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## Comment      Lori G. Kletzer

Much is new in thinking about services. The evolution in thinking about services trade was first a broadening from nontradable to tradable. Measuring services trade is now a task of considerable energy and importance, as evidenced by the chapters in this conference volume. From the labor market side, thinking about tradable services is very much linked to the current debate about offshoring. The intensity of the offshoring debate is often seen in claims and questions such as, “is your job next?”

This chapter takes on the question of the potential offshoring of jobs, specifically information and communication technology (ICT)-enabled occupations. These jobs are at the heart of the offshoring debate. The chapter is part of a research program, by van Welsum and coauthors, to quan-

tify the share of employment potentially affected by ICT-enabled offshoring (see van Welsum and Vickery [2005a, 2005b] and van Welsum and Reif [2006]). The authors are to be commended for their cross-country approach. Within the developed countries of the Organization for Economic Cooperation and Development (OECD), there appears to be interesting variation in the time-series pattern of the share of employment in these ICT-enabled occupations. Despite the use of the word offshoring, the analysis itself is not really about offshoring; it is about developing a set of jobs potentially affected by offshoring.

To develop the list of occupations, the authors start with job characteristics uniformly mentioned in the offshoring literature as the characteristics of offshorability: (a) intensive use of ICTs (to produce output); (b) output that can be traded or transmitted by ICTs (ICT-enabled services); (c) high codifiable knowledge content (little tacit, nonroutine, implicit knowledge); and (d) no face-to-face (customer) contact.<sup>1</sup> Through mostly subjective judgment, with some limited use of occupational descriptions, a set of occupations is drawn up for Europe (as the EU15), the United States, Canada, and Australia (these are reported in tables 9A.3 through 9A.6). Harmonizing the occupations across countries presents a challenge that the authors handle well.

In this type of analysis, much emphasis is, and should be, in the details of the lists. Just which jobs are potentially offshorable, due to their ICT-enabled characteristics? Focusing on table 9A.3, for the United States, many jobs conform to our priors on the type of work that seems offshorable (e.g., typists; bookkeepers, accounting, and auditing clerks; telephone operators; data entry keyers). Other occupations are more questionable, such as librarians, tellers, and secretaries. These last three occupations, while working with computers and using information, all involve either face-to-face work with the public or with the “boss.”<sup>2</sup> Air traffic controllers seem also unlikely to be offshorable, despite the claim by the authors that in Europe, an airport’s air traffic controllers can be located up to 1,000 km away from the site.

As is often the case, a more general and objective methodology is often preferred to the subjective judgment approach. Jensen and Kletzer (2006) use a novel methodology, based on geographic concentration of occupational employment to derive a distinction between tradable and nontradable occupations.

The figures present some interesting comparisons. The share (in total employment) of ICT-enabled occupations (potentially affected by offshoring) is rising in the EU15, declining in the United States and Canada, and

1. See Bardhan and Kroll (2003) and Blinder (2005) for a discussion of these characteristics.

2. This statement is based on a preliminary analysis in Kletzer (2006).

is flat in Australia, over the period 1995 to 2003. Separating clerical (seen as lower-skill) from nonclerical yields a potentially important difference: the share of clerical ICT-enabled occupations is rather sharply declining in the United States and Australia, while basically flat in EU15 and Canada. The share of nonclerical (seen as higher skill) occupations is rising in EU15, Australia, and the United States, while basically flat in Canada. Can the declines be due to offshoring? Certainly, but the ICT technology itself (through word processing and accounting software, voice-recognition software, and the internet) is likely to play a very large role. In this sense, we are back to the trade versus technology debate, last seen in the many papers on international competition and the decline of manufacturing employment.<sup>3</sup>

The chapter goes on to examine the time-series pattern of the share of ICT-enabled occupations (potentially affected by offshoring), in a regression setting. The authors recognize their specification to be somewhat ad hoc, based loosely in the literature on trade and employment, and some common sense. They model the share of employment that is potentially offshorable (total, as well as clerical separate from nonclerical) as related to: international openness (exports and imports of Business, Computer, and Information Services [BCIS] as a share of GDP); national economic structure (shares of services and high-tech industries in GDP; share of ICT investment in total gross fixed investment); and economy-wide framework influences (OECD product market regulation indicator, union density, human capital). The authors acknowledge that potentially endogenous factors are used as independent variables (exports and imports being the best examples). The objective is to arrive at some correlations, not test a causal model. The results are consistent with most priors, yielding few surprises. Most significantly, employment in potentially offshorable occupations is positively associated with exports of BCIS; negatively associated with imports of BCIS; positively associated with the share of ICT investment (for nonclerical ICT-enabled employment); positively associated with share of services in GDP (nonclerical); positively associated with share of high-tech output; negatively associated with anticompetitive product market regulations; positively associated with human capital; and negatively associated with union density.

Interestingly, by these measures, the United States should have a high share of potentially offshorable employment, not a low and declining share. A natural question then is whether the U.S. share is low because of offshoring. That is possible, but for all the OECD countries it seems more important to ask if declining share could be due to technological change. That is, ICT substituting for clerical employment.

As the research moves forward, a challenge will be to directly include

3. The literature is large. See Feenstra (2000) and Kletzer (2002) for references.

offshoring in the empirical specification. One way to think about the issue is that domestic ICT-enabled employment is a combination of two separable measures. The first is the one modeled by the authors, *potential* ICT-enabled services employment. That employment is a function of demand (exports, investment, imports, services output, technology) and supply (human capital, technology). The second measure is offshorable employment, where we might model the activity of offshoring as a function of technology, foreign wages, foreign labor quality, and other relative costs of remote services production, including managerial needs. Actual domestic ICT-enabled services employment equals potential ICT services employment minus offshorable employment. An implication of this thinking is that in the authors' current specification offshoring (actual) is a missing variable.

The empirical challenges in this type of research are considerable. The authors are to be commended on their cross-country approach. Much research in this area focuses on the United States, yet as revealed in the tables and figures, there is variation across the industrial countries, and this variation should be exploited in our research.

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