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DOES OUTSOURCING CHANGE EVERYTHING?

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<u>What should we think about offshore outsourcing?</u>

Paul Krugman, 4/6/07

The phenomenon of "offshore outsourcing" – in particular, the way the Internet and other technologies make it possible to deliver at a distance services that once required physical proximity – has caught the imagination of the public. It has also caught the attention of economists. My Princeton colleague Alan Blinder, in a much-cited popular article in *Foreign Affairs*, warned that "economists who interpret offshoring as nothing more than international business as usual are greatly underestimating both its importance and its disruptive impact on Western societies." Two of my other colleagues, Gene Grossman and Esteban Rossi-Hansberg, in an analysis prepared for the Federal Reserve, have gone so far as to argue that offshore outsourcing requires a "new paradigm" for thinking about international trade.

What I'd like to do in this talk is suggest a more prosaic approach to the subject. I don't mean to minimize the possible importance of outsourcing: that's an empirical question, and there's reason to suspect that the range of tradable services may, indeed, become very large. Nor do I mean to offer a Panglossian view: as we'll see, there is a presumption that offshoring will worsen the distribution of income in advanced countries. But I'll argue that the consequences of offshoring both for wages and for how we think about trade are less severe than some have suggested.

So let me describe three simple stories about outsourcing. Why three? Because there's considerable diversity in the discussion about what outsourcing means: Alan Blinder takes it to mean the ability to trade previously nontradable goods and services, while others take it to mean the ability to "fragment" production, trading intermediate goods as well as final goods and services. One of the main conclusions I plan to offer is that these two interpretations of outsourcing have essentially identical economic implications. But we need to do a bit of hard thinking to see this.

At the same time, there's the question of how we want to think about international trade. Economists tend to move back and forth between a "Ricardian" framework, in which international trade is mainly driven by differences in productivity, and a "Heckscher-Ohlin" framework, in which trade is mainly driven by differences in resources such as skilled labor. Both are useful in discussing outsourcing: the Ricardian framework helps make the point that there is a presumption of overall gains from outsourcing; the Heckscher-Ohlin framework helps highlight a less comfortable presumption, that outsourcing will worsen income inequality in advanced countries. So I'll need to take a third look at the question of outsourcing, focusing on income distribution.

What I hope I can convince you of is that outsourcing doesn't change the rules of the game on international trade. What it does do is magnify effects we already knew about, making both the good and the bad of trade more intense.

Model I

OK, let's start with "Model I", in which I ask what happens if technology makes some previously nontraded goods tradable, in a framework in which it's all about productivity. And this has to begin with a discussion of the nexus of trade, productivity, and wages.

So let's abstract from the complexity of reality, and imagine a world consisting of only two economies – call them Europe and Asia – in which the only thing determining who has the advantage in a given industry is unit labor costs – wages divided by productivity. In this simplified world, we can assume that European labor is more productive than Asian labor at just about everything. In the real world, by the way, for all the sense we seem to have that the Chinese can do anything, Chinese labor productivity in manufacturing seems to be, on average, less than 10 percent of European levels. But we'll also imagine, realistically, that the size of the European margin differs across industries: Asia is almost as productive as Europe in clothing, much less so in production of sophisticated capital goods.

Clearly, in this situation, Asia will have lower wages than Europe, more or less reflecting the difference between the average productivity of labor in the two economies. Because the wage difference reflects average productivity, Europe will have a cost advantage in industries where it has a really big productivity advantage, above its average level, and export the products of those industries. But Asia will have a cost advantage in industries where its productivity disadvantage isn't too pronounced, that is, is below average, and will export the products of *those* industries.

Meanwhile, there will also be many goods – and, especially, services - that aren't traded at all, because they're impossible to ship or at least prohibitively expensive to ship.

Now, I just said vaguely that the relative level of wages in the two economies will reflect the difference in average productivity. But in reality wages will be determined by supply and demand. If the Asian wage is so low compared with the European wage that Asia has an advantage in almost everything, the result will be an Asian trade surplus that either pushes Asian currencies up or leads to inflation that raises wages. If the relative Asian wage is so high that Asia has an advantage in almost nothing, there will be a trade deficit forcing either devaluation or deflation. So the relative wage will settle somewhere in the middle – as I said, more or less reflecting the average difference in productivity between the two economies.

With this framework in hand, we can now consider one version of the outsourcing story: it's what happens when technology makes it possible to deliver at long range some services that previously had to be provided in person. The example everyone is familiar with is call centers, where the person answering your help request on a U.S. phone line is increasingly likely to be somewhere in South Asia. In general, what's happening here is that some previously nontraded goods have become tradable.

What effect does this have? Start by looking for a moment at what would happen if relative wages didn't change. If the newly tradable good or service is one in which in which Europe's productivity advantage is small or nonexistent, the result will obviously be that world production of that good or service will move to Asia. Since Lakshmi in Bangalore is just about as productive answering phone calls as Jennifer in Omaha, call centers move to the Third World when possible.

But it's also possible that things may move the other way. A corporation originally based in Asia might well decide, in an age of easy telecommunications, that its interests are best served by moving the head office to London or New York, where top executives can schmooze face to face with investment bankers and top clients. In fact, as I'll explain later, there's evidence of just that sort of thing happening extensively at a domestic level.

The point is that overall, the effect of outsourcing on where things are produced can go in either direction – which means that the effect of outsourcing on the Asian trade balance can be either positive or negative, depending on which goods become tradable.

Much writing on outsourcing seems to assume that it's all call centers – that in the vast preponderance of cases outsourcing will cause production to move to the low-wage country. For example, Alan Blinder writes that "the critical labor market division in the future" will be between types of work that "are easily deliverable down an electronic wire (or via wireless connections) with little or no diminution in quality," and those that aren't. This seems to presume that work which can be so delivered will either move to low-wage countries, or require wage reductions in high-wage economies. Basically, the only good jobs will be in things that have to be done on site, like plastic surgery.

But there are two big things wrong with this. First of all, it's by no means obvious that the kinds of things that will be outsourced are things in which low-wage, Third World countries have the advantage. One interesting recent study at the Institute for International Economics looks at measures of geographical concentration to ask which service sectors – things that have historically not been traded internationally - are tradable within the United States. This offers a possible clue to what may become internationally tradable in the near future. They conclude that the evidence "suggests that tradable services are consistent with US comparative advantage—they are high-skill and high-wage activities (relative to both manufacturing and nontradable service activities)."

Second, even if outsourcing generally moves jobs to the lower wage country, this will produce a more or less automatic counterreaction. Suppose that relative European productivity in the newly tradable services is generally less than the current European wage premium, so that outsourcing leads to loss of those services. Even so, this will not lead to a net loss of European jobs. Instead, the European relative wage will fall (and the relative Asian wage rise), so that the jobs lost in newly tradable sectors will be offset by job gains in previously tradable sectors. Call centers will move away from Europe – but manufacturing in medium-technology industries, where the cost advantage of Asia is currently modest (an example might be textiles – but not clothing – or auto parts) will indirectly be induced to move from Asia to Europe.

Does the fact that outsourcing does not, in the end, lead to either a gain or loss of jobs mean that it's all of no importance? No. For one thing, there will of course be disruption for workers whose industries change continents, and gains for first-movers in the new industries. And even in the longer run, outsourcing will have some effects on the purchasing power of wages.

One effect is clearly positive: the initial effect of outsourcing will be to lower the cost of living in both countries. That's because production of newly tradable goods always moves to the cheaper location: more or less by definition, the effect of outsourcing is always to lower the price of the outsourced good or service in the importing country. If that was the end of the story, real wages in both countries would rise.

Overlaid on this "specialization" effect, however, will be a "terms of trade" effect, which can run in either direction. If Europe's relative wage falls, European real wages will fall in terms of the things Europe was already buying from Asia – because Asian labor costs will have risen in terms of what Europeans earn. One way to describe this is to say that what Europe has to fear from outsourcing of, say, software programming to India isn't so much the effect on the programming industry as the fact that it will, indirectly, make imported shirts and pajamas more expensive when the rupee rises. (But what about the wages of programmers, you ask? That's an income distribution question, which I'll get to later.)

In short, the outsourcing picture, at least as I've described it so far, is less apocalyptic and more benign than often portrayed. It's not definitely a good thing for workers in advanced countries, but there's a pretty good chance that it's for the best, and little chance that it will lead to mass unemployment or plunging wages.

But is this the right picture of outsourcing? Let me offer an alternative.

Model II

An alternative vision of outsourcing depicts it as involving the use of information technology, not to move production of consumer goods overseas, but to slice off pieces of the production process and move them abroad, physically separating tasks that previously had to be conducted in physical proximity. This doesn't sound very different, in economic terms, from being able to deliver at a distance services that previously had to be delivered face to face, and it isn't. And it isn't.

Actually, this sort of outsourcing is already familiar in manufacturing, in a prosaic, old-fashioned way. Once upon a time, manufactured goods used to be produced pretty much all the way from the raw materials in just one place. There's a famous set of Diego Rivera murals in Detroit, showing the River Rouge Ford plant in the 1920s: it started with iron ore and coke to make steel, and at the other end of the plant complete automobiles emerged. But as transportation costs have fallen, manufacturing has become "fragmented": a typical laptop computer will now be assembled in China using a microprocessor made in the United States, memory chips made in Korea, a disk drive from Singapore, and a screen made in Japan. The simplest parts of the production process – assembly – get done in a low-wage, Third World country; the medium-tech things, like production of commodity memory chips, get done in medium-income countries; the high-end stuff still gets done in advanced countries.

This kind of fragmentation had the effect, at least as far as high-wage countries are concerned, of exporting low-tech work to the Third World. Now the same thing is starting to happen with some non-physical parts of production: a company's filing operations might be carried out electronically in a developing country. Even some health care services can be broken up: your doctor has to be physically in your city, but the radiologist who reads your X-ray might be ten thousand kilometers away.

So how does all this affect economies? Think of a world just like the one described earlier, but in which each good is produced in two stages – an "upstream" stage and a "downstream" stage. And let's suppose that in the absence of outsourcing, upstream and downstream production for each final good must be carried out in the same country. In that case, it's just like Model I.

Now suppose that it becomes possible to separate the upstream and downstream production for some goods. As before, think about what would happen if the ratio of European to Asian wages didn't change. There are two possibilities:

1. There may be goods that were being produced in Europe, but for which relative European productivity in either the upstream or the downstream good is less than the wage difference. In that case, part of production will move from Europe to Asia.
2. There may be goods that were being produced in Asia, but for which relative European productivity in either the upstream or the downstream good is greater than the wage difference. In that case, part of production will move from Asia to Europe

As in the case of making nontraded final goods tradable, popular discussion seems to presume that the first type of shifts of will predominate, that it will be mainly a case of pieces of the production process moving to low-wage countries. But it's not clear why.

An example that illustrates how outsourcing that lets different stages of production be physically separated could actually raise the relative demand for labor in high-wage countries is the way improved communications within the United States have, in recent years, actually strengthened the role of New York as a center of corporate management, despite Manhattan's high costs. According to a 2006 report in the New York Times, the number of corporate headquarters and subsidiaries in Manhattan has more than doubled since 1990, reversing an earlier exodus. Why?

"[The] new arrivals are not the monolithic corporate headquarters of the past, packed with thousands of middle managers and supporting personnel. They have been pared to hold only those people whose presence in the high-priced corridors of New York is considered essential.

"That evolution has been made possible by technological advances that allow corporate generals to stay in touch with their troops from afar. The bosses can network face to face with their peers in the hub of the financial, legal and communications industries, while keeping the rank and file in less expensive quarters in suburbs or other cities." (New York Times, 2006.)

Similar effects may underlie the growing U.S. trade surplus in professional, business, and technical services over the past decade: "insourcing" of high-end activities seems to have outpaced "outsourcing" of low-end activities, at least so far. This may, of course, change as the technology of offshoring continues to improve.

The welfare effects of slicing up the value chain in this way are essentially the same as those of making nontradable goods tradable. If there were no change in wages, each country would gain from offshoring of activities to the other country, which would reduce the costs. Overlaid on these gains from specialization will be the effect of any changes in relative wages, which can go either way.

Model III:

But what about income distribution? The big problem with using productivity-difference stories to think about international trade is that they don't shed any light on how trade affects the distribution of income within countries. In this case of outsourcing, income distribution appears to be key to the issue: most economists presume that offshore outsourcing makes Europe and the United States richer (although this isn't necessarily true, given the possible effects on the terms of trade), but worry about the losers. So let me now turn to stories that that allow for changes in income distribution, starting with a story about what happens if some previously nontraded goods become tradable.

And in this case we can immediately make use of an insight familiar to people who work in international trade: the existence of nontradable goods makes "factor price equalization" less likely. Conversely, making some previously nontradable goods tradable makes factor price equalization more likely.

Factor price equalization is what happens when wage rates in two countries are more or less equalized through trade. Imagine a country with a high fraction of college-educated workers, and another country with a low fraction of college-educated workers. In the absence of trade, we'd expect college graduates to earn less, and blue-collar workers to earn more, in the first country. But if the high-skill country can export skill-intensive products and import labor-intensive products, the difference narrows and may disappear.

But to make that happen, there has to be enough trade. And if many goods can't be traded, there can't be enough trade. So the fact that many goods are nontraded acts like a natural tariff: it tends to keep the wages of unskilled workers high in Europe and the United States

But now imagine making some of those goods tradable. The effect is as if tariffs were reduced – even if you already had free trade. And that means a move toward factor price equalization.

Put it this way: there was a time, not too long ago, when overseas shifts of labor-intensive production were mainly about just one industry: clothing. And there were only so many jobs in the apparel industry that could be lost. So there seemed to be limits on just how much downward pressure trade could put on low-skilled workers.

But now it's possible to outsource pieces of many industries. Computers are a high-tech, skill-intensive good – but their production includes a bunch of low-skill, low-tech activities, and these activities can now be outsourced. On the other side, clothing manufacture is a low-skill, low-tech industry – but pieces of the world clothing industry can now be outsourced from low-wage countries to high-wage centers of fashion and commerce. Although one kind of outsourcing sounds like it adds jobs in advanced countries, while the other sounds like it costs jobs, both have the effect of shifting advanced countries toward high-skill activities – and therefore of increasing income inequality.

Incidentally, this is a point I think much of the recent discussion of outsourcing gets all wrong. Many people seem to think that because we're now seeing service activities in high-tech areas outsourced, we're about to see the unpleasant income distribution effects of previous globalization hit a new set of targets – that now it will be highly educated workers losing their jobs, and that the new possibilities of outsourcing suddenly expose high-skilled workers to the kind of losses previously suffered by low-skilled workers. While that may be true in a local sense – some workers have been earning high wages doing things that can also be done, much more cheaply, in Bangalore - the strong presumption has to be that outsourcing is more of the same. That is, outsourcing, like the growth in trade we've already seen, will on average benefit highly educated workers, while hurting those with fewer years of schooling.

This also means, by the way, that economists who take a benign view of outsourcing, arguing that it's as likely to improve as to worsen the distribution of income, are, I think, too cheerful. The odds are that it will reinforce the trend toward growing inequality, even if some high-wage workers as well as low-wage workers are losers from particular shifts of production.

The bottom line

So what difference does outsourcing make? I'd suggest that it's not qualitative, but quantitative: both the benefits of international trade and its troubling aspects have gotten bigger. In fact, outsourcing is similar in its effects to the other great change that is reshaping the political economy of international trade: the rise of China.

Here's how I see it. For the past 60 years, trade liberalization – a gradual reduction in tariffs and other barriers to international trade, achieved through grand rounds of international negotiation – has been at the core of international cooperation. The process of trade negotiation has been so successful that it is often held up as a model of how countries can cooperate. Those rounds of trade talks in Geneva are international diplomacy at its best.

What has made the whole thing work is the proposition not just that trade makes economies richer – which is still true – but the proposition that the gains from trade liberalization are widely diffused, while the losses affect only narrow groups. This is how economists argue, and it's also how the whole method of trade negotiation works: by getting lots of industries involved, and tying import liberalization to increased exports, you get the special interest groups to cancel out.

But now we're in a situation where the best guess is that growing trade between advanced countries and low-wage industrializing economies hurts many workers, maybe even a majority of workers. This wasn't a big issue when trade between advanced countries and newly industrializing economies was less than 2 percent of GDP, as was the case circa 1990. But now it's around 5 percent of GDP – and instead of trade with countries like South Korea, with wages around 25 percent of advanced country levels, we're talking about trade with China, where wages are only around 3 percent of advanced-country levels.

Even so, I'd argue that the effects of this trade are limited – in the US, out of a 25-percentage-point widening in the premium associated with a college education, maybe 8-10 percent can be attributed to trade. But that's enough to give some real substance to objections raised by labor unions and other groups. And here’s where outsourcing comes in: there’s no obvious limit to how far the process can go. Back in the mid-90s I estimated that the maximum possible effect of trade on wages was around 15 percent, because you’d run out of labor-intensive goods to import. But now so many more things are becoming tradable that I have no idea where the limit lies.

Does that mean I favor protectionism? No – but the reason I want to keep trade free doesn’t help much with the politics. I can’t make a credible case that protectionism would hurt most American or European workers. What I can say is that it would be devastating to workers in poor countries: cut off exports of apparel, and countries like Bangladesh will be in crisis. Unfortunately, Bangladeshi workers don’t get a vote in the U.S. Congress or European parliaments.

I don’t really have the answer. But to craft some response to the new challenges posed by outsourcing, we need, first of all, to be clear about the problem.