

# General Discussion: The Rise of Offshoring: It's Not Wine for Cloth Anymore

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*Chair: R. Glenn Hubbard*

**Mr. Cotis:** I found the paper excellent, and I was interested in the notion that offshoring generates stronger productivity in the industry where it takes place. An interesting feature of this productivity channel is that it can be captured from the wage or the employment side. Trying to infer the magnitude of this productivity effect from the wage side is obviously very difficult—at least that is what I'm gathering from this morning's discussion.

Looking at the productivity effect from the employment side also may be useful. This is what we have done at the Organisation for Economic Co-operation and Development (OECD) in the context of an ongoing project on globalization. We have estimated demand for labor functions at the industry level, using outward investment in non-OECD countries as a proxy for offshoring. Cross-country panel data analyses suggest that, for a given level of output and real wages, the offshoring variable has a negative impact on labor demand, which means that labor productivity rises. So, this fits rather well with the existence of a productivity channel. It seems that offshoring may be acting like a labor-augmenting technological progress. In a general equilibrium context, these productivity gains should increase the output of the industry, with ulterior positive feedback on employment.

**Mr. Lazear:** One thought I had when I was listening to your presentation was that if I am thinking about the ways by which offshoring might affect the wages of unskilled workers, I would think about not taking the skilled distribution as given, but asking how changes in relative wages will affect the skilled distribution. It seems that might be one of the more important mechanisms through which this would work. So, even in the context of your model, you do get different effects on substitutes and complements within the firms that are affected most by offshoring. One might expect then that would affect the investment in skills in human capital. That might be, in fact, an even larger effect, maybe not in the immediate run, but over a relatively moderate run in terms of raising the wages of the unskilled.

**Mr. Leamer:** It seems to me that we can think of two broad categories of economic theories and we have heard both of them this morning. One is a Heckscher-Ohlin theory in which comparative advantage is *natural*. It comes from the unequal distribution of productive resources—capital, labor, and land—around the globe.

The other one might be called comparative advantage that is *created*, as a consequence of economies of scale and externalities and agglomeration forces, etc., which is what the new economic geography is really all about. The old economic geography is embodied in the Heckscher-Ohlin natural kinds of geographic inequality of resources.

When applied economists have to study real problems in a real dataset, they have to make a choice as to which from this vast set of theories is it most sensible to use to study a specific problem. If you ask me to study Mexican and U.S. trade, my instincts are clear that it's the Heckscher-Ohlin type of model, having to do with integrating a large labor force in Mexico with a relatively skilled labor force in the United States. But if you study Canadian and U.S. trade, then it is the other type of model, which involves similar countries in terms of resources. Then you have to understand economies of scale and agglomeration.

I want to emphasize that this task model you have provided us is a Heckscher-Ohlin-based task model, which is very different from Venables' economies of scale. Then you apply it to a north-south trade between what I think basically is the United States versus Mexico and China. They are the main exporters to the United States from the nonindustrialized world. But maybe there are some others as well. So, you are using a Heckscher-Ohlin model, which I think is appropriate to study trade between the United States and the nonindustrialized world.

But task trade is such a small part of that whole enterprise. When you think about the United States and China, there is not much task trade. Even in the case of India, there are a lot of antidotes about reading radiology slides, but the reality is that is such a tiny issue. The real issue is the mobility of footloose manufacturing seeking out low-wage workers. I wonder whether this task trade might more appropriately be applied to the emerging, post-industrial intellectual service sectors, which are not a north/south phenomenon, but more trade among equals, intra-industry trade between the United States, Japan, and Western Europe.

In addition, I want to point out that your empirical exercise raises an unhappy choice that doesn't have to be. This terms-of-trade improvement you point out generates what you and I would call Stolper-Samuelson effects. Namely, an improvement in our terms-of-trade means our exports are more valuable relative to imports, so resources that are intensively used in the export sector, namely skilled workers, win. But the unskilled workers lose. That is the story of Stolper-Samuelson. But Marty Feldstein correctly pointed out this morning that there are a lot of products coming out of China and Mexico, which are not made in the United States. Then an improvement in the terms-of-trade wouldn't let loose the kinds of Stolper-Samuelson effects that you are talking about. This improvement in the terms of trade is a total win-win situation for everybody

in the United States. Nobody loses, as long as we don't have products that are directly competing with products that are emanating from China and Mexico.

**Mr. Trichet:** First, I would say that I very much agree with John Taylor when he says that it is an extraordinarily stimulating paper. I am not entirely convinced myself with the reasoning on the residual and the conclusion you are drawing from the residual, but again it is very stimulating.

Let me concentrate on one point. When I see concretely, in Europe in particular, the best success in terms of adaptation to globalization and offshoring, as you say, I have the example of a country which is *de facto* in the euro area, where the unions are frequently supporting offshoring and are even calling business leaders to offshore. Of course, the reasoning is the following: They say if you don't offshore, you will be bankrupt and all the jobs will be lost. The rationale of the trade unions is that, in so doing, they are protecting the jobs of the reasonably skilled worker. I understand also, when discussing with them and with the executive branch, that there is a consensus on the crucial assumption, which is exactly what Marty Feldstein said earlier this morning—namely a lot of the unskilled workers will be able to go in a growing, nontradeable service sector, which is the key.

What strikes me is that one of the explanations for your residual might be that the prices of the services that are rendered in the nontradeable service sector—the kind of labor that you are supplying physically to households in particular—should not be necessarily touched by globalization. Perhaps there is a link between the wages and salaries of this kind of unskilled work, which—while being unskilled—substitutes nevertheless to the average skilled laborers of households in general when they are dealing with their own child care, housekeeping, etc. There is a paradox in some economies in Europe (I don't know whether it is the case in the United States): You have unskilled workers in manufacturing who are in a very difficult

situation, obviously, as long as they don't move, and simultaneously you have also unskilled labor that is strongly demanded, where the wages and salaries are way up in all these nontradeable services that are rendered to households for child care, senior care, housekeeping, small household chores of all kinds, and so forth. There again, perhaps we have one of the possible explanations for the successes observed in some economies in Europe, which are engineering a large shift of unskilled workers from one sector to the other.

**Ms. Scobie:** My comment concerns not just the last paper but also all the papers of this session. It seems that the focus and the emphasis of the papers so far have been on the supply side. The missing variable from the arguments is, however, the role and the reaction of the consumer to a) the changing economic geography of the world and b) to offshoring, in particular within the service sector, that is, within industries such as banking, insurance, airlines, etc. Somehow, the consumer is left out of the arguments in a significant way, and the dynamics of the consumers' satisfaction has to be considered. The offshoring that has occurred globally, especially in the service sector, has led to the consumer quietly suffering. In short, there has been a global impotency on the part of the consumer. If the recipient of an offshored service is unhappy with that service, firms pay no attention as to how unsatisfied the consumers may be. For, today, all large firms engage in offshoring.

Maybe an example in the United Kingdom can demonstrate the point. Most service sectors in the United Kingdom are offshoring to India at present. Whenever one wants to make any phone calls to these institutions, one has to undergo a huge number of security questions, at the end of which the caller's question still remains unanswered. A customer of a major bank in the United Kingdom called his bank which had offshored to India, trying to make an inquiry. After a dozen security questions, the bank staff said, "What is your question?" The customer answered, "I've left my spectacles at the bank and was wondering if you have found them?"

Perhaps the authors of these papers also could reflect upon and address the issue of the dynamics of consumer dissatisfaction and of how the consumer's ultimate response might impact the future of offshoring.

**Mr. Grossman:** Thank you all for your comments. Let me start by saying that John mentioned that his examples were couched in terms of occupations rather than tasks, which gives me a nice lead-in to mention some research we discussed in the paper that I didn't have time to cover in my remarks, namely the work of Autor, Levy, and Murnane. These authors have taken the occupations performed in the United States and have tried to identify the types of tasks performed in each.

Workers in some 10,000 or 15,000 occupations have been surveyed and asked a number of questions about what is involved in doing their jobs. Autor, Levy, and Murnane converted the distribution of occupations of American workers into a distribution of the types of tasks that are being performed in the United States. They grouped tasks into five categories, depending upon whether the work was manual or cognitive and whether it was "routine" or "nonroutine."

We have taken their numbers and have aggregated them further. It seemed to us that what is most important for offshoring is the distinction between routine and nonroutine tasks. This is not an original idea to us, but it is common in recent writings about offshoring. It is interesting to note that, in fact, in the data, you find a large and ongoing increase in the performance of nonroutine tasks in the U.S. economy and a steady decline in the performance of routine tasks, which is consistent with the kind of story in our paper.

John emphasized that it is important in our framework there be inframarginal tasks, and I agree. Indeed, it is critical to our argument. We think that this is a strength of our modeling because, contrary to the example he gave of the scanner, the IT revolution has essentially been a broad-based change in technology. Digitization is a "general-purpose technology" that is changing our ability to perform entire ranges of tasks. The events of the IT revolution are captured well, I think, as a downward movement in the schedule of offshoring costs.

An interesting implication of there having to be inframarginal tasks to get the benefits we talk about is that when the process of offshoring just gets going, there is little offshoring taking place, so there is going to be only a small productivity effect. Initially, when we are very high on John's list of tasks, there is going to be very little productivity gain as the technology for offshoring improves. But this is a process, according to our model, that could pick up steam, where the productivity gains grow larger as the amount of offshoring does so, at least so long as there continues to be tasks that must be performed at home.

Finally, on John's point, and those made by some others, concerning our interpretation of the residual and the boldness of drawing conclusions from residuals, we are well-aware of this issue. I would say, as a side comment, that Robert Solow got pretty far by following that route, but we are no Robert Solow. The problem we face is the lack of any direct measures of offshoring. We would need such measures in order to perform a more direct analysis that relates offshoring to variables of interest.

As Jean-Philippe Cotis mentioned, one could possibly use proxies, as I understand what the OECD has done. Perhaps that is what future work should do. But at this point, without good measures of offshoring, the best we can do is to look for smoking guns. That is all we really mean the residual to be. It is a hint that there has been some labor-biased technological progress in the United States in the last few years. We really don't have any way, at this point, to disentangle what has given rise to the biased technological progress.

Eddie Lazear pointed out that a longer-run effect of changes in relative wages will be changes in the skill distribution. I completely agree with his point. I thought I was also going to agree with Ed Leamer, until he veered off at the very end. I certainly agree that our paper is about north/south issues. Our paper does not help us think about why some tasks are performed in Canada and others in the United States, in the process of integration between these two countries. The factor-price differences between Canada and the United States just aren't large enough, and the whole motivation for the offshoring that we are

talking about here is to take advantage of lower foreign factor prices. We are indeed thinking about north/south relations in our analysis.

Where I disagree with Ed is when he says, “Well, in U.S.-China relations, there isn’t much task trade.” We think to the contrary that we see enormous amount of task trade between the United States and China. We see China manufacturing T-shirts that are being designed and marketed in the United States. We see employment growth at Wal-Mart to sell the T-shirts that are sewn in China. If one takes a broader view of the goods that are being delivered to consumers and all the tasks that go into making and selling them, they embody many tasks requiring both skilled and unskilled labor that are not easily tradable. For the process of manufacturing the good, yes, the cloth is shipped over to China with explicit instructions of how it is to be sewn together and redelivered back to the U.S. market. But when the entire design, production, and marketing process is taken as a whole, we actually see the China example as one that fits well within our framework.

This observation also bears on the point that Ed Leamer made with reference to Marty Feldstein. We prefer not to think about specialization in “goods,” but rather the tasks that go into making them. It is misleading to think about a good as no longer being produced in the United States because even those goods that are not manufactured here may embody significant amounts of U.S. value added. We think that much of the value in T-shirts does still emanate from the United States. The manufacturing of the T-shirt, of course, is not taking place in the United States, but a substantial part of the cost of the T-shirt cost is still being paid to U.S. factors of production, for the use of U.S. technology, designs, marketing, and the like. So, considering the entire integrated process of producing a T-shirt and delivering it to the consumer and convincing him of its beauty, a large part of that industry still resides in the United States. This, to our mind, is task trade between the United States and China.