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## Labor market effects of outsourcing under industrial interdependence

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### Abstract

The consequences of *international* outsourcing in traditional models of trade are already well understood. However, with regard to empirical research there seem to be still some important shortcomings. Empirical studies on the labor market effects of outsourcing are mainly based on the same techniques that have been used for years. In terms of the adopted econometric specifications, one assumption is typical and – as we will show – critical in this regard. Practically all studies we are aware of assume independence between industries and neglect any spillover and feedback effects across industries. In fact, this is at odds with multi-sector general equilibrium models of trade. It is this paper's focus to relax this restrictive assumption and to suggest the use of different econometric methods. We consider national input–output linkages and cross industrial flows of workers as two important channels of inter-industrial spillovers in labor market effects. We focus on these transmission channels in an Austrian panel data set of 21 two-digit industries in the 1990s and find that industrial interdependencies induce a multiplier effect for changes in industry-specific variables such as international outsourcing. Disregarding spillover effects, therefore, leads to a substantial underestimation of the labor market implications of international outsourcing.

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## 1. Introduction

The notable increase of international outsourcing in the last few decades has come into the limelight of interest in the scientific discussion on the effects of globalization. As put forward by several authors, it is vertical fragmentation and international trade of intermediate goods that makes globalization today so different from market integration a hundred years ago. [Krugman \(1995, p. 331\)](#) remarks that “it is hard to argue that the sheer volume of trade marks a qualitative difference from previous experience” and [Feenstra & Hanson \(2001, p. 5\)](#) conclude that it is the composition of trade in general and the share of intermediate goods in particular which matters. [Grossman & Helpman \(2002b, p. 1\)](#) summarize the existing views by stating: “We live in an age of outsourcing.”

Nowadays, international outsourcing is seen as an important alternative to skill-biased technical change as induced by the increasing use of computer facilities to explain factor market developments in the industrialized world.<sup>2</sup> [Feenstra & Hanson \(1996a, 1999\)](#) have shown that international outsourcing accounts for up to 30% of the increase in relative wages observed in US labor markets in the 1980s. In continental European economies, wage effects should be of minor importance, given the prevalence of institutions like trade unions. In a unionized economy, international outsourcing has employment rather than wage effects, since factor prices are not (fully) flexible. Using a panel of Austrian manufacturing industries, [Egger & Egger \(2003\)](#) confirm this hypothesis and show that international outsourcing to Central and Eastern European Economies (CEECs) significantly shifts relative employment in favor of skilled labor.

In the theoretical discussion on international outsourcing, two strands of the literature can be distinguished. On one hand, traditional models of the Ricardo, Heckscher–Ohlin and Ricardo–Viner type emphasize the locational aspect and investigate the role of transport costs, costs for service links and the like for international outsourcing as compared to production within the borders of a single economy (see [Jones, 2000](#)). On the other hand, models building upon contract theoretical approaches emphasize a firm’s decision to produce in-house or to purchase inputs from outside the firm (see [Grossman & Helpman, 2002a](#)). In this case, the question of national versus international outsourcing is of second-order importance. However, as put forward by [McLaren \(2000\)](#), international openness may have important market thickness effects which are able to explain cross-country differences in the structure of industrial production.<sup>3</sup>

In this paper, we emphasize a specific aspect of the theoretical insights, namely the sectoral interdependence in a general equilibrium setting. It is well known from the literature that access to international outsourcing in a specific industry may have substantial feedback effects on other industries. On one hand, the outsourcing decisions of firms may depend on the production structure and factor intensities in other sectors. On the other hand, one may think of factor flows that transmit international outsourcing effects to other sectors. In any case, it is implausible from a theoretical point of view to assume sectoral developments as being independent.

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<sup>2</sup> Potential gains and losses of international outsourcing have been put forward in a recent debate on the consequences of globalization. See the two articles by [Samuelson \(2004\)](#) and [Bhagwati, Panagariya, & Srinivasan \(2004\)](#). The latter conclude: “While outsourcing will increase aggregate income, it can, like international trade in goods, also lead to displacement of workers from certain sectors” (p.35).

<sup>3</sup> See [Egger & Falkinger \(2003a\)](#) for a rigorous discussion on the possible types of decisions involved, when a firm outsources input production.

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