Everybody Wins, Except for Most of Us

What Economics Teaches About Globalization

BY JOSH BIVENS

Mainstream trade theory and inequality

Comparative advantage

To get the full flavor of what mainstream economics argues regarding trade and inequality, we start with the most basic insight—*comparative advantage,* the cornerstone of classical trade theory. Take the case of China and the United States. The logic of comparative advantage argues that reducing barriers to trade allows each country to specialize in what it does *relatively* more efficiently. "Relatively" is the crucial word here—even if production costs were lower in China for *both* clothing and aircraft (they are not—the U.S. productivity advantage in aircraft dominates the wage costs), China would still do best specializing in clothing, as its cost advantage is much larger in this more labor-intensive industry. The great contribution of comparative advantage is in proving that this division of labor is a benefit to both countries.

Borrowing a classic textbook example, imagine a lawyer who is expert in providing legal services but also types slightly faster than her secretary. Should the lawyer cut back on providing legal services to do more typing? No—doing her own typing means giving up time that could be devoted to legal work. It makes intuitive sense that giving up (presumably well-paid) legal work for typing seems like a bad idea. But suppose also that the secretary has the skills to write legal briefs, but they take him a lot more time because he doesn't have the legal training of the lawyer. Should the secretary cut back on typing and do more legal work? The answer (perhaps surprisingly this time) is again no.

To see why, start with a couple of radical-sounding assumptions: legal and typing services are the only two goods in the economy, and everybody needs some of each. Say that the secretary can either write two legal briefs in an hour or type 50 pages, and the lawyer can write three legal briefs or type 60 pages. Looking at the relevant cost of legal work as foregone typing (and this is indeed the relevant cost—remember that these are the only goods in the economy), then it makes sense for the secretary to specialize in typing. Each legal brief "costs" the secretary 25 pages of foregone typing. The lawyer, however, can provide each legal brief for only 20 pages of foregone typing.

Essentially, the secretary can "buy" a legal brief from himself at the cost of 25 pages of typing or he can buy the brief from the lawyer for only 20 pages of typing. As long as he needs both legal services and typing, he is better off specializing in relatively poorly paid typing. For the real world application if this example, replace "typing" with labor-intensive apparel production, textile production, call center operations, and furniture production, and replace "legal work" with capital-intensive software, accounting services, high-technology products, and aircraft. Next, swap China for secretary and United States for lawyer.[8]

Hecksher-Ohlin theorem

Comparative advantage explains *why* it makes sense to trade. The workhorse model examining the *patterns* of trade flows (i.e., why the United States imports some goods and exports others) between the United States and poorer nations is the Hecksher-Ohlin theorem (HOT). The HOT and its spinoffs are often referred to more generally as the *factor proportions* approach to trade.

The HOT begins by identifying each nation's endowment of *productive factors*. The original version of the HOT was framed in terms of capital and labor as the productive factors. Recent work on the trade and inequality debate, driven by the perception that inequality had widened predominantly *within* wage incomes in the United States, began framing the HOT and related theorems as being about *skilled* and *unskilled* labor.

For this book, in the name of both brevity and avoidance of the normative baggage of *skilled* and *unskilled*, we identify the factors of production as *labor* and *professionals*, with the latter group supplying credentials, skills, and management services in addition to the labor that is supplied by both groups. These labels are by no means perfect either –production workers often have specialized skills or credentials they apply to their work, and professionals "labor"—but hopefully these labels create an intuitive picture that will make reading easier, plus they avoid the pejorative implication that 70% of workers in the United States—the approximate share without a college degree—are unskilled.

Given their endowment of productive factors, nations can be identified as either professional or labor abundant. Professional-abundant nations (the United States) have, naturally enough, access to relatively cheap professional labor services. Professional abundant nations are by definition labor scarce, and vice-versa. Given a ranking of labor- or professional-abundance, the HOT predicts that exports of professional-abundant nations will be professional-intensive (since these are the goods that these nations will have the comparative advantage in producing), and imports of these nations will be labor-intensive.

These relative weights of professional- and labor-abundance don't mean that (say) laborers have to constitute the *majority* of the workforce for a country to be considered labor-abundant. If the United States has 100 million laborers and 30 million professionals, while Mexico has 50 million laborers and 5 million professionals, between the two the United States is the professional-abundant country, even though laborers constitute the majority of its workforce.

The HOT bottom line is that professional-abundant nations (like the United States) will export professional-intensive goods and import labor-intensive goods.

Heckscher-Ohlin spinoffs

Three theories spun off by the HOT relate directly to questions of inequality; they are the Stolper-Samuelson theorem (SST), the Rybczynski theorem (RT), and the factor price equalization theorem (FPET). All three link *factor* prices

(wages for workers and professionals) and *commodity* prices (the prices of, say, apparel and aircraft).

The Stolper-Samuelson theorem (SST)

The spinoff with the most direct and general relevance to the issue of trade and inequality is the SST, which focuses on the consequences of falling trade costs for a nation's scarce factor of production. The general assumption, again, is that the scarce factor in the United States is labor. The global South is assumed to be abundant in labor and scarce in professionals. The SST demonstrates that reductions in trade costs cause an unambiguous reduction in the real return to a nation's *scarce* factor of production; in the case of the United States this means a decline in labor's wages.

Commentators and some economists often express confusion over this point. Even when they grant that a reduction in costs of trade with a labor-abundant country (say China) will depress the demand for American workers, the lower price of imports is often characterized as potentially fighting the reduced labor demand to a draw in terms of labor's real (inflation-adjusted) purchasing power or at least making the precise outcome indeterminate. This is not the case—the SST demonstrates unambiguously that the scarce factor in the United States, labor, will be damaged in absolute, not just relative, terms.[9]

Rogoff (2005) and Krugman and Obstfeld (1994) sum up the implications of the SST model:

> From a policy perspective, the major result of [the SST] was to confirm the intuitive analysis of Ohlin about who wins and who loses when a country opens up to trade. The answer, as we now well understand, is that the relatively abundant factor gains, and the relatively scarce factor loses, not only in absolute terms but in real terms. Thus if capital is the relatively abundant factor (compared to the trading partner), then an opening of trade will lead the return on capital to rise more than proportionately compared to the price of either good, whereas the wage rate will fall relative to the price of either good. (Rogoff 2005)

> Thus international trade has a powerful effect on income distribution... This means that international trade tends to make low-skilled workers in the United States worse off—not just temporarily but on a sustained basis. (Krugman and Obstfeld 1994, 78, 79)

For a more thorough explication of how the SST works, Appendix 1A walks through some of the math.[10] As an example of the application of this theory, start by dividing workers in the United States into labor and professionals. Assume further that there are two sectors in the U.S. economy, apparel and aircraft. Labor and professionals can work in either sector.[11] Lastly, assume that producing each $1 of

apparel takes a ratio of labor to professionals twice as high as producing each $1 of aircraft—that is, apparel is the more *labor-intensive* business.

Now, say that falling trade costs (a tariff cut, for example) reduces the price of imported apparel by 10%. In a competitive economy, this means that the price of domestically produced apparel must fall by 10% as well. The upshot of this is that fewer domestic producers are willing to make apparel, as falling prices make it a less attractive business. Imports rise to replace this lost domestic production. Lastly, and importantly, aircraft exports rise as domestic investment once ploughed into apparel looks for new opportunities.

Every $100 of domestic apparel production that is abandoned means that the ratio of labor to professionals laid off by apparel makers is too high to be absorbed in the aircraft sector at labor's going wage. After absorbing all of the professionals released from apparel, there will still be many laborers who cannot find employment in the aircraft sector. If these laborers want a job, they must agree to a wage cut. Further, it's not just the *unemployed* laborers that take wage cuts—*it's all laborers economy-wide*. Incumbent laborers in either industry not agreeing to this wage cut will be replaced by unemployed laborers. These economy-wide wage cuts for laborers are the *gross losses* from trade.

The process works in reverse for professionals. The apparel sector doesn't shed enough of them at the going professional wage in order to meet the extra demands of aircraft production. This imbalance bids up their wages, and these higher wages for professionals constitute the *gross gains* from trade.

As labor has become cheaper relative to professionals, both aircraft and apparel producers will have incentives to adopt new production techniques that economize on professionals and more intensively use labor until the last unemployed worker is absorbed. So, at the end of the adjustment to the tariff cut, the apparel industry has contracted, the aircraft industry has expanded, labor's wages have fallen, professionals' wages have increased, and both industries have a higher labor share than they did before. From the HOT, we also know that gross gains are greater than gross losses, leading to net gains from trade.

These are the standard predictions of mainstream trade theory. Note what this theory does not say: that a damage stemming from globalization is the *adjustment* cost of laborer's unemployment spells between jobs. This temporary adjustment cost is not factored into the SST; rather, the damage specified is the permanent wage loss suffered by *all* labor in this economy.

Something else the theory does not say is that lower prices for apparel provide partial compensation for the damage done labor. In fact, the lower price of apparel *is the problem* for labor, not a countervailing benefit. Further, these lower apparel costs are also the source of the gains from global integration: the greater the *national* gains from globalization, the more labor's wages suffer.

Lastly, a variation of the following argument has become ubiquitous: *trade lets us keep the good jobs in the United States and sends the bad jobs overseas*. It is easy to see where this impression comes from; in the example above, the United States

is left with more aircraft jobs and fewer apparel jobs, and, on average, aircraft pays better than apparel. So it seems like the United States has kept the good jobs. However, this observation reflects confusion between what happens to *jobs* versus what happens to *workers*. More *jobs* are indeed located in the higher-wage sector (aircraft) post-trade, but labor receives lower wages *in both sectors*. The higher pay in the aircraft sector is wholly a function of the higher ratio of (high-paid) professionals relative to the labor employed there.

We know from above that it is the wages of labor, not the wages of professionals, that are forced down. Calculating the precise change in wages induced by falling trade costs is a job for the technical appendix (as it is far from straightforward), but an important punch line of the SST is that the fall in workers' wages is larger than the fall in trade costs. This is known as the "magnification effect," and the intuition runs as follows.[12]

We know that overall prices in the import-competing must fall by 10%, which means that the *average* factor price in this sector must fall by 10%, since competition insures that the price of something is exactly equal to the cost of the factors used in producing it. But, we also know that only labor's wage falls, and, labor accounts for less than 100% of the cost of a good. Given this, if average factor prices fall by 10%, and, professional wages rise, then labor's wages must fall by more than 10%.

If, say, labor accounts for 70% of the final price of a good, and we know the price of this good has fallen by 10%, and we know that the entirety of this 10% fall must come out of the return to labor, then labor costs must fall by at least 10% divided by 70%, or 14%.

The SST, in short, demonstrates that falling trade costs reduce the price of a nation's scarce factor. It further shows, as demonstrated above, that the wage cuts induced in the United States by falling tariffs are greater than the magnitude of the tariff.[13] Finally, the SST combined with the HOT show that the difference between the gross gains to professionals and gross losses of workers is positive, implying *net* gains to national income that are (necessarily) just a fraction of both the gross gains to professionals and gross losses to workers.