationale has been called the *optimum tariff argument.*

The difficulties with all such trade policy arguments are threefold. First, such policies assume that foreign governments will not retaliate. Foreign retaliation can reverse any potential gain anticipated from domestic protection. Second, as discussed in more detail later, most arguments for protection assume that tariffs and subsidies are imposed by a benevolent dictator, rather than political parties representing special interest groups. Most trade policy decisions, however, are not determined by what is in the best interests of the whole country; usually they are the result of political lobbying. Finally, strategic trade policy conclusions are based on theoretical models, but the implementation of the policy relies heavily on empirical estimates of industry demand and supply that can vary substantially over time. Given these problems, it is unlikely that any government could, even if it had the power to do so, implement the optimal policy (Grossman 1986).

The problems of industrial policy

Since the 1980s, it has become increasingly popular to advocate industrial policy as a means of promoting specific domestic industries and a way to gain access to foreign markets. A common belief is that the United States is becoming deindustrialized as other nations grow at our expense. Many fear that deindustrialization is the result of supportive industrial policies of foreign governments and lackadaisical U.S. policy. However, no country, not even Japan, has clearly gained from industrial policy.

Many developed countries, including the United States, have experienced a growing comparative advantage in high-technology industries that caused a natural movement away from the labor- and capital-intensive products that utilize standardized technologies. Although this transition has led to a decline in manufacturing employment in the United States and other developed countries, it has not meant the deindustrialization of the United States per se. Among the OECD countries, the U.S. share of manufacturing output has increased slightly since the early 1970s. In 1990, the U.S. share of OECD manufacturing production was 37 percent, slightly higher than the U.S. share of total OECD population.[6] The relatively steady size of U.S. manufacturing pro-

[5] *This relationship also holds for the contemporaneous correlation with unemployment and import penetration or export performance.*

[6] *Dollar and Wolff (1993).*

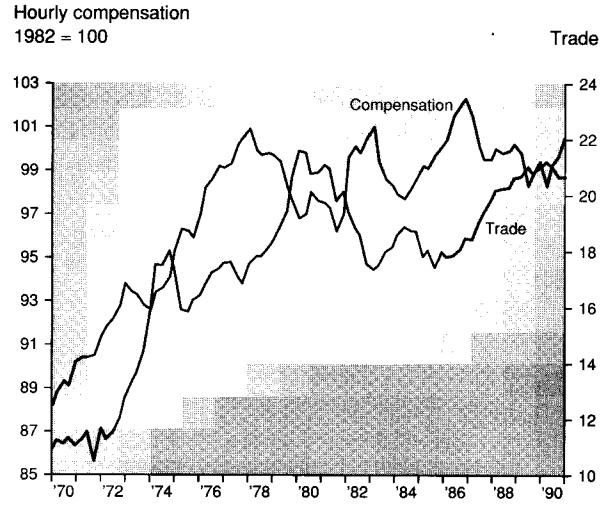
duction has been accompanied by expanded U.S. trade. Increased trade has not come at the expense of manufacturing.

Much has been made of the fact that from 1973 to 1992 U.S. hourly wages in manufacturing dropped from $12.90 to $11.50 (both in 1992 dollars), while during the same period, imports as a percent of GDP increased from less than 12 percent to about 21 percent. Has trade led to a drop in manufacturing wages? Looking only at hourly wages can be misleading. Hourly wages do not measure total hourly compensation. Since 1973, employee benefits (including medical and pension benefits) have increased substantially. Generally, a dollar paid in wages is equivalent to a dollar paid in employee benefits. Figure 2 plots real hourly compensation for manufacturing workers against trade as a share of gross domestic product (GDP) over the past twenty years. Hourly compensation includes wages, benefits, as well as employer contributions toward Social Security. As the figure shows, real manufacturing compensation has continued to rise along with trade throughout the 1970s and 1980s. Although the real hourly compensation of workers in some industries undoubtedly has fallen, overall it has not declined.

While U.S. manufacturing production has not fallen, is there any evidence to suggest that industrial policy and targeted protection has worked for other nations? We often hear the argument that Japan has done rather well during the postwar era in protecting and promoting certain industries. In particular, the Japanese Ministry of International Trade and Industry (MITI) has often been credited with consistently providing support to industries that could not have been competitive in world markets had they not been supported. Moreover, the phenomenal success and strength of the Japanese economy is often attributed to MITI's farsighted approach to industry support.

Has Japan been successful in promoting and protecting its industries? Japanese real per capita GDP growth has averaged a robust 6.1 percent a year since 1950. During the same period, U.S. real per capita growth averaged only 2.1 percent a year. But most of Japan's growth would probably have occurred without MITI's policies. First, over the past four decades, Japanese savings as a percentage of GDP was three to four times greater than that of the United States. This high level of savings generated a cheap and plentiful pool of funds for most of the growth differential between Japan and the United States (Barro 1991). In addition, Japan has also had the unique advantage of being able to catch up to the level of technology of the United States. With its large pool of savings, Japan has been able to invest in the latest technology without devoting the time required to develop the new technology. The United States, however, already possessing the newest technology during the postwar period, grew at the slower pace as the frontiers of technology were being pushed forward.

Figure 2
Real Manufacturing Compensation and Trade as a Share of GDP

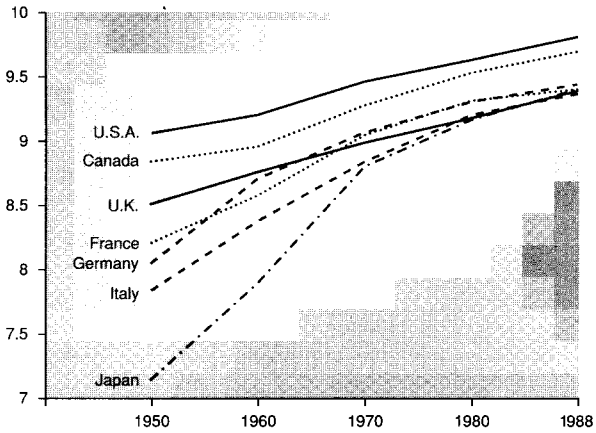


SOURCE OF PRIMARY DATA: Bureau of Labor Statistics.

Evidence now suggests that productivity growth in Japan and the other major industrialized nations is beginning to slow and converge with that of the United States. While U.S. real per capita income grew at a relative steady pace of 2.1 percent per year from 1950 to 1989, Japanese per capita income grew at a rapid 8.3 percent from 1950 to 1970, but slowed to 3.4 percent from 1970 to 1989. The same sort of convergence has occurred in other developed nations during the postwar era. However, despite relatively high growth rates among developed countries, the U.S. per capita income level continues to be the highest in the world (*Figure 3*).

Figure 3
Real Per Capita GDP in the G-7

Log levels, 1985 international prices



NOTE: The figures for Germany refer to the former West Germany.
SOURCE: Summers and Heston (1991).

Other developed nations are catching up to the United States' level of technological development. Their gains reflect the international diffusion of technology and accumulation of capital after World War II. Future U.S. leadership in technology, however, cannot benefit from U.S. protection. Technological growth will ultimately be determined by the skill level of U.S. workers. Recent economic evidence suggests that education and open markets are key elements to strength in technological innovation and growth.[7]

Although the Japanese government has promoted saving and investment though tax laws and other measures, the benefits of MITI's industrial policies are questionable. MITI did successfully funnel resources into the steel and semiconductor industries and promoted internationally competitive industries, but it is unlikely that the benefits of such a policy were greater than the costs. As Paul Krugman (1987) has pointed out, the relevant question is whether this particular use of Japanese resources generated a higher return for the nation than would have been earned had the private market allocated the funds. Although economists have long recognized the theoretical possibility of certain industries' generating national rates of return higher than private rates of return, in practice few industries actually fit this criterion. Moreover, even if some industries did fit the criterion, governments are ill-equipped to identify them.

Some of Japan's biggest success stories (TVs, stereos, and VCRs) were not the industries most heavily targeted by MITI. Moreover, as these products have become even more standardized, production has moved out of Japan to Korea and other Southeast Asian countries. The inability of governments to pick the winners is evidenced by MITI's actual or likely failures:

- MITI first wanted the Japanese automobile industry to produce only trucks and later wanted to limit the number of automobile companies to a few giants, in particular, attempting to keep Honda out of the car business. Of course, market forces eventually led MITI to abandon these plans, but the intervention generated costs that could have been avoided. Had MITI been successful, Japan would have paid an enormous price for this policy.
- The Japanese heavily targeted an analog version of high definition television (HDTV), but it appears that digital HDTV—the product of U.S. research and development —will be the industry standard.
- MITI is now investing in cold fusion, a procedure for creating nuclear power that has been debunked by most of the scientific establishment.

These examples and many others indicate that even Japan has done a poor job of picking the winning industries.

Similarly, the U.S. government's commercialization programs have produced only one clear success—the National Aeronautics and Space Administration's program for launching communications satellites from 1963 to 1973 (Cohen and Noll 1991). Government efforts to promote nuclear power and synthetic fuels have wasted billions (Cohen and Noll 1991).

Even if it were possible to recognize future winning industries with high rates of return, is it

[7] *See Gould and Ruffin (1993) and Roubini and Sala-i-Martin (1991).*

possible to subsidize them successfully? While most economists recognize the possibility of industries with technological spillovers and social benefits higher than private rates of return, they also realize that the political market that generates policies does not always allocate funds in a way that maximizes their economic efficiency. Governments rarely implement policies that maximize the country's well-being. Rather, governments maximize their political support and, in doing so, implement policies that benefit the most powerful and vocal interest groups. Indeed, there is much evidence to suggest that trade policy is primarily determined by special interest groups.

The politics of protection

If free trade maximizes a country's income and allows its citizens to achieve greater average welfare, why do we continually observe governments implementing policies that inhibit flows of goods and services between nations? Although government intervention is not necessarily inconsistent with the objective of maximizing national income (for instance, in the optimal tariff case), we rarely observe trade policies implemented to meet this objective. Trade policy usually reflects the lobbying efforts of special interest groups.

Economists increasingly are recognizing that trade policies are usually not designed to improve economic performance but, rather, aim to alter the distribution of income.[8] This consensus is based on the observation that trade policy is an endogenous outcome of the political process. In a democratic system in which politicians must achieve or maintain political office, special interest lobbying groups exert strong influence. Lobbying, either by informing the government of the support for a policy or by directly funding the election of a particular party, can influence electoral success and, hence, trade policies. Mindful of this, special interest groups, whose economic welfare can depend on the outcome of a particular trade policy, have an incentive to lobby for legislative outcome in their own favor.

Because almost every change in policy produces winners and losers, the political contest is competitive. Pro-protection forces are predominantly industry-based coalitions of capital owners and labor organized through industry associations and labor unions. The losers from import protection are consumers who face higher prices and the owners of factors of production employed in exporting industries that face the possibility of reduced access to foreign markets through retaliation.[9] Trade policy is the outcome of the political contest between these opposing forces, which is primarily determined by the lobbying expenditures of the two groups.

The gainers from trade policy tend to be highly concentrated in well-defined industry interest groups, while the losers tend to be far a more diffuse group of consumers. Consequently, while the total cost of a particular trade policy often exceeds the gains, the costs are widely dispersed over a large group of consumers who individually have little incentive to lobby against the policy. For example, in 1984 the U.S. Federal Trade Commission estimated that import quotas and tariffs on sugar benefited U.S. sugar producers by $783 million, while costing U.S. consumers $1.266 billion.[10] While the losses far exceeded the gains, the loss of $5 per average consumer was hardly enough to motivate these individuals to actively resist the policy. The political contest is biased in favor of the pro-protection coalitions because the benefits of trade policy are concentrated, while the costs are diffuse.

Because trade policy is typically used to alter the distribution of income rather than to increase national income, resources devoted to lobbying are wasted. Moreover, as discussed by Magee, Brock, and Young (1989) and Olson (1982), the value of resources expended on these unproductive activities can approach the size of the transfer itself. The reason is that lobbyists have an economic incentive to expend resources as long as potential benefits exceed their lobbying costs.

[8] *See Hillman (1989) and Quibria (1989) for surveys of this literature.*

[9] *See Gould and Woodbridge (1993) for a discussion of the incentives of exporting industries to oppose import protection if there is a possibility that the policy will induce retaliation by a trading partner.*

[10] *See Tarr and Morkre (1984).*

Thus, lobbying costs can mushroom to the level of potential benefits. Olson (1982) argues that these costs have limited the economic growth of nations. These findings are of concern to those mindful of the economic costs of trade policy. The resource costs in contesting trade policies may, in fact, dwarf the costs of the protection itself.[11]

Conclusion

It is difficult to overestimate the advantages a country derives from international trade. Every person can enjoy the technological and geographical advantages that exist any other place in the world. A villager in India may listen to local broadcasts on a Sony radio running on batteries produced in Korea. Americans and Europeans enjoy their tea times and coffee breaks, using Indian tea or South American coffee. A world without international commerce would not be a pleasant one.

The case for free trade can be made not only in terms of basic economic principles, but also in terms of the experience of countries that have followed protectionist policies. Arguments for protection are contradicted by the evidence. High-wage countries not only compete with low-wage countries, they in fact dominate world trade. Trade deficits or surpluses simply reflect consumption and investment decisions over time: they are not inherently bad or good. Moreover, there is no evidence that imports cause systematic unemployment or that exports create systematic employment. Both arguments are based on the fundamental fallacy of composition that what is good or bad for one is good or bad for all. Highly protected economies tend to grow slower than open economies, and industrial policies designed to promote particular industries usually backfire. Protectionist policies feed interest groups rather than fuel economic growth.

[11] *See Hillman (1989) for a review of the literature on the costs of rent-seeking.*

References

Barro, Robert (1991), "Economic Growth in a Cross-Section of Countries," *Quarterly Journal of Economics* 106 (May): 407–43.

Cohen, Linda R., and Roger G. Noll (1991), *The Technology Pork Barrel* (Washington, D.C.: The Brookings Institution).

Cox, W. Michael, and Richard Alm (1993), "The Churn: The Paradox of Progress," Federal Reserve Bank of Dallas *1992 Annual Report.*

De Long, J. Bradford, and Lawrence H. Summers (1991), "Equipment Investment and Economic Growth," *Quarterly Journal of Economics* 106 (May): 445–502.

Dollar, David (1992), "Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976–1985," *Economic Development and Cultural Change* 40 (April): 523–44.

———, and Edward N. Wolff (1993), *Competitiveness, Convergence, and International Specialization* (Cambridge, Mass.: MIT Press).

Gould, David M., and Roy J. Ruffin (1993), "Human Capital, Trade, and Economic Growth," Federal Reserve Bank of Dallas Research Paper no. 9301, January.

———, and Graeme L. Woodbridge (1993), "Retaliation, Liberalization, and Trade Wars: The Political Economy of Nonstrategic Trade Policy," Federal Reserve Bank of Dallas Research Paper no. 9323, July.

Grossman, Gene (1986), "Strategic Export Promotion: A Critique," in Paul Krugman, ed., *Strategic Trade Policy and the New International Economics* (Cambridge, Mass.: MIT Press).

Hillman, Arye L. (1989), *The Political Economy of Protection* (Chur, Switzerland: Harwood Academic Publishers).

Keynes, John M. (1936), *The General Theory of Employment, Interest and Money* (New York: Harcourt, Brace, and Co.).

Krugman, Paul (1987), *The New Protectionist Threat to World Welfare*, Dominick Salvatore, ed. (New York: Elsevier).

——— (1986), "Introduction: New Thinking About Trade Policy," in Paul Krugman, ed., *Strategic Trade Policy and the New International Economics* (Cambridge, Mass.: MIT Press).

Magee, Stephen, William Brock, and Leslie Young (1989), *Black Hole Tariffs and Endogenous Policy Theory: Political Economy in General Equilibrium* (New York: Cambridge University Press).

Meltzer, Alan (1976), "Monetary and Other Explanations of the Start of the Great Depression," *Journal of Monetary Economics* 2 (November): 455–71.

Michaely, Michael, Demetris Papageorgiou, and Armeane M. Choksi, eds. (1991), *Liberalizing Foreign Trade: Lessons of Experience in the Developing World*, vol. 7 (Cambridge, Mass.: Basil Blackwell).

Olson, Mancur (1982), *The Rise and Decline of Nations* (New Haven, Conn.: Yale University Press).

Quibria, M. A. (1989), "Neoclassical Political Economy: An Application to Trade Policies," *Journal of Economic Surveys*, Issue 2, 107–36.

Roubini, Nouriel, and Xavier Sala-i-Martin (1991), "Financial Development, the Trade Regime, and Economic Growth," NBER Working Paper Series, no. 3876 (Cambridge, Mass.: National Bureau of Economic Research, October).

Summers, Robert, and Alan Heston (1991), "The Penn World Table (Mark 5): An Expanded Set

of International Comparisons, 1950–1988," *Quarterly Journal of Economics* 106 (May): 327–68.

Tarr, David, and Morris Morkre (1984), *Aggregate Costs to the United States of Tariffs and Quotas and Imports* (Washington, D.C.: Federal Trade Commission.

Wynne, Mark A. (1992), "The Comparative Growth Performance of the U.S. Economy in the Postwar Period," Federal Reserve Bank of Dallas *Economic Review*, First Quarter, 1–16.