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Ye Olde Theory of Comparative Advantage

17 sound, but in valid

THE THEORY EXPLAINED in this chapter is false. It is the 192-year-old theory of comparative advantage, invented by David Ricardo in 1817. Ricardo was a London stockbroker, self-made millionaire, and Member of Parliament who turned economist after reading Adam Smith's celebrated *The Wealth of Nations* on holiday. It dates from a time when most of America was wilderness, railroads were an experimental technology, doctors still used leeches, and veterans of the American Revolution walked the streets of Philadelphia. The quickest route between the United States and China was by clipper ship, which took well over two months. Trade with Japan, however, was impossible, as the country had been sealed off from the outside world by the Shogun in 1635 and would wait another 37 years for the U.S. Navy's Commodore Perry to open it up. Great Britain was the world's largest manufacturer and trading nation. World economic output was about one half of one percent of what it is today.³³⁹ International trade was approximately three percent of that output,³⁴⁰ in comparison with today's 26 percent.³⁴¹

It is, however, absolutely necessary that we understand this quaint and unreliable theory because to this day it remains the core of the case for free trade. All the myriad things we are told about why free trade is good for us are boiled down to hard economics and weighed against the costs by this single theory and its modern ramifications. The rest is details and politics. If this theory is true, then no matter how high the costs of free trade, we can rely upon the fact that elsewhere in our economy, we are reaping benefits that exceed these costs. If it is false, we cannot. Free traders admit this, for although other theories of trade exist, their normative content is Ricardian.³⁴² The battle over Ricardianism is therefore decisive.

ABSOLUTE VS. COMPARATIVE ADVANTAGE

To understand comparative advantage, it is best to start with its simpler cousin: absolute advantage. The concept of absolute advantage simply says that if some foreign nation is a more efficient producer of some product than we are, then free trade will cause us to import that product from them, to the benefit of both nations. It benefits us because we get the product for less than it would have cost us to make it ourselves. It benefits the foreign nation because it gets a market for its goods. And it benefits the world economy as a whole because it causes production to come from the most efficient producer, maximizing world output.

Absolute advantage is thus a set of fairly obvious ideas. It is, in fact, the theory of international trade most people instinctively hold, without recourse to formal economics, and thus it explains a large part of public opinion on the subject. It sounds like a reassuringly direct application of basic capitalist principles. It is the theory of trade Adam Smith himself believed in.³⁴³

It is also false. Under free trade, America observably imports products of which *we* are the most efficient producer—which makes no sense by the standard of absolute advantage. This causes complaints like conservative commentator Patrick Buchanan's below:

Ricardo's theory...demands that more efficient producers in advanced countries give up industries to less efficient producers in less advanced nations...Are Chinese factories more efficient than U.S. factories? Of course not.³⁴⁴

Buchanan is correct: this is *precisely* what Ricardo's theory demands. It not only predicts that less efficient producers will sometimes win (observably true) but argues that this is good for us (the controversy). This is why we must analyze trade in terms of not absolute but *comparative* advantage. If we don't, we will never obtain a theory that accurately describes what *does* happen in international trade, which is a prerequisite for our arguing about what *should* happen—or how to make it happen.

The theory of comparative advantage has an unfortunate reputation for being hard to understand,³⁴⁵ but at bottom it simply says this:

Nations trade for the same reasons people do.

And the whole theory can be cracked open with one simple question:

Why don't pro football players mow their own lawns?

Why should this even be a question? Because the average footballer can almost certainly mow his lawn more efficiently than the average professional lawn mower. The average footballer is, after all, presumably stronger and more agile than the presumably mediocre workforce attracted to a badly paid job like mowing lawns. (If we wanted to quantify this efficiency, we could measure it in acres per hour.) Efficiency (also known as productivity) is always a matter of *how much output we get* from a given quantity of inputs, be these inputs hours of labor, pounds of flour, kilowatts of electricity, or whatever.

Because the footballer is more efficient, in economic language he has absolute advantage at mowing lawns. Yet nobody finds it strange that he would "import" lawn-mowing services from a less efficient "producer." Why? Obviously, because he has *better things to do with his time*. This is the key to the whole thing. The theory of comparative advantage says that it is advantageous for America to import some goods simply in order to free up our workforce to produce more-valuable goods instead. We, as a nation, have "better things to do with our time" than produce these less valuable goods. And, just as with the football player and the lawn mower, it doesn't matter whether *we* are more efficient at producing them, or the country we import them from is. As a result, it is sometimes advantageous for us to import goods from less efficient nations.

This logic doesn't only apply to our time, that is our man-hours of labor, either. It also applies to our land, capital, technology, and every other resource used to produce goods. So the theory of comparative advantage says that if we could produce something more valuable with the resources we currently use to produce some product, then we should import that product, free up those resources, and produce that more valuable thing instead.

Economists call the resources we use to produce products "factors of production." They call whatever we *give up* producing, in order to produce something else, our "opportunity cost." The opposite of opportunity cost is "direct" cost, so while the direct cost of mowing a lawn is the hours of labor it takes, plus the gasoline, wear-and-tear on the machine, et cetera, the opportunity cost is the value of whatever else these things could have been producing instead. Direct cost is a simple matter of efficiency, and is the same regardless of whatever else is going on in the world. Opportunity cost is a lot more complicated, because it depends on what other opportunities exist for using factors of production.

Other things being equal, direct cost and opportunity cost go up and down together, because if the time required to mow a lawn doubles, then twice as much time cannot then be spent doing something else. As a result, high efficiency tends to generate both low direct cost and low opportunity cost. If someone is such a skilled mower that they can mow the whole lawn in 15 minutes, then their opportunity cost of doing so will be low because there's not much else they can do in 15 minutes.

The opportunity cost of producing something is always the *next most valuable thing* we could have produced instead. If either bread or rolls can be made from dough, and we choose to make bread, then rolls are our opportunity cost. If we choose to make rolls, then bread is. And if rolls are worth more than bread, then we incur a larger opportunity cost by making bread. It follows that the *smaller* the opportunity cost we incur, the less opportunity we are wasting, so the better we are exploiting the opportunities we have. Therefore our best move is always to *minimize our opportunity cost*.

This is where trade comes in. Trade enables us to "import" bread (buy it in a store) so we can stop baking our own and bake rolls instead. In fact, trade enables us to do this for all the things we would otherwise have to make for ourselves. So if we have complete freedom to trade, we can sys-

tematically shrug off all our least valuable tasks and reallocate our time to our most valuable ones. Similarly, *nations* can systematically shrink their least valuable industries and expand their most valuable ones. This benefits these nations and under global free trade, with every nation doing this, it benefits the entire world. The world economy, and every nation in it, become as productive as they can possibly be.

Here's a real-world example: if America devoted millions of workers to making cheap plastic toys (we don't; China does) then these workers could not produce anything else. In America, we (hopefully) have more-productive jobs for them to do, even if American industry *could* hypothetically grind out more plastic toys per man-hour of labor and ton of plastic than the Chinese. So we're better off leaving this work to China and having our own workers do that more-productive work instead.

This all implies that under free trade, production of every product will automatically migrate to the nation that can produce it at the lowest opportunity cost—the nation that *wastes the least opportunity* by being in that line of business.

The theory of comparative advantage thus sees international trade as a vast interlocking system of tradeoffs, in which nations use the ability to import and export to shed opportunity costs and reshuffle their factors of production to their most valuable uses. And this all happens automatically, because if the owners of some factor of production find a more valuable use for it, they will find it profitable to move it to that use. The natural drive for profit will steer all factors of production to their most valuable uses, and opportunities will never be wasted.

It follows that any policy *other* than free trade just traps economies producing less-valuable output than they could have produced. It saddles them with higher opportunity costs—more opportunities thrown away—than they would otherwise incur. In fact, when imports drive a nation out of an industry, this must actually be good for that nation, as it means the nation *must* be allocating its factors of production to producing something more valuable instead. If it weren't doing this, the logic of profit would never have driven its factors out of their former uses. In the language of the theory, the nation's "revealed comparative advantage" must lie elsewhere, and it will now be better off producing according to its newly revealed comparative advantage.

QUANTIFYING COMPARATIVE ADVANTAGE

Let's quantify comparative advantage with an imaginary example. Suppose an acre of land in Canada can produce either 1 unit of wheat or 2 units of corn.³⁴⁶ And suppose an acre in the U.S. can produce either 3 units of wheat or 4 units of corn. The U.S. then has absolute advantage in both wheat (3 units vs. 1) and corn (4 units vs. 2). But we are twice as productive in corn and thrice as productive in wheat, so we have *comparative* advantage in wheat.³⁴⁷

Importing Canadian corn would obviously enable us to switch some of our corn-producing land to wheat production and grow more wheat, while importing Canadian wheat would enable us to switch some of our wheat-producing land to corn production and grow more corn.

Would either of these be winning moves for us?

Every 3 units of wheat we import will free up 1 acre of our land because we will no longer need to grow those 3 units ourselves. We can then grow 4 units of corn on that acre. But selling us that wheat will force Canada to take 3 acres out of corn production to grow it, so it will cost Canada $3 \times 2 = 6$ units of corn. Canadians obviously won't want to do this unless we *pay* them at least 6 units of corn. But this means we'd have to pay 6 units to get 4. So no deal.

What about importing Canadian corn? Every 4 units of corn we import will free up 1 acre of our land, on which we can then grow 3 units of wheat. Selling us those 4 units will force Canada to take $4 \div 2 = 2$ acres out of wheat production, costing Canada $2 \times 1 = 2$ units of wheat. So we can pay the Canadians what it costs them to give us the corn (2 units of wheat) and still come out ahead, by $3 - 2 = 1$ unit of wheat. So importing Canadian corn makes economic sense. And not only do we come out ahead, but because the world now contains one more unit of wheat, it's a good move for the world economy as a whole, too.

The fundamental question here is whether America is better off producing corn, or wheat we can exchange for corn. Every nation faces this choice for every product, just as every individual must decide whether to bake his own bread or earn money at a job so he can buy bread in a store (and whether to mow his own lawn or earn money playing football so he can hire someone else to mow it). The entire theory of comparative advantage is just endless ramifications of this basic logic.³⁴⁸

The above scenario all works in reverse on the Canadian side, so it benefits Canada, too. Free traders generalize this into the proposition that free trade benefits every trading partner and applies to every product and factor of production.³⁴⁹ As the late Paul Samuelson of MIT explains it, using China as the trading partner:

Yes, good jobs may be lost here in the short run. But still total U.S. net national product *must, by the economic laws of comparative advantage, be raised in the long run (and in China, too)*. The gains of the winners from free trade, properly measured, work out to exceed the losses of the losers.³⁵⁰ (Emphasis in original.)

LOW OPPORTUNITY COSTS EQUALS POOR NATION

Note that the opportunity cost of producing a product can vary from one nation to another even if the two nations' *direct* costs for producing the product are the same. This is because they can face different alternative uses for the factors of production involved. So having a low opportunity cost for producing a product can just as easily be a matter of having poor alternative uses for factors of production as having great efficiency at producing the product itself.

This is where underdeveloped nations come in: their opportunity costs are low because they don't have a lot of other things they can do with their workers. The visible form this takes is cheap labor, because their economies offer workers few alternatives to dollar-an-hour factory work. As Jorge Castañeda, Mexico's former Secretary of Foreign Affairs and a NAFTA critic, explains it:

The case of the auto industry, especially the Ford-Mazda plant in Hermosillo, Mexico, illustrates a well-known paradox. The plant manufactures vehicles at a productivity rate and quality comparable or higher than the Ford plants in Dearborn or Rouge, and slightly below those of Mazda in Hiroshima. Nevertheless, the wage of the Mexican worker with equal productivity is between 20 and 25 times less than that of the U.S. worker.³⁵¹

The plants in the U.S. and Japan are surrounded by advanced economies containing many other industries able to pay high wages. So these plants must match these wages or find no takers. The plant in Mexico, on the other hand, is surrounded by a primitive developing economy, so it only

needs to compete with low-paid jobs, many of them in peasant agriculture. As a result, the productivity of any one job does not determine its wage. Economy-wide productivity does. This is why it is good to work in a developed country even if the job you yourself do, like sweeping floors, is no more productive than the jobs most people do in developing countries.

If wages, which are paid in domestic currency, don't accurately reflect differences in opportunity costs between nations, then exchange rates will (in theory) adjust until they do. So if a nation has high productivity in most of its internationally traded industries, this will push up the value of its currency, pricing it out of its lowest-productivity industries. But this is a good thing, because it can then export goods from higher-productivity industries instead. This will mean less work for the same amount of exports, which is why advanced nations rarely compete in primitive industries, or want to. In 1960, when Taiwan had a per capita income of \$154, 67 percent of its exports were raw or processed agricultural goods. By 1993, when Taiwan had a per capita income of \$11,000, 96 percent of its exports were manufactured goods.³⁵² Taiwan today is hopelessly uncompetitive in products it used to export like tea, sugar and rice. Foreign competition drove it out of these industries and destroyed hundreds of thousands of jobs. *Taiwan doesn't mind one bit.*

WHAT THE THEORY DOES NOT SAY

The theory of comparative advantage is sometimes misunderstood as implying that a nation's best move is to have as much comparative advantage as it can get—ideally, comparative advantage in every industry. This is actually impossible by definition. If America had superior productivity, therefore lower direct costs, and therefore absolute advantage, in every industry, we would still have a greater margin of superiority in some industries and a lesser margin in others. So we would have *comparative* advantage where our margin was greatest and comparative disadvantage where it was smallest. This pattern of comparative advantage and disadvantage would determine our imports and exports, and we would still be losing jobs to foreign nations in our *relatively* worse industries and gaining them in our *relatively* better ones, despite having absolute advantage in them all.

So what's the significance of absolute advantage, if it doesn't determine which nation makes what? It *does* determine relative wages. If the U.S. were exactly 10 percent more productive than Canada in all industries, then Americans would have real wages exactly 10 percent higher. But because there would be no *relative* differences in productivity between industries, there would be no differences in opportunity costs, neither country would have comparative advantage or disadvantage in anything, and there would be no reason for trade. There would be no corn-for-wheat swaps that were winning moves. All potential swaps would cost *exactly* as much as they were worth, so there would be no point. And under free trade, none would take place, as the free market isn't stupid and won't push goods back and forth across national borders without reason.

Conversely, the theory of comparative advantage says that whenever nations *do* have different relative productivities, mutual gains from trade *must* occur. This is why free traders believe that their theory proves free trade is always best for every nation, no matter how poor or how rich. Rich nations won't be bled dry by the cheap labor of poor nations, and poor nations won't be crushed by the industrial sophistication of rich ones. These things simply can't happen, because the fundamental logic of comparative advantage guarantees that only mutually beneficial exchanges will ever take place.³⁵³ *Everyone* will *always* be better off.

It follows that trade conflicts between nations are always misguided and due solely to their failure to understand why free trade is always good for them. In the words of libertarian scholar James Bovard:

Our great-grandchildren may look back at the trade wars of the twentieth century with the same contempt that many people today look at the religious wars of the seventeenth century—as a senseless conflict over issues that grown men should not fight about.³⁵⁴

Comparative advantage is thus a wonderfully optimistic construct, and one can certainly see why it would be so appealing. Not only does it appear to explain the complex web of international trade at a single stroke, but it also tells us what to do and guarantees that the result will be the best outcome we could possibly have obtained. It enables a lone economist with a blackboard to prove that free trade is best, always and everywhere, without ever getting her shoes dirty inspecting any actual factories, dockyards,

or shops. She does not even need to consult any statistics on prices, production, or wages. The magnificent abstract logic alone is enough.

It is actually rather a pity the theory isn't true.

valid

THE SEVEN DUBIOUS ASSUMPTIONS

The theory of comparative advantage tends to provoke blanket dismissal by opponents of free trade. This is unfortunate, as its flaws are easy enough to identify and it can be picked apart on its own terms quite readily. These flaws, known to economics but mostly ignored, consist of a number of dubious assumptions upon which the theory depends. To wit:³⁵⁵

Dubious Assumption #1: Trade is sustainable.

We looked at this problem before, in Chapter Two, when we analyzed why trade, if paid for by assuming debt and selling assets, is not advantageous to the importing nation in the long run. But there is a flip side to this problem. What if a nation's *exports* are unsustainable? What if an exporting nation, like the decadent importing nation we previously examined,³⁵⁶ is running down an accumulated inheritance?

This usually means a nation that is exporting nonrenewable natural resources. The same long- vs. short-term dynamics we looked at before will apply, only in reverse. A nation that *exports* too much will maximize its short term living standard at the expense of its long-term prosperity. But free market economics—which means free trade—will perversely report that this is efficient.

The classic example of this problem, almost a caricature, is the tiny Pacific Island nation of Nauru, located roughly halfway between Hawaii and Australia. Thanks to millions of years of accumulated seabird droppings, the island 100 years ago was covered by a thick layer of guano, a phosphate-rich substance used for manufacturing fertilizer. From 1908 to 2002, about 100 million tons of this material was mined and exported, turning four-fifths of Nauru's land into an uninhabitable moonscape in the process. But for a few years in the late 1960s and early 1970s, Nauru had the world's highest per capita income (and tellingly acquired one of the

world's worst obesity problems). But after the deposits ran out, the economy collapsed, the nation was reduced to reliance upon foreign aid, and unemployment neared 90 percent.

Nauru is obviously an extreme case, but it is hardly the only nation making its way in international trade by exporting nonrenewable resources. The oil-rich nations of the Persian Gulf are the most obvious example, and it is no accident that OPEC was the single most formidable disruptor of free trade in the entire post-WWII era. But other nations with large land masses relative to population, such as Canada, Australia, Russia, and Brazil, also depend upon natural resource exports to a degree that is unhealthy in the long run. Even the United States, whose Midwestern agricultural exports rely upon the giant Ogallala Aquifer, a depleting accumulation of water from glacial times, is not exempt from this problem.

The implied solution is to tax or otherwise restrict nonrenewable exports. And that is not free trade.

or to invest the income in diverse investments for stable long-term income.

Dubious Assumption #2: There are no externalities.

An externality is a missing price tag. More precisely, it is the economist's term for when the price of a product does not reflect its true economic cost or value. The classic *negative* externality is environmental damage, which reduces the economic value of natural resources without raising the price of the product that harmed them. The classic *positive* externality is technological spillover, where one company's inventing a product enables others to copy or build upon it, generating wealth that the original company doesn't capture. The theory of comparative advantage, like all theories of free market economics, is driven by prices, so if prices are wrong due to positive or negative externalities, free trade will produce suboptimal results.

For example, goods from a nation with lax pollution standards will be too cheap. As a result, its trading partners will import too much of them. And the exporting nation will export too much of them, overconcentrating its economy in industries that are not really as profitable as they seem, due to ignoring pollution damage. For example, according to *The New York Times*:

Pollution has made cancer China's leading cause of death...Ambient air pollution alone is blamed for hundreds of thousands of deaths each year. Nearly 500 million people lack access to safe

drinking water...Only 1% of the country's 560 million city dwellers breathe air considered safe by the European Union.³⁵⁷

Free trade not only permits problems such as these, but positively encourages them, as skimping on pollution control is an easy way to grab a cost advantage.³⁵⁸

Positive externalities are also a problem. For example, if an industry generates technological spillovers for the rest of the economy, then free trade can let that industry be wiped out by foreign competition because the economy ignored its hidden value. Some industries spawn new technologies, fertilize improvements in other industries, and drive economy-wide technological advance; losing these industries means losing all the industries that would have flowed from them in the future. (More on this in Chapter Nine.)

These problems are the tip of an even larger iceberg known as GDP-GPI divergence. Negative externalities and related problems mean that increases in GDP can easily coincide with *decreases* in the so-called Genuine Progress Indicator or GPI.³⁵⁹ GPI includes things like resource depletion, environmental pollution, unpaid labor like housework, and unpaid goods like leisure time, thus providing a better metric of material well-being than raw GDP.³⁶⁰ This implies that even if free trade *were* optimal from a GDP point of view, it could still be a bad idea economically, *due to externalities*.

The problem of positive and negative externalities is quite well known, even to honest free traders, because externalities are, by definition, a loophole in *all* free-market economic policies. Free traders just deny that these externalities are big enough to matter. Or they propose various schemes to internalize them and make prices right.

Dubious Assumption #3: Factors of production move easily between industries.

As noted earlier, the theory of comparative advantage is about switching factors of production from less-valuable to more-valuable uses. But this assumes that the factors of production used to produce one product can switch to producing another. Because if they can't, then imports won't push a nation's economy into industries better suited to its comparative

advantage. Imports will just kill off its existing industries and leave nothing in their place.

Although this problem actually applies to all factors of production, we usually hear of it with regard to labor and real estate because people and buildings are the least mobile factors of production. (This is why the unemployment line and the shuttered factory are the classic visual images of trade problems.) When workers can't move between industries—usually because they don't have the right skills or don't live in the right place—shifts in an economy's comparative advantage won't move them into an industry with lower opportunity costs, but into unemployment.

This is why we so often hear of older workers being victims of free trade: they are too old to easily acquire the skills needed to move into new industries. And it explains why the big enthusiasts for free trade tend to be bright-eyed yuppies, well equipped for career mobility.

Sometimes the difficulty of reallocating workers shows up as outright unemployment. This happens in nations with rigid employment laws and high de facto minimum wages due to employer-paid taxes, as in Western Europe. But in the United States, because of our relatively low minimum wage and hire-and-fire labor laws, the problem tends to take the form of *underemployment*. This is a decline in the quality rather than quantity of jobs. So \$28 an hour ex-autoworkers go work at the video rental store for eight dollars an hour.³⁶¹ Or they are forced into part-time employment: it is no accident that by September 2009, the average private-sector U.S. work week had fallen to 33 hours, the lowest since records began in 1964, and has since only trivially rebounded.³⁶²

In the Third World, decline in the quality of jobs often takes the form of workers pushed out of the formal sector of the economy entirely and into casual labor of one kind or another, where they have few rights, pensions, or other benefits. Mexico, for example, has over 40 percent of its workers in the informal sector.³⁶³

This all implies that low unemployment, on its own, doesn't prove free trade has been a success. This is recognized even by the more intellectually rigorous free traders, such as former Federal Reserve Chairman Alan Greenspan, who has admitted that, "We often try to promote free trade on the mistaken ground, in my judgment, that it will create jobs."³⁶⁴ Greenspan is correct: even if free trade worked completely as promised, it would not increase the *number* of jobs, only their quality.³⁶⁵ And when we speak

of job gains and losses from trade, these are gross, not net, numbers, as people who lose their jobs due to trade will usually end up working *some-where*, however dismal.³⁶⁶

A recent study by the North Carolina Employment Security Commission explored the problem of workers displaced by trade. In 2005, North Carolina experienced the largest mass layoff in its history, at the bedding firm Pillowtex, costing 4,820 jobs. By the end of 2006, the workers' average wage in their new jobs was \$24,488—a drop of over 10 percent from before.³⁶⁷ A large number had been sidelined into temporary employment, often as health care aides.

Nationally, two-thirds of workers are working again two years after a layoff, but only 40 percent earn as much as they did previously.³⁶⁸ The human cost is obvious, but what is less obvious is the purely economic cost of writing off investments in human capital when skills that cost money to acquire are never used again. This kind of cost is most visible in places such as Moscow in the 1990s, when one saw physics PhDs driving taxis and the like, but America is not exempt from this problem.

There is also a risk for the economy as a whole when free trade puts factors of production out of action. As Nobel Laureate James Tobin of Yale puts it, "It takes a heap of Harberger triangles to fill an Okun gap."³⁶⁹ Harberger triangles represent the benefits of free trade on the standard graphs used to quantify them.³⁷⁰ The Okun gap is the difference between the GDP our economy *would* have, if it were running at full output, and the GDP it does have, due to some of our factors of production lying idle.³⁷¹ Tobin's point is simply that the benefits of free trade are quantitatively small, compared to the cost of not running our economy at full capacity due to imports.

Dubious Assumption #4: Trade does not raise income inequality.

The gains from free trade promised by the theory of comparative advantage are only promised to the economy as a whole, not to any particular individuals or groups thereof. So it is entirely possible that even if the economy as a whole gets bigger thanks to freer trade, many (or even most) of the people in it may lose income.

We looked at this problem a bit before, at the end of Chapter One.³⁷² Let's take a slightly different analytical tack and look again. Suppose that opening up a nation to freer trade means that it starts exporting more airplanes and importing more clothes than before. (This is roughly the situation the U.S. has been in.) Because the nation gets to expand an industry better suited to its comparative advantage and contract one less suited, it becomes more productive and its GDP goes up, just like Ricardo says. So far, so good.

Here's the rub: suppose that a million dollars' worth of clothes production requires one white-collar worker and nine blue-collar workers, while a million dollars of airplane production requires three white-collar workers and seven blue-collar workers. (Industries often differ in this way.) This means that for every million dollars' change in what gets produced, there is a demand for two more white-collar workers and two fewer blue-collar workers. Because demand for white-collar workers goes up and demand for blue-collar workers goes down, the wages of white-collar workers will go up and those of blue-collar workers will go down. But *most* workers are blue-collar workers—so free trade has lowered wages for most workers in the economy!

This is not a trivial problem: Dani Rodrik of Harvard estimates that freeing up trade reshuffles five dollars of income between different groups of people domestically for every one dollar of net gain it brings to the economy as a whole.³⁷³ And on top of this, we still have all the increased-inequality problems we looked at in Chapter One.³⁷⁴

Dubious Assumption #5: Capital is not internationally mobile.

Despite the wide scope of its implications, the theory of comparative advantage is at bottom a very narrow theory. It is *only* about the best uses to which nations can put their factors of production. We have certain cards in hand, so to speak, the other players have certain cards, and the theory tells us the best way to play the hand we've been dealt. Or more precisely, it tells us to let the free market play our hand *for us*, so market forces can drive all our factors to their best uses in our economy.

Unfortunately, this all relies upon the impossibility of these same market forces driving these factors right *out* of our economy. If that happens,

all bets are off about driving these factors to their most productive use *in* our economy. Their most productive use may well be in another country, and if they are internationally mobile, then free trade will cause them to migrate there. This will benefit the world economy as a whole, and the nation they migrate to, but it will *not* necessarily benefit us.

This problem actually applies to all factors of production. But because land and other fixed resources can't migrate, labor is legally constrained in migrating, and people usually don't try to stop technology or raw materials from migrating, the crux of the problem is capital. Capital mobility replaces comparative advantage, which applies when capital is forced to choose between alternative uses within a single national economy, with our old friend absolute advantage. And absolute advantage contains no guarantees whatsoever about the results being good for *both* trading partners. The win-win guarantee is purely an effect of the world economy being yoked to comparative advantage, and dies with it.

Absolute advantage is really the natural order of things in capitalism, and comparative advantage is a special case caused by the existence of national borders that factors of production can't cross. Indeed, that is basically what a nation *is*, from the point of view of economics: a part of the world with political barriers to the entry and exit of factors of production.³⁷⁵ This forces national economies to interact indirectly, by exchanging goods and services *made from* those factors, which places comparative advantage in control.

Without these barriers, nations would simply be *regions* of a single economy, which is why absolute advantage governs economic relations *within* nations. In 1950, Michigan had absolute advantage in automobiles and Alabama in cotton. But by 2000, automobile plants were closing in Michigan and opening in Alabama. This benefited Alabama, but it did not necessarily benefit Michigan. (It only would have if Michigan had been transitioning to a higher-value industry than automobiles. Helicopters?) The same scenario is possible for entire nations if capital is internationally mobile.

Capital immobility doesn't have to be absolute to put comparative advantage in control, but it has to be significant and as it melts away, trade shifts from a guarantee of win-win relations to a possibility of win-lose relations. David Ricardo, who was wiser than many of his own modern-day followers, actually knew this perfectly well. As he put it:

The difference in this respect, between a single country and many, is easily accounted for, by considering the difficulty with which capital moves from one country to another, to seek a more profitable employment, and the activity with which it invariably passes from one province to another of the same country.³⁷⁶

Ricardo then elaborates, using his favorite example of the trade in English cloth for Portuguese wine and cutting right to the heart of present-day concerns:

It would undoubtedly be advantageous to the capitalists of England, and to the consumers in both countries, that under such circumstances the wine and the cloth should both be made in Portugal, and therefore that the capital and labor of England employed in making cloth should be removed to Portugal for that purpose.³⁷⁷

But he does *not* say it would be advantageous to the workers of England! This is precisely the problem Americans experience today: when imports replace goods produced here, capitalists like the higher profits and consumers like the lower prices—but workers *don't* like the lost jobs. Given that consumers and workers are ultimately the same people, this means they may lose more as workers than they gain as consumers. And there is no theorem in economics which guarantees that their gains will exceed their losses.³⁷⁸ Things can go either way, which means that free trade is sometimes a losing move for them.

Having observed that capital mobility would undo his theory, Ricardo then argues why capital will not, in fact, be mobile—as he knew he had to prove for his theory to hold water:

Experience, however, shows that the fancied or real insecurity of capital, when not under the immediate control of its owner, together with the natural disinclination which every man has to quit the country of his birth and connections, and entrust himself, with all his habits fixed, to a strange government and new laws, check the emigration of capital. These feelings, which I should be sorry to see weakened, induce most men of property to be satisfied with a low rate of profits in their own country, rather than seek a more advantageous employment for their wealth in foreign nations.³⁷⁹

So in the end, the inventor of the theoretical keystone of free trade had to rely upon government and instinctive economic localism in order to make his theory hold. *Something* has to anchor capital for it all to work.

Interestingly, the above paragraph hasn't just become untrue in the modern globalized era. It was *already* untrue a few years after Ricardo wrote it, when billions of pounds began flowing out of Britain to finance railways and other investments around the world. As a result, at its peak in 1914, an astounding 35 percent of Britain's net national wealth was held abroad—a figure not even remotely approached by any major nation before or since.³⁸⁰ British investors' preference for building up other nations' industries, rather than their own, exacted a heavy toll on the once-dominant British economy, a story we will explore more in the next chapter.

Dubious Assumption #6: Short-term efficiency causes long-term growth.

The theory of comparative advantage is a case of what economists call static analysis. That is, it looks at the facts of a single instant in time and determines the best response to those facts at that instant. This is not an intrinsically invalid way of doing economics—balancing one's checkbook is an exercise in static analysis—but it is vulnerable to a key problem: *it says nothing about dynamic facts*. That is, it says nothing about how today's facts may change tomorrow. More importantly, it says nothing about how one might cause them to change in one's favor.

Imagine a photograph of a rock thrown up in the air. It is an accurate representation of the position of the rock at the instant it was taken. But one can't tell, from the photograph alone, whether the rock is rising or falling. The only way to know *that* is either to have a series of photographs, or add the information contained in the laws of physics to the information contained in the photograph.

The problem here is that even if the theory of comparative advantage tells us our best move today, given our productivities and opportunity costs in various industries, it *doesn't* tell us the best way to raise those productivities tomorrow. That, however, is the essence of economic growth, and in the long run much more important than squeezing every last drop of advantage from the productivities we have today. Economic growth, that is, is ultimately less about *using* one's factors of production than about *transforming* them—into more productive factors tomorrow.³⁸¹ The difference between poor nations and rich ones mainly consists in the problem of turn-

ing from Burkina Faso into South Korea; it does not consist in being the most efficient possible Burkina Faso forever. The theory of comparative advantage is not so much wrong about long-term growth as simply silent.

Analogously, it is a valid application of personal comparative advantage for someone with secretarial skills to work as a secretary and someone with banking skills to work as a banker. In the short run, it is efficient for them both, as it results in both being better paid than if they tried to swap roles. (They would both be fired for inability to do their jobs and earn zero.) But the path to personal success doesn't consist in being the best possible secretary forever; it consists in upgrading one's skills to better-paid occupations, like banker. And there is very little about being the best possible secretary that tells one how to do this.

Ricardo's own favorite example, the trade in English textiles for Portuguese wine, is very revealing here, though not in a way he would have liked. In Ricardo's day, textiles were produced in England with then-state-of-the-art technology like steam engines. The textile industry thus nurtured a sophisticated machine tool industry to make the parts for these engines, which drove forward the *general* technological capabilities of the British economy and helped it break into related industries like locomotives and steamships.³⁸² Wine, on the other hand, was made by methods that had not changed in centuries (and have only begun to change since about 1960, by the way). So for hundreds of years, wine production contributed no technological advances to the Portuguese economy, no drivers of growth, no opportunities to raise economy-wide productivity. And its own productivity remained static: it did the same thing over and over again, year after year, decade after decade, *century after century*, because this was where Portugal's immediate comparative advantage lay. It may have been Portugal's best move in the short run, but it was a dead end in the long run.

What happened to Portugal? It had actually been happening for over a century by the time Ricardo wrote, largely in rationalization of existing conditions. In 1703, in the Treaty of Methuen, Portugal exempted England from its prohibition on the importation of woolen cloth, while England agreed to admit Portuguese wines at a tariff one-third less than that applied to competitors. This treaty merely switched suppliers for the English, who did not produce wine, but it admitted a deluge of cheap English cloth into Portugal, which wiped out its previously promising textile industry. English capital eventually took control of Portugal's vineyards as their own-

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ers went into debt to London banks, and English influence sabotaged attempts at industrial policy that might have pushed Portugal back into textiles or other manufacturing industry. As textiles were (as they remain today) the first stepping stone to more-sophisticated industries, this all but prevented Portugal's further industrialization. Not until the 1960s, under the Salazar dictatorship, did any Portuguese government make a serious attempt to dig itself out of this trap and to this day, Portugal has not recovered its 17th-century position relative to other European economies and remains the poorest country in Western Europe.

Today, the theory of comparative advantage is similarly dangerous to poor and undeveloped nations because they tend, like Portugal, to have comparative advantage in industries that are economic dead ends. So despite being nominally free, free trade tends to lock them in place.

Dubious Assumption #7: Trade does not induce adverse productivity growth abroad.

As previously noted, our gains from free trade derive from the difference between *our* opportunity costs for producing products and the opportunity costs of our trading partners. This opens up a paradoxical but very real way for free trade to backfire.

When we trade with a foreign nation, this will generally build up that nation's industries, i.e. raise its productivity in them. Now it would be nice to assume that this productivity growth in our trading partners can only reduce their direct costs, therefore reduce their opportunity costs, and therefore increase our gains from trading with them. Our foreign suppliers will just become ever more efficient at supplying the things we want, and we will just get ever cheaper foreign goods in exchange for our own exports, right?

Wrong. As we saw in our initial discussion of absolute vs. comparative advantage, while productivity (output per unit of input) does determine direct costs, it *doesn't* determine opportunity costs. The alternative uses of factors of production do. As a result, productivity growth in some industries can actually *raise* our trading partners' opportunity costs in other industries—by increasing what they give up producing in one industry in

order to produce in another. If the number of rolls they can make from a pound of dough somehow goes up (rolls get fluffier?), this will make it more expensive for them to bake bread instead. So they may cease to supply us with such cheap bread! It sounds odd, but the logic is inescapable.

Consider our present trade with China. Despite all the problems this trade causes us, we do get compensation in the form of some very cheap goods, thanks mainly to China's very cheap labor. The same goes for other poor countries we import from. But labor is cheap in poor countries because it has poor alternative employment opportunities. What if these opportunities improve? Then this labor may cease to be so cheap, and our supply of cheap goods may dry up.

This is actually what happened in Japan from the 1960s to the 1980s, as Japan's economy transitioned from primitive to sophisticated manufacturing and the cheap merchandise readers over 40 will remember (the same things stamped "Made in China" today, only less ubiquitous) disappeared from America's stores. Did this reduce the pressure of cheap Japanese labor on American workers? It did. But it also deprived us of some very cheap goods we used to get. (And it's not like Japan stopped pressing us, either, as it moved upmarket and started competing in more sophisticated industries.)

The same thing had happened with Western Europe as its economy recovered from WWII from 1945 to about 1960 and cheap European goods disappeared from our stores. Remember when BMWs were cheap little cars and Italian shoes were affordable? It's as if our football player woke up one morning and found that his lawn man had quietly saved his pennies from mowing lawns and opened a garden shop. No more cheap lawn mowings for him! (Maybe it was a bad idea to hire him so often.)

Now this is where things get slippery and non-economists tend to get lost. Because, as we saw earlier, gains from trade don't derive from absolute but comparative advantage, these gains can be killed off *without* our trading partners getting anywhere near our own productivity levels. So the above problem doesn't merely consist in our trading partners *catching up to us* in industrial sophistication. But if their *relative* tradeoffs for producing different goods cease to differ from ours, then our gains from trading with them will vanish. If Canada's wheat vs. corn tradeoff is two units per acre vs. three and ours is four vs. six, all bets are off. Because both nations

now face the same tradeoff ratio between producing one grain and the other,³⁸³ all possible trades will cost Canada *exactly* as much they benefit the US—leaving no profit, no motivation to trade, and no gain from doing so. And if free trade helped raise Canada's productivity to this point, then free trade deprived us of benefits we used to get.

It's worth retracing the logic here until it makes sense, as this really is the way the economics works. When Paul Samuelson—Nobel Laureate, dean of the profession, inventor of the mathematical foundations of modern economics while still a graduate student, and author of the best-selling economics textbook in history—reminded economists of this problem in a (quite accessible, for those readers who are curious) 2004 article, he drew scandalized gasps from one end of the discipline to the other.³⁸⁴ How could anyone so distinguished criticize the sacred truth of free trade? Then he politely reminded his critics that he was merely restating a conclusion he had first published in his Nobel Lecture of 1972!³⁸⁵ As Samuelson noted, Ricardo himself was well aware of the problem:³⁸⁶

In Chapter 31 [of *The Principles of Political Economy and Taxation*] Ricardo discovers what he has elsewhere denied: that an improvement abroad can hurt Britain under free trade (or, as needs to be said today, that an improvement in Japan can hurt the American living standard).³⁸⁷

Most of the time, this problem has low visibility, because it consists in the unnoticed change of invisible ratios between the productivities of industries here and abroad. Few people worry about it because it has no easily understood face like cheap foreign labor. But it definitely does mean that free trade can “foul its own nest” and kill off the benefits of trade over time. Even within the most strictly orthodox Ricardian view, only the existence of benefits from free trade is guaranteed.³⁸⁸ It is not guaranteed that changes *induced* by free trade will make these benefits grow, rather than shrink. So free trade can do billions of dollars worth of damage *even if Ricardo was right* about everything else (which he wasn't).

There are two standard rejoinders to this problem. The first is that while it proves that gains from free trade can go down as well as up, it doesn't actually prove that they can ever go below zero—which is what would have to happen for free trade to be literally bad for us. This is true. But this

doesn't change the fact that if free trade *caused* our gains from trade to go down, then it reduced our economic well-being. We would have been better off under some protectionist policy that avoided stimulating so much productivity growth abroad. The second rejoinder is that productivity abroad can rise even without free trade on our part. This is also true. But if free trade sometimes causes productivity abroad to rise in a way that has the effects just described, then free trade is still sometimes bad for us.

This problem is actually even more significant than explained here because it is also the foundation of an even more radical critique of free trade we will look at later, after we have developed some needed conceptual tools. This concerns the nightmare scenario that *really* haunts Americans: the idea that free trade *can* help other nations catch up with us in industrial sophistication, driving us out of our own most valuable industries.³⁸⁹

HOW MUCH OF THE THEORY STILL STANDS?

Given that the theory of comparative advantage has all of the above-described flaws, how much validity does it retain? Some. It is a useful tool for analyzing trade in individual industries. Asking what industries a nation has comparative advantage in helps illuminate what kind of economy it has. And insofar as the theory's assumptions do hold, to some extent, some of the time, it can give us some valid policy recommendations. *Fairly open trade, most of the time, is a good thing.* But the theory was never intended to be by its own inventor, and its innate logic will not support its being, a blank check that justifies 100 percent free trade with 100 percent of the world 100 percent of the time. It only justifies free trade when its assumptions hold true,³⁹⁰ and in the contemporary world, they quite clearly often do not.

One of the biggest insights remaining from the theory is that under free trade, a nation's wages will be determined, other things being equal, by its productivity in those sectors of its economy that possess comparative advantage. That is to say, wages in America aren't high because the productivity of barbers is higher here than in Ukraine. (It isn't, anyway.) Wages are higher because the productivity of aircraft manufacturing workers is

higher. This is true because a nation's best industries tend to be those in which it has comparative advantage, and are thus the industries from which it exports. So under free trade, these industries expand and suck in labor, bidding up wages in other industries. This doesn't mean export industries will pay more. They will pay the same as other industries requiring the same skill level, as they draw labor from the same pool. But these industries, not other industries, will be pulling the labor market up.³⁹¹

The converse is that it's a bad idea for a nation to lose its leading internationally traded industries. So all Americans, not just those working in these industries, have a stake in their health. Many Americans, especially those working in the 70 percent of our GDP that is in nontraded industries,³⁹² are indifferent to the problems of our tradable sector because they think these problems will never affect them. *Directly*, as previously noted, indeed they won't. But indirectly, they eventually will, as our wages are propped up, at the end of the day, by our ability to go work elsewhere if better money is offered. And this basically requires a strong export sector if we have free trade.³⁹³

MODERN DAY ELABORATIONS OF RICARDO

Free trade, of course, is not considered justified by economists today simply on the strength of Ricardo's original 1817 theory alone. His ideas have been considerably elaborated since then, and economists generally use sophisticated "computable general equilibrium" (CGE) computer models, built upon his work as the foundation, to assign actual dollar amounts to the purported benefits of free trade. These models are called "computable" because, unlike economic models that exist purely to prove theoretical points, it is possible to feed actual numbers into them and get numbers out the other end. They are called "general equilibrium" because they are based on the fundamental idea of free market economics: that the economy consists of a huge number of separate equilibria between supply and demand and that all these markets clear, or match supply with demand, at once. So it's worth looking at problems with these models a bit.

For a start, these models tend to make some rather implausible assumptions. For example, they often assume that government budget deficits and

surpluses will not change due to the impact of trade, but will remain fixed at whatever they were in the starting year of the model. Worse, they assume that trade deficits or surpluses will be similarly stable, with exchange rates fluctuating to keep them constant. And they assume that a nation's investment rate will equal its savings rate: every dollar saved will flow neatly into some productive investment. These assumptions are understandable, as devices to simplify the models enough to make them workable. They are, however, both clearly untrue and serious objects of controversy in their own right.³⁹⁴

That investment will equal savings is basically a form of Say's Law, "supply creates its own demand," named after the French economist Jean-Baptiste Say (1767-1832).³⁹⁵ This basically makes both underinvestment and unemployment theoretically impossible. Furthermore, these models often assume that nations enjoy magical macroeconomic stability: the business cycle has been mysteriously abolished. And their financial systems enjoy unruffled tranquility, without booms, busts, or bubbles. These assumptions are pre-Keynesian,³⁹⁶ and thus at least 70 years behind mainstream domestic economics. (This is a recurring problem in free trade economics: ideas long discarded in other areas of economics recur with alarming regularity.)

These models also generally leave out transition costs. These sound temporary, but such transitions can take decades: consider the pain experienced by the Midwestern manufacturing areas of the U.S. as their industries have gradually lost comparative advantage since the mid-sixties! Given that the world economy is not static, but constantly moving into new industries, there are always new transitions being generated, which means that transition costs go on forever, as an intrinsic cost of having a global economy based on shifting patterns of comparative advantage. Somebody will always be the rustbelt. This does not of itself mean that economic change is a bad thing, but it does mean that these costs must be factored in to get an accurate accounting.

Trade in services (AKA offshoring) is another sticking point. The root problem here is that this trade usually isn't regulated the same way as trade in goods. Due to the fact that, prior to cheap long-distance telephony and the Internet, many services were rarely internationally traded, there are actually few outright tariffs or quotas on them. Instead, there is a crazy-quilt of hard-to-quantify barriers, ranging from licensing requirements to

tacit local cartels and linguistic differences. As a result, when these barriers come down, they rarely come down in a neatly quantifiable way like reducing a tariff on cloth from 28 to 22 percent. So economists must basically guess how to quantify nonquantitative changes in order to model them. (The term for this is “tariff equivalent” numbers.) As a result, the conclusions generated by many models of trade in services are so dependent upon arbitrary guesses as to border on arbitrary themselves.

Another caveat: because all these models are predictions about the future, they are of necessity somewhat speculative under the best of circumstances and notoriously susceptible to deliberate manipulation. It is easy, for example, to generate inflated predictions of gains from trade by extrapolating calculations intended to apply only within certain limits with back-of-the-envelope calculations that go far beyond these limits. (These are known in the trade as “hockey stick” projections due to their shape when graphed.) So as Frank Ackerman of the Global Development and Environment Institute at Tufts University puts it:

The larger estimates still being reported from some studies reflect speculative extensions of standard models, and/or very simple, separate estimates of additional benefit categories, not the core results of established modeling methodologies.³⁹⁷

Similarly, the standard way for free traders to play down the damage done to the victims of free trade is to count only workers *directly* displaced from jobs as its losers.³⁹⁸ Unfortunately, these workers crowd into the labor market of everyone else with similar education and skills, dragging down wages for other people, too.

Even if all statistical gamesmanship is removed and other reforms made, there is a deeper problem with CGE models: no such model can predict what *choices of trade strategy* a nation will make. For example, none of the models used in the 1950s predicted Japan’s ascent to economic superpower status. Quite probably, no model could have. Indeed, no model based upon purely free-market assumptions will ever readily predict the outcomes from such strategic choices, as free-market economics, with its insistence that it is always best to just do what the free market says, rules out a priori the possibility that most such deliberate economic strategies can even work.

IS BIG BUSINESS IN ON THE JOKE?

As we have seen, the theory of comparative advantage is considerably out of alignment with the real world. So we should, logically, expect this fact to affect the conduct of actual international businesses at some point. If the theory is wrong, that is, then surely they must deviate from it at some point simply in order to function profitably? A little investigation suffices to reveal that indeed they do: the business community is well aware of how problematic the theory is and generally avoids using it in practice. As Michael Porter, one of the stars of Harvard Business School, puts it:

Comparative advantage based on factors of production is not sufficient to explain patterns of trade. Evidence hard to reconcile with factor comparative advantage is not difficult to find...More important, however, is that there has been a growing awareness that the assumptions underlying factor comparative advantage theories of trade are unrealistic in many industries...The theory also assumes that factors, such as skilled labor and capital, do not move among nations. All these assumptions bear little relation, in most industries, to actual competition.³⁹⁹

Nevertheless, the business community and its lobbyists in Washington use comparative advantage all the time in politics to lobby for more free trade. So to a huge extent, the American business community has been using, and broadcasting to the public through the media, economic ideas in which it does not itself believe—and refuses to live by.