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## Measuring Offshore Outsourcing and Offshoring: Problems for Economic Statistics

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## Measuring Offshore Outsourcing and Offshoring Problems for Economic Statistics

**T**he U.S. trade deficit in goods and services widened substantially during the last decade, both in nominal terms and relative to GDP. Although developed countries still account for most of the current dollar value of U.S. imports, imports from developing countries have accounted for most—and an increasing share—of the growth in imports in recent years. From 1989 to 2000, 56 percent of the growth in non-oil imports came from developing countries; from 2000 to 2007, developing countries accounted for 70 percent of U.S. import growth. The increase from China was particularly dramatic: imports from China, which made up just 13 percent of the growth of non-oil imports from 1989 to 2000, accounted for 39 percent of the growth from 2000 to 2007.

No systematic information is collected on how imports are used in the economy, but two recent studies by economists from the Federal Reserve Board and the U.S. Bureau of Economic Analysis have used the input-output structure of the economy and detailed data on imports to impute imported goods and services to user industries and consumers (Kurz and Lengermann 2008; Yuskavage, Strassner, and Meideros 2008). Both studies find evidence of substantial substitution of imported intermediate inputs for domestic inputs since 1997, particularly in manufacturing industries. These studies provide empirical support for reports in the business literature of what has been

variously called offshore outsourcing and offshoring, the growth of global supply networks, and the hollowing out of U.S. manufacturing.<sup>1</sup>

Although the apparent growth of offshore outsourcing and offshoring of intermediate goods and services has spurred a heated debate over its effects on the U.S. economy and workers, our ability to assess these impacts is hampered by the limitations of government data. Our statistical system does not adequately measure certain rapidly expanding forms of international trade associated with the global integration of the production, compromising the accuracy of, and possibly biasing, key economic statistics and analysis based on these measures.

The Upjohn Institute, in collaboration with the National Academy of Public Administration, received grants from the Alfred P. Sloan Foundation and the U.S. Bureau of Economic Analysis to fund new research and a conference in fall 2009 focusing on measurement problems associated with the growth of outsourcing and offshoring. The goal of this project is to generate and disseminate a substantial new body of research on selected measurement problems that previously have received little attention.

The Upjohn Institute has announced its 2009 grant program. Please visit [www.upjohninstitute.org](http://www.upjohninstitute.org) for details.

## Import Price Measurement

Offshore outsourcing and offshoring involve the substitution of imported intermediate inputs for domestic inputs and typically are motivated by lower costs. Yet, price indexes, which are used to compute growth in real value-added output measures and productivity for industries and the aggregate economy, largely miss input price declines that result from changes in sourcing of those inputs. Implicitly, current methodology for collecting price data and constructing indexes assumes that sourcing is stable or that changes occur slowly and thereby do not impart significant bias to indexes—assumptions that may have become less innocuous given the apparent growth in outsourcing and offshoring.

Problems that price indexes have in capturing price drops due to substitution have long been recognized in the literature on the Consumer Price Index (CPI), but previously have been little studied in the context of inputs, including imported inputs. Much of the problem of import price measurement arising from offshore outsourcing and offshoring is analogous to the outlet substitution bias in the CPI. Just as the CPI does not capture price drops consumers realize as they shift purchases to lower-cost discount chains, the relevant price indexes do not capture price drops realized by producers as they shift the sourcing of inputs to low-cost foreign suppliers.

How does this problem in price statistics affect other economic measures and ultimately policy research? If the cost savings or input price declines that often occur with outsourcing and offshoring generally are not captured, then, all else the same, the growth of real imports will be understated and real output and productivity growth in U.S. industries will be overstated. It is likely that any biases to output and productivity measures have become more pronounced in recent years given the growth of imports from developing countries. Studies that endeavor to understand the implications of the growth in trade on employment, wages, and inequality in this country typically are based on data that include industry-level measures of real output, real imports, and

productivity. Therefore, systematic biases in these measures could bias the findings of such studies.<sup>2</sup>

## Outsourcing of Transformation

Some manufacturers have outsourced or offshored all transformation (i.e., manufacturing) functions, but have not been reclassified into another sector. Data from a special query on the 2007 Economic Census, which will be analyzed for the conference, will provide the first comprehensive picture of the extent of this phenomenon. The Census Bureau will make recommendations regarding whether and under what circumstances such establishments should be reclassified out of manufacturing. Although any reclassification would not affect GDP measures per se, it would affect output and productivity measures in manufacturing and, if substantial, could have implications for the relative importance of trade in explaining the decline of manufacturing employment in the 2000s, among other things.

## Other Measurement Issues Related to the Growth of Services Trade

In recent years, the composition of services trade has shifted toward business, professional, and technical services—the category, for imports, associated with services offshoring. Between 1997 and 2007, the share of services exports in business, professional, and technical services grew from 17.8 percent to 22.4 percent, while the share of services imports in this category grew from 13.8 percent to 20.2 percent. Some well-publicized studies that have classified many high- and low-skilled service occupations as “potentially offshorable” suggest that trade in business, professional, and technical services could grow rapidly in the near future (Blinder 2007; Jensen and Kletzer 2005).

Yet, measuring the growth of services offshoring and assessing its implications for U.S. workers will be especially challenging given current data limitations. There is some concern that the survey coverage on trade in services—which, unlike goods, may be transmitted electronically and thus

is not recorded by customs agents at border crossings—is incomplete. Even if coverage of trade in services were complete, no international price series on business and professional services is maintained by the Bureau of Labor Statistics, and this gap has been viewed as a major impediment to measuring the real growth of offshore outsourcing and offshoring in services (see, for example, Mann [2004]). Note, however, that just as is the case for imported goods, price drops associated with the substitution of imported for domestic services would not be properly captured even if prices for imported services did exist.

In addition, the data collected on services trade is far less detailed than that collected for goods. This lack of detail, coupled with a lack of longitudinal data on the industry-occupational structure of our economy, would limit our ability to understand the effects of services offshoring on U.S. workers, even if measuring the real value of services imports were not an issue.

## Conference Research

Research contributed by authors from academia, the statistical agencies, and the Federal Reserve system will be presented at the fall conference, which will be held in Washington, D.C. Collectively, the papers will explain the nature of key measurement problems, assess the empirical significance of these problems, and propose ways to improve the data. One set of papers, for example, will employ macro modeling techniques to simulate the effects of plausible biases in price indexes on industry and aggregate output and productivity measures and on estimates of the employment effects of trade. Another set will focus on possible biases resulting from offshore outsourcing and offshoring in specific industries. Recommendations will concern the construction of better price indexes, improvements to measuring services trade, and other data needed to document any impacts of trade on the employment and wages of American workers.

Research findings and recommendations will be summarized in a report to the Bureau of Economic Analysis and Congress in early 2010.

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## Notes

1. Offshore outsourcing refers to trade with an unaffiliated party, while offshoring refers to trade with an affiliated party.

2. I provide further discussion of this issue in Houseman (2008).

*Susan N. Houseman is a senior economist at the Upjohn Institute.*