

Abschlussbericht

zum durch die Deutsche Forschungsgemeinschaft

geförderten Projekt:

**Labour market effects of international outsourcing: A
comparative analysis with micro-data**

1 Allgemeine Angaben

- **DFG-Geschäftszeichen:** GO 1386/1-1.
- **Antragsteller:** Prof. Holger Görg (School of Economics, University of Nottingham) und Prof. Wolfram Schrettl (Fachbereich Wirtschaftswissenschaften und Osteuropa-Institut, Freie Universität Berlin). Bewilligungsschreiben vom 22.02.2005.
- **Thema des Projekts:** Labour market effects of international outsourcing: A comparative analysis with micro-data.
- **Berichtszeitraum:** Die Fortführung des Projektes am Osteuropa-Institut (OEI) Regensburg beruhte auf einer Forschungskoooperation zwischen dem Zentralinstitut Osteuropa-Institut der Freien Universität Berlin (vertreten durch den Projektleiter, Prof. Wolfram Schrettl) und dem OEI Regensburg. Die Laufzeit erstreckte sich vom 06.01.2009 bis 31.12.2009, während dessen der Projektleiter dem OEI Regensburg Mittel für eine wissenschaftliche Mitarbeiterstelle entsprechend BAT (W) II a /2 für einen Zeitraum von sieben (7) Monaten zur Verfügung stellte.
- **Liste der Publikationen aus diesem Projekt::**

Richard Frensch, European Trade in Parts and Components: Searching (for a Trade Model for Searching) for Offshoring Evidence. OEI Working Paper, Februar 2010a, OEI Regensburg.

Richard Frensch, Trade Liberalisation and Import Margins. Erscheint in *Emerging Markets Finance & Trade*. Mai–Juni 2010b.

2 Arbeits- und Ergebnisbericht

2.1 Ausgangsfragen und Zielsetzung des Projekts

Earlier phases of the project contributed to the debate on labour market effects of international outsourcing (in the following referred to as *offshoring*). Geishecker and Görg (2008) demonstrate that offshoring low skill tasks increases (decreases) the wages of German high (low) skill

employees. Comparing wage and employment effects across countries features significant differences in this respect, which may be motivated by different labour market institutions, as set out in Geishecker et al. (2008).

The remaining OEI project phase was used for putting forward an alternative explanation for internationally varying labour market effects of offshoring. Early project work was guided by the theoretical framework of Feenstra and Hanson (1996), in which offshoring intermediate inputs is costless, predicting the effects identified in Geishecker and Görg (2008). More recent theoretical work, however, generalises Feenstra and Hanson (1996) by introducing trade costs that potentially limit offshoring (Grossman and Rossi-Hansberg, 2008). More offshoring of low skill tasks, made possible by decreasing trade costs, then *vet. par.* implies a positive productivity effect in the source country, which appears strongest in those firms offshoring most, and which therefore carries the highest benefits for skill groups hit strongest by offshoring. Labour market effects to the disadvantage of skill groups hit strongest by offshoring, as already identified in Feenstra and Hanson (1996), are thus counterbalanced and potentially dominated. Firms that have already offshored most tasks are increasingly likely to strengthen already existing rather than creating new offshoring relationships. In the terminology of trade, strengthening existing offshoring relationships means strengthening offshoring *along the intensive margin*, as opposed to strengthening offshoring *along the extensive margin* by new relationships. One might therefore suspect the unambiguous results of Geishecker and Görg (2008) to hold for offshoring relationships strengthened along the extensive, rather than along the intensive margin, represented by margin effects of trade flows of intermediate goods generated by offshoring.

References

Feenstra Robert C., and Gordon H. Hanson, Foreign Investment, Outsourcing and Relative Wages. In: Robert C. Feenstra, Gene M. Grossman, and David A. Irwin (eds.), *The Political Economy of Trade Policy: Papers in Honor of Jagdish Bhagwati*. Cambridge, MA, MIT Press, 1996.

Geishecker, Ingo, and Holger Görg, *Winners and Losers: A Micro-level Analysis of International Outsourcing and Wages*. *Canadian Journal of Economics* 41, 1, 2008, pp. 243–270.

Geishecker, Ingo, Holger Görg, and Jakob R. Munch, *Do Labour Market Institutions Matter? Micro-level Wage Effects of International Outsourcing in three European Countries*. Kiel Working Papers, 1404, Kiel Institute for the World Economy, 2008.

Grossman, Gene M., and Esteban Rossi-Hansberg, *Trading Tasks: A Simple Theory of Offshoring*. *American Economic Review* 98, 5, 2008, pp. 1978–1997.

2.2 Entwicklung der durchgeführten Arbeiten

The remaining OEI Regensburg phase of the project involved three steps.

(1) A first precondition for analysing intermediate goods trade flows generated by offshoring relationships is the existence of an appropriate data base. Accordingly, data work had to shift from analysing firm data to analysing highly disaggregated trade data.

For this purpose, the OEI Regensburg, together with the Statistics Division of UNECE Geneva, has developed a unique data base, with source data coming from the ComTrade foreign trade data of UN Statistics. For 46 countries – OECD members and emerging economies from Central and Eastern Europe – some 90 million data points describe total exports and imports on the lowest level of the SITC Rev.3 nomenclature between 1992 and 2004 as well as imports from the 55 most important partner countries. The more than 3,100 basic categories of the SITC Rev.3 nomenclature can be re-classified *via* the UN Classification by Broad Economic Categories (BEC) into basic SNA activities, i.e., into primary, intermediate, capital, and consumer goods.

Specifically, BEC permits the identification of a subset of intermediate goods used as inputs for capital goods, i.e. parts and accessories of capital goods, in this project – consistent with the use in the rest of the literature – referred to as *parts and components*.

(2) A second precondition for analysing trade flows generated by offshoring relationships is the development of an appropriate empirical framework.

Recent empirical studies have been searching for evidence on and driving forces for offshoring

by analysing gross parts and components trade flows related to offshored activities using gravity equations augmented by *ad hoc* measures of supply-side country differences. Frensch (2010a) suggests that gravity formulations of this sort are potentially mis-specified, due to theoretically unmotivated attempts of allowing for both complete and incomplete specialisation influences on gross trade flows within the same gravity framework. The problem with complete specialisation, even when embedded into factor proportions theory, is that analysing gross trade flows is simply not informative about the specific driving forces connected to new trade theories or economic geography. On the other hand, pure incomplete specialisation à la Heckscher-Ohlin presumes that each good is produced in each country: with respect to offshoring activities, this is not necessarily true before offshoring occurs. I.e., relevance points to incomplete specialisation theories that leave room for extensive margin adjustment, as in Grossman and Rossi-Hansberg (2008), where firms' decisions about offshoring are embedded in an environment of incomplete factor price equalisation, firm-level technologies, and cost heterogeneity of offshoring across a continuum of tasks. Frensch (2010a) suggests an alternative specification where supply-side country differences compatible with Grossman and Rossi-Hansberg (2008) provide incentives for incomplete specialisation and trade with parts and components: supply-side country differences in factor endowments and/or wages always work relatively to the rest of the world, quite in analogy to modelling trade barriers in the most recent gravity literature. Applying an appropriate gravity framework to a Europe-wide sample of countries results in finding evidence for offshoring activities across Europe, which generate two-way trade in parts and components driven by supply-side country differences between the EU-10, i.e. the central and east European post-2004 EU members, and the pre-2004 EU members (the EU-15).

In particular, results in Frensch (2010a) confirm that more exports of parts and components from EU-10 to EU-15 countries are predominantly realised along the extensive margin, in stark contrast to parts and components exports from east Asia, including China. Interpretation of this in the spirit of Grossman and Rossi-Hansberg (2008) suggests the conjecture that the latest waves

of offshoring activities from “old” to “new” EU members may have been more likely to hurt (low-skill) workers in the old EU than offshoring to east Asia.

(3) A third step involves searching for possible explanations for the stark contrast in margin behaviour of EU-15 imports of parts and components from EU-10 *versus* from east Asia. Part of this contrast may be due to a comparatively strong institutional trade liberalisation between the EU-15 and the EU-10 in the latter’s run-up to EU membership. Such an argument is made in Frensch (2010b), however, on the basis of recent complete specialisation models. The paper explores the impact of institutional trade liberalisation on import values as well as on extensive and intensive import margins across broad categories of goods within a gravity framework. Frensch (2010b) finds stronger extensive import margin effects of institutional trade liberalisation for intermediate and capital goods compared to consumer goods. Second, when allowing for product differentiation by country of origin, there is evidence that the import volume effect of institutional trade liberalisation is primarily realised along the extensive margin.

2.3 Stellungnahme zur wirtschaftlichen Verwertbarkeit

Eine wirtschaftliche Verwertbarkeit der Ergebnisse ist nicht gegeben.

2.4 Kooperationspartner und Projektmitarbeiter

Die Arbeit erfolgte in enger Zusammenarbeit zwischen dem Antragsteller Prof. Wolfram Schrettl, PhD (Osteuropainstitut, Freie Universität Berlin) und dem Projektmitarbeiter Dr. Richard Frensch (OEI Regensburg und Universität Regensburg).

2.5 Qualifikation des wissenschaftlichen Nachwuchses

Im Rahmen der Projektarbeiten schloss Dr. Richard Frensch mit einer wissenschaftlichen Aussprache zum Thema „Handel mit Teilen und Komponenten: Evidenz für Offshoring?“ im

Juli 2009 sein Habilitationsverfahren an der wirtschaftswissenschaftlichen Fakultät der Universität Regensburg ab.

3 Zusammenfassung

In the remaining phase of the project, we searched for evidence on and driving forces for offshoring using highly disaggregated trade data. We suggest that traditional gravity formulations employed for this purpose are potentially mis-specified, and suggest an alternative specification where supply-side country differences compatible with Grossman and Rossi-Hansberg (2008) provide incentives for incomplete specialisation and trade with parts and components. Results support evidence for offshoring activities across Europe, driven by supply-side country differences. In particular, results in Frensch (2010a) confirm that more exports of parts and components from EU-10 to EU-15 countries are predominantly realised along the extensive margin, in stark contrast to parts and components exports from east Asia, including China. Further interpretation of the results in the spirit of Grossman and Rossi-Hansberg (2008) suggests the conjecture that the latest waves of offshoring activities from “old” to “new” EU members may have been more likely to hurt (low-skill) workers in the old EU than offshoring to east Asia. These results are part of a working paper (Frensch, 2010a), soon to be submitted to a refereed journal.

Searching for possible explanations for the stark contrast in margin behaviour of EU-15 imports of parts and components from EU-10 *versus* from east Asia, we reached for a comparatively strong institutional trade liberalisation between the EU-15 and the EU-10 in the latters’ run-up to EU membership as a possible explanation. Frensch (2010b) indeed finds evidence that the import volume effect of institutional trade liberalisation is primarily realised along the extensive margin. These findings are already accepted for publication in a refereed journal.