Outsourcing and the Political Economy of Globalization: A Discussion Note

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Outsourcing and the Political Economy of Globalization

If at this point one returns to the question of how big is global production sharing, the answer clearly is 'very big'. (Yeats, 2001)

Outsourcing appears to have become the *vilain du jour* in the public discourse of globalization.

More than trade or international financial flows, outsourcing has become the particular target of critics of globalization and some of the most frenzied defense by defenders of globalization.

What is particularly interesting about this is that neither critics nor defenders can claim much in the way of systematic theoretical or empirical basis for their arguments. Not only is there no conventional definition of the phenomenon, there is not even a conventional name.

Some of the dispute over definition is just silly, but some of it is substantive.

For some purposes, what we

¹Interestingly, even in the centers of the most aggressive anti-immigrant politics, immigration does not appear to strongly associated with globalization. Greenaway and Nelson (2004) develop some of the differences between these two policy domains in an endogenous policy framework.

²In addition to outsourcing there is: offshoring; production fragmentation; production sharing; slicing up the value chain; commodity chain analysis; globalization of production; integration/disintegration of production; vertical specialization; and surely there are others.

³Toward the silly end of the spectrum is the attempt by Bhagwati, Panagariya and Srinivasan (2004) to shift the discussion away from outsourcing in general by redefining it as what the WTO calls "Mode 1 services", then say that outsourcing (i.e. mode 1 service trade) is really pretty small, and then to criticize confusion among the various modes of service provision. Services are unquestionably important to the discussion, both as the thing outsourced (what BPS are on about) and as part of what makes outsourcing possible in manufacturing [a core concern in both the fundamental early work by Jones and Kierzkowski (1990) and newer work in the context of division of labor models (Harris, 1995; Burda and Dluhosch, 2002; Francois and Nelson, 2000) and contract theoretic models (McLaren, 2000; Grossman and Helpman, 2002, 2003, 2004, 2005)]. However, much of the public discussion of outsourcing is only indirectly about services. Contra BPS, it seems to me that we should call Mode 1 service trade, "Mode 1 service trade", and use outsourcing more broadly. Otherwise, we will need to find another name for what everyone else (including such economists as Arndt, Deardorff, Egger, Feenstra, Grossman, Helpman, Jones, Kierzkowski, Kohler, Samuelson, and Venables) calls some variant

are really interested in is just that part of a production strategy that involves contracting at arms length for something that was once actually produced in-house. In principle this could involve many patterns of outsourcing only some of which are of interest from the point of view of globalization, and fewer of which are the target of hostility by critics of globalization. From a firm-theoretic viewpoint, this is probably the most interesting definition. Closely related, and almost certainly part of the reason for general concern, are decisions to contract abroad even if there was no initial Home, in-house production and production abroad in the context of whollyowned subsidiaries (i.e. multinationalization). From the perspective of public response to globalization, globalization of production, with global outsourcing only the most politically salient part (at least currently), is probably the relevant concept. Nonetheless, in this note I focus on the direct and indirect political economic effects of outsourcing proper.

Before proceeding to a consideration of those effects it is useful to note that outsourcing, unlike many of the other forms of globalization, is inherently non-marginal in form. That is, in a small way, outsourcing (at least from a trade theoretic perspective) transforms the *structure* of the economy. Consider a simple version of the most common notion of outsourcing: some part

of "outsourcing".

⁴The invitation to the workshop at Princeton mentioned firm decision making with respect to outsourcing. The main framework here would be the firm/contract theoretic approach with roots in the Coase-Arrow-Williamson theory of the firm. The most advanced work on outsourcing in this framework of which I am aware is by John McLaren (2000) and Gene Grossman and Elhanan Helpman (2002, 2003, 2004, 2005). Closely related is work on the firm's choice between licensing and FDI (e.g. Ethier, 1986; Horstman and Markusen, 1987, 1996; Ethier and Markusen, 1996; Markusen, 2001) and the earlier work by business economists on mode of market service (e.g. Buckley and Casson, 1981; Cappel, 1992). In either of these cases what is distinctive about outsourcing relative to FDI is lower fixed costs, reduced managerial control, increased risk of appropriation of firm specific assets, and much more limited capacity to engage in strategic transfer pricing. To economize on space I will not pursue this further here.

of a production process that used to done at home can now be outsourced. Suppose that the production function in some sector, j, can be written as:

$$y_j = f^j(g^1(K,L), g^2(K,L)),$$

and suppose that subproduction process 2 is labor-intensive relative to sub-production process 1. Finally suppose that for some reason these components become separable and the labor intensive component is outsourced to a low-wage country.⁵ Note that the dimensionality of the economy (Home, Foreign, and World) has changed. Under the standard trade-theoretic definition of industry, one sector (i.e. i) has disappeared and two new industries have appeared. As the sizable literature on outsourcing in competitive trade models suggests, the income distribution effects are ambiguous for precisely this reason (Deardorff, 2001, 2002, 2005; Egger, 2002; Egger and Falkinger, 2004; Jones, 2000; Jones and Kierzkowski, 1990, 1998; Kohler, 2001, 2003, 2004; Venables, 1999). Welfare effects are trickier still since, as the same literature suggests, outsourcing looks like (or just is) a skill-biased technical change (see also Arndt, 1997, 1998, 1999; de Groot, 2001; Dell'Amour, et al., 2000; Egger and Egger, forth,; Ethier, 2005; Feenstra, 1998; Long, 2005; Siegel and Grilliches, 1992). Both of these interfere with inference in the standard mandated wage regression methodology that is used to evaluate the effects of both trade and outsourcing (e.g. Feenstra and Hanson, 1999): the first because the HO-based econometric framework assumes fixed dimensionality; and the second because technical change is inferred

⁵For many issues it matters why the production process becomes separable, e.g.: for independent reasons, costs might fall so as to make outsourcing profitable e.g. there may be changes in labor skills, infrastructure, policy, etc. in other countries that make outsourcing profitable); there may be a technological change that makes separation possible; etc. For the point we are making here, however, it doesn't much matter.

from patterns in the errors.

I refer to the distributional effects of outsourcing as *direct* political economic effects reflecting the usual approach in endogenous policy modeling of deriving political preferences over policy directly from distributional effects. There is a growing body of empirical work suggesting that outsourcing might have sizable distributional effects (Anderton and Brenton, 1999; Anderton, Brenton and Oscarsson, 2002; Davis, 1999; Egger and Egger, 2002, 2003, 2005; Egger and Pfaffermayer, 2004; Egger, Pfaffermayer, and Wolfmayr-Schnitzer, 2001; Falk and Koebel, 2002; Feenstra and Hanson, 1996, 1997, 1999; Görg and Hanley, 2005; Miller, 2001). However, we have just seen that the theoretical foundations for much of this work is suspect; and, while most of the effects are larger than those derived from standard trade effects, they are still quantitatively rather small. Given the widespread social concern with outsourcing noted above, from a political economy perspective we are left with a couple of alternatives: we can presume that the effects of outsourcing are in fact small and try to understand how the politics of response to outsourcing work in this case; or we can seek effects that work through indirect channels.⁶

A first step toward the first alternative is to move away from the long-term perspective implied by standard trade-theoretic reasoning. For all of our attachment to the Stolper-Samuelson theorem (and its specific-factor equivalent) as the lever of political economic analysis, there is actually very little compelling evidence that such long-term distributional effects have strong explanatory power. Almost wholly absent from systematic research on the

⁶An alternative approach would be to consider the dynamics of social learning. For a very preliminary attempt at this sort of thing, with application to public opinion on NAFTA, see Hall and Nelson (2004).

political-economy of trade policy is a recognition that short-run adjustment costs are individually large, asymmetrically distributed, and follow patterns systematically different from the long-run distributional effects (Davidson and Matusz, 2004, forth.; Klein, Schuh, and Triest, 2003; Kletzer, 2002). Davidson, Matusz and Nelson (2005) argue that it is precisely this sort of shock, and the visible association of trade and unemployment, that leads to publicly successful fairness-based claims for protection. It seems arguable that outsourcing is a particular target of such claims because the job loss is both non-marginal, because whole parts of the production process are outsourced (rather than marginal adjustments in employment), and closely associated with globalization.⁷ This seems like an area in which survey research could dramatically advance our understanding of the public politics of globalization.⁸ At a minimum, considerably more work needs to be done on the role of unemployment–adding to the very small number theoretical and empirical papers that seek to examine the link between unemployment and trade policy (e.g. Bradford, 2003; Davidson, Magee and Matusz, forth.; Davidson, Matusz and Nelson, 2004; Magee, 2001).⁹

⁷Thus, outsourcing is a sort of subtle version of the sort of Schumpeterian competition modeled in much of new (now rather middle aged) growth theory (e.g. Aghion and Howitt, 1998; Dinopoulos and Segerstrom, 1999; Grossman and Helpman, 1991; Segerstrom, Anant and Dinopoulos, 1990). Models of this sort have been developed in the context of equilibrium unemployment (e.g. Griebern, 2004; Lingens, 2003; Sener, 2001).

⁸Note that the issue here has to do with identifying widely held notions of fairness and how they are related to unemployment, globalization, attachment to community, etc. This sort of work might build on the important work of Hochschild (1981), McCloskey and Zaller (1984), Verba and Orren (1985), Mutz and Mondak (1997) and, in particular, Schlozman and Verba (1979).

⁹An interesting recent paper by Hartmut Egger and Udo Kreickemeier (2005) develops a model of the link between outsourcing and equilibrium unemployment in the context of a fair wage model. This seems a plausible framework for political economy analysis.

An alternative approach seeks to identify key political and economic institutions that support a given relative wage structure and the ways that globalization transforms those structures. These are indirect effects of globalization on income distribution that might be missed by standard methods because the incidence of effects is not identical to the incidence of trade, or even outsourcing. Two institutions are particularly obvious: unions; and welfare state structures. Unions play a major role in all OECD countries, in particular they have well-known labor market effects, countries with encompassing labour market institutions have: lower wage inequality (OECD, 1997); lower unemployment (OECD, 1997); higher growth (Calmfors, 1993; Danthine/Hunt, 1994); and as unionization has declined, wage inequality has increased (Freeman, 1998). There are a variety of reasons for believing that globalization in general, and outsourcing/ globalization of production in particular, would have systematic effects on union power: outsourcing improves the firm's outside option in its bargaining with unions, thus increasing the bargaining power of firms; increased competition may reduce the rents available for sharing (even triggering an end to relatively cooperative bargaining); and by reducing the payoff to union membership, globalization may trigger reductions in firm membership (and thus both bargaining and political influence). 10 Similarly, it is clear that welfare state institutions, particularly interventions that directly support higher wages, could be affected by globalization in general,

¹⁰A number of recent papers have begun to examine these relationships primarily in partial equilibrium environments: Perry (1997); Skaksen (2004); and Zhao (2001). There is also a much larger literature on FDI in this context that is obviously directly related. Also related is the impact of outsourcing on the terms of oligopolistic competition, and thus profits, e.g. Chen, Ishikawa, and Yu (2004); Egger and Egger (2003, 2004). There is also a sizable literature on oligopolistic competition in vertical markets that is directly relevant here. In both the firm-union and oligopoly cases there are both theoretical and empirical challenges in moving from the microeconomic to the macro-political-economic, but the potential payoffs seem large.

and outsourcing in particular.11

To this point we have followed the general approach of seeking to root our political economic analysis in the preferences of citizen/voters or citizen/lobbyists. An alternative is to "bring the state back in" again. ¹² Ultimately, I am not at all convinced that we can explain the most significant facts about trade policy (i.e. overall levels of protection) as preference-induced equilibria. ¹³ We need much more work on the political economic foundations of change in elite preferences and the ways in which these preferences are constrained by the, rather weakly and uncertainly held, trade policy preferences of the citizenry.

¹¹In addition to the sizable political science literature which seeks to empirically identify these effects, some recent research has sought to build political economy models that capture the effects of globalization shocks on welfare state institutions. Konishi, Saggi and Weber (1999) attempt to endogenize trade policy in an environment with FDI. Rama and Tabellini (1998) and Gaston and Nelson (2004) examines the intersection of globalization, welfare states, and unions in a simple political economy model, and Gaston and Nelson then carries out a preliminary empirical analysis. Egger and Kreickemeier (2005) examine the effect of welfare state effort on unemployment in an environment with equilibrium unemployment and outsourcing.

¹²Though research on trade policy has been pretty innocent of the concerns about the state that attracted attention in other areas of political economy research, so maybe I should drop the "again".

¹³I do think that this approach does a respectable job at accounting for variance across sectors, but this is considerably less interesting than explaining why trade policy has been so liberal for half a century, nor will it be much help in explaining why, if/when or where there will be a response to globalization. Just as an example, the currently dominant framework for explaining trade policy in economics (i.e. the Grossman-Helpman model) explains this as a matter of state taste (i.e. the weight on aggregate social welfare in the state's objective function).

References/Bibliography

Aghion, Philippe and Peter Howitt (1998). Endogenous Growth Theory. Cambridge: MIT Press.

Andersson, Thomas and Torbjörn Fredriksson (2000). "Distinction between Intermediate and Finished Products in Intra-firm Trade". *International Journal of Industrial Organization*; V.18-#5, pp. 773-792.

Anderton, Bob and Paul Brenton (1999). "Did Outsourcing to Low-wage Countries Hurt Less-skilled Workers in the UK?". in P. Brenton and J. Pelkmans, eds. *Global Trade and European Workers*. London: Macmillan, pp. 147-166.

Anderton, Bob and Paul Brenton (1999). "Outsourcing and Low-Skilled Workers in the UK". *Bulletin of Economic Research*; V.51-#4, pp. 267-285.

Anderton, Bob, Paul Brenton and Eva Oscarsson (2002). "What's Trade Got to Do With It? Relative Demand for Skills within Swedish Manufacturing". *Weltwirtschaftliches Archiv*; V.138-#4, pp. 629-651.

Arndt, Sven (1997). "Globalization and the Open Economy". *North American Journal of Economics and Finance*; V.8-#1, pp. 71-79.

Arndt, Sven (1998). "Globalization and the Gains from Trade". In K.-J. Koch and K. Jaeger, eds. *Trade, Growth, and Economic Policy in Open Economies*. New York: Springer, pp. 3-12.

Arndt, Sven (1999). "Globalization and Economic Development". *Journal of International Trade and Economic Development*; V.8-#3, pp. 309-18

Arndt, Sven (2001). "Offshore Sourcing and Intra-Product Specialization in Preference Areas". In S. Arndt and H. Kierzkowski, eds. *Fragmentation: New Production Patterns in the World Economy*. New York: OUP, pp. 76-87.

Baldone, Salvatore, Fabio Sdogati, and Lucia Tajoli (2001). "Patterns and Determinants of International Fragmentation of Production: Evidence from Outward Processing Trade between the EU and Central Eastern European Countries". *Weltwirtschaftliches Archiv*; V.137-#1, pp. 80-104.

Beamon, Benita (1998). "Supply Chain Design and Analysis: Models and Methods". *International Journal of Production Economics*; V.55-#3, pp. 281-294.

Belderbos, René (2001). "Backward Vertical Linkages of Foreign Manufacturing Affiliates:

Evidence from Japanese Multinationals". World Economy; V.29-#1, pp. 189-208.

Bhagwati, Jagdish, Arvind Panagariya and T.N. Srinivasan (2004). "The Muddles over Outsourcing". *Journal of Economic Perspective*; V.18-#4, pp. 93-114.

Bond, Eric (2001). "Commercial Policy in a 'Fragmented' World". *American Economic Review*; V.91-#2, pp. 358-362.

Borrus, Michael (1997). "Left for Dead: Asian Production Networks and the Revival of US Electronics". in Barry Naughton, ed. *The China Circle: Economics and Technology in the PRC, Taiwan, and Hong Kong*. Washington, D.C.: Brookings, pp. 139-163.

Borrus, Michael and John Zysman (1997). "Globalization with Borders: The Rise of Wintelism as the Future of Global Competition". *Industry and Innovation*; V.4-#2, pp. 141-166.

Bradford, Scott (2003). "Protection and Jobs: Explaining the Structure of Trade Barriers Across Industries". *Journal of International Economics*; V.61-#1, pp. 19-39.

Buckley, Peter and Mark Casson (1981). "The Optimal Timing of a Foreign Direct Investment". *Economic Journal*; V.91-#361, pp. 75-87.

Burda, Michael and Barbara Dluhosch (1999). "Globalization and European Labour Markets". In. H. Siebert, ed. *Globalization and Labor*. Tubingen: Mohr, pp. 181-207.

Burda, Michael and Barbara Dluhosch (2002). "Fragmentation, Globalization and Labour Markets". In D. Greenaway, R. Upward, and K. Wakelin, eds. *Trade, Investment, Migration and Labour Market Adjustment*. New York: Palgrave, pp. 47-65.

Burda, Michael and Barbara Dluhosch (2002). "Cost Competition, Fragmentation and Globalization". *Review of International Economics*; V.10-#3, pp. 424-441.

Calmfors, Lars (1993). "Centralization of Wage Bargaining and Macroeconomic Performance: A Survey". *OECD Economic Studies*; #21, pp. 161-191.

Cantwell, John (1994). "The Relationship between International Trade and International Production". In D. Greenaway and L.A. Winters, eds. *Surveys in International Trade*. Oxford: Blackwell, pp. 303-328.

Capel, Jeannette (1992). "How To Service a Foreign Market under Uncertainty: A Real Option Approach". *European Journal of Political Economy*; V.8-#3, pp. 455-475.

Chen, Yongmin, Jota Ishikawa, and Zhihong Yu (2004). "Trade Liberalization and Strategic Outsourcing". *Journal of International Economics*; V.63-#2, pp. 419-436.

Cheng, Leonard, Larry Qiu, and Guofu Tan (2001). "Foreign Direct Investment and International Fragmentation in Production". in S.W. Arndt and H. Kierzkowski, eds., *Fragmentation: New Production Patterns in the World Economy*. Oxford: OUP, pp.165-186.

Danthine, Jean-Pierre and Jennifer Hunt (1994). "Wage Bargaining Structure, Employment and Economic Integration". *Economic Journal*; V.104-#424, pp. 528-541.

Davidson, Carl, Christopher Magee, and Steven Matusz (forth.). "Trade, Turnover and Tithing". Ms: Michigan State University.

Davidson, Carl and Steven Matusz (2004). *International Trade and Labor Markets: Theory, Evidence and Policy Implications*. Kalamazoo: W.E. Upjohn Institute for Employment Research.

Davidson, Carl and Steven Matusz (forth.). "Long-run Lunacy, Short-run Sanity: A Simple Model of Trade with Labor Market Turnover". *Review of International Economics*; forth.

Davidson, Carl, Steven Matusz and Douglas Nelson (2005). "Can Compensation Save Free Trade?". ms: Leverhulme Centre for Research on Globalisation and Economic Policy.

Davidson, Carl, Steven Matusz and Douglas Nelson (2005). "Fairness and Adjustment to Trade Shocks in a Simple Political Economy". Ms: Leverhulme Centre for Research on Globalisation and Economic Policy.

Davis, John (1999). "Is Trade Liberalization an Important Cause of Increasing U.S. Wage Inequality? The Interaction of Theory and Policy". *Review of Social Economy*; V.57-#4, pp. 488-506.

de Groot, Henri (2001). "Macroeconomic Consequences of Outsourcing. An Analysis of Growth, Welfare, and Product Variety". *De Economist*; V.49-#1, pp. 53-79.

Deardorff, Alan (2001). "Fragmentation across Cones". in S.W. Arndt and H. Kierzkowski, eds., *Fragmentation: New Production Patterns in the World Economy*. Oxford: OUP, pp. 35-51.

Deardorff, Alan (2002). "Fragmentation in Simple Trade Models". *North American Journal Of Economics And Finance*; V.12-#1, pp. 121-137.

Deardorff, Alan (2005). "A Trade Theorist's Take on Skilled-labor Outsourcing". *International Review of Economics and Finance*, V.14-#3, pp. 259-271.

Dehejia, Vivek (1992). "Kaleidoscopic Comparative Advantage and the Rising Skill Differential". Ms: Columbia University.

Dell'mour, Rene, Peter Egger, Klaus Gugler, Michael Pfaffermayr, and Yvonne Wolfmayr-

Schnitzer (2000). "Outsourcing of Austrian Manufacturing to Eastern Countries: Effects on Productivity and the Labor Market". In S. Arndt, H. Handler, and D. Salvatore, eds. *Eastern Enlargement: The Sooner, the Better?* Vienna: Austrian Ministry for Economic Affairs, pp. 249-302.

Dicken, Peter, Philip Kelly, Kris Olds, and Henry Wai-chung Yeung (2001). "Chains and Networks, Territories and Scales: Towards an Analytical Framework for the Global Economy". *Global Networks*; V.1-#2, pp. 89-112.

Dinopoulos, Elisa and Paul Segerstrom (1999). "A Schumpeterian Model of Protection and Real Wages". *American Economic Review*; V.89-#3, pp. 450-472.

Dluhosch, Barbara (1997). "Trade Liberalization, Technological Change, and the Economics of Outsourcing". ms: University of Köln.

Egger, Hartmut (2002). "International Outsourcing in a Two-Sector Heckscher-Ohlin Model". *Journal of Economic Integration*; V.17-#4, pp. 687-709.

Egger, Hartmut and Peter Egger (2001). "Cross-border Sourcing and Outward Processing in EU Manufacturing". *North American Journal of Economics And Finance*; V.12-#3, pp. 243-256.

Egger, Hartmut and Peter Egger (2002). "How International Outsourcing Drives Up Eastern European Wages". *Weltwirtschaftliches Archiv*; V.138-#1, pp. 83-96

Egger, Hartmut and Peter Egger (2003). "Outsourcing and Skill-Specific Employment in a Small Economy: Austria After the Fall of the Iron Curtain". *Oxford Economic Papers*; V.55-#4, pp. 625-642.

Egger, Hartmut and Peter Egger (2003). "On Market Concentration and International Outsourcing". *Applied Economics Quarterly*; V.49-#1, pp. 49-64.

Egger, Hartmut and Peter Egger (2004). "International Outsourcing and Price-Cost Margins in the EU". *Review of Industrial Organization*; V. 25-#1, pp. 45-69.

Egger, Hartmut and Peter Egger (2005). "Labor Market Effects of Outsourcing Under Industrial Interdependence". *International Review of Economics and Finance*, V.14-#3, pp. 349-363.

Egger, Hartmut and Peter Egger (2005). "The Determinants of EU Processing Trade". *World Economy*; V.28-#2, pp. 147-168.

Egger, Hartmut and Peter Egger (2005). "International Outsourcing and the Productivity of Low-skilled Labor in the EU". *Economic Inquiry*, forthcoming.

Egger, Hartumut and J. Falkinger (2003). "The Distributional Effects of International Outsourcing in a 2 × 2 Production Model". *North American Journal of Economics and Finance*; V.14-#2, pp. 189-206.

Egger, Hartmut and Udo Kreickemeier (2005). "Fair Wages and International Fragmentation". Ms: University of Nottingham.

Egger, Peter and Michael Pfaffermayr (2004). "Two Dimensions of Convergence: National and International Wage Adjustment Effects of Cross-border Outsourcing in Europe". *Review of International Economics*; V.12-#5, pp. 833-843.

Egger, Peter, Michael Pfaffermayr, and Yvonne Wolfmayr-Schnitzer (2001). "The International Fragmentation of Austrian Manufacturing: The Effects of Outsourcing on Productivity and Wages". *North American Journal of Economics And Finance*; V.12-#3, pp. 257-272.

Ethier, Wilfred (1986). "The Multinational Firm". *Quarterly Journal of Economics*. V.101-#4, pp. 805-833.

Ethier, Wilfred (2005). "Globalization, Globalisation: Trade, Technology and Wages". *International Review of Economics and Finance*, V.14-#3, pp. 237-258.

Ethier, Wilfred and James Markusen (1996). "Multinational Firms, Technology Diffusion and Trade". *Journal of International Economics*; V.41-#1/2, pp. 1-28.

Falk, Martin and Bertrand Koebel (2002). "Outsourcing, Imports and Labour Demand". *Scandinavian Journal of Economics*; V.104-#4, pp. 567-586.

Feenstra, Robert (1998). "Integration of Trade and Disintegration of Production in the Global Economy". *Journal of Economic Perspectives*; V.12-#4, pp. 31-50.

Feenstra, Robert and Gordon Hanson (1996). "Globalization, Outsourcing, and Wage Inequality". *American Economic Review*; V.86-#2, pp. 240-245.

Feenstra, Robert and Gordon Hanson (1997). "Foreign Direct Investment and Relative Wages: Evidence from Mexico's Maquiladoras". *Journal of International Economics*; V.42-#3/4, pp. 371-393.

Feenstra, Robert and Gordon Hanson (1999). "The Impact of Outsourcing and High Technology Capital on Wages: Estimates for the US, 1979-1990". *Quarterly Journal of Economics*; V.114-#3, pp. 907-940.

Feenstra, Robert, Gordon Hanson, and Songhua Lin (2004). "The Value of Information in International Trade: The Gains to Outsourcing through Hong Kong". *Advances in Economics and*

Policy; V.4-#1, pp. 1-35.

Feenstra, Robert, Gordon Hanson, and Deborah Swenson (2000). "Offshore Assembly from the United States: Production Characteristics of the 9802 Program". in R. Feenstra, ed. *The Impact of International Trade on Wages*. Chicago: University of Chicago Press/NBER, pp. 85-122.

Francois, Joseph and Douglas Nelson (2000). "Globalisation, Specialization, and the Wages of Unskilled Labor: Victims of Progress?". *CEPR Working Paper*; #DP2527.

Freeman, Richard (1998). "War of the Models: Which Labour Market Institutions for the 21st Century". *Labour Economics*; V.5-#1, pp. 1-24.

Gaston, Noel and Douglas Nelson (2004). "Structural Change and the Labor Market Effects of Globalization". *Review of International Economics*; V.12-#5, pp. 769-792.

Gereffi, Gary (1996). "Commodity Chains and Regional Divisions of Labour in East Asia". *Journal of Asian Business*; V.12-#1, pp. 75-112.

Gereffi, Gary (1999). "International Trade and Industrial Upgrading in the Apparel Commodity Chain". *Journal of International Economics*; V.48-#1, pp.37-70.

Gereffi, Gary and Miguel Korzeniewicz (1990). "Commodity Chains and Footwear Exports in the Semiperiphery". In W.G. Martin, ed. *Semiperipheral States in the World Economy*. Wesport: Greenwood Press, pp. 45-68.

Gereffi, Gary and Miguel Korzeniewicz, eds. (1994). *Commodity Chains and Global Capitalism*. Westport: Praeger.

Girma, Sourafel and Holger Görg (2004). "Outsourcing, Foreign Ownership, and Productivity: Evidence from UK Establishment-level Data". *Review of International Economics*; V.12-#5, pp. 817-832.

Glass, Amy (2004). "Outsourcing under Imperfect Protection of Intellectual Property". *Review of International Economics*; V.12-#?, pp. 867-884.

Glass, Amy and Kamal Saggi (1999). "FDI Policies under Shared Factor Markets". *Journal of International Economics*; V.49-#2, pp. 309-332.

Glass, Amy and Kamal Saggi (2001). "Innovation Incentives and Wage Effects of International Outsourcing". *European Economic Review*; V.45-#?, pp. 67-86.

Glass, Amy and Kamal Saggi (2002). "Licensing versus Direct Investment: Implications for Economic Growth", *Journal of International Economics*; V.56-#?, pp. 131-153.

Görg, Holger (2000). "Fragmentation and Trade: US Inward Processing Trade in the EU". *Weltwirtschaftliches Archiv*; V.136-#3, pp. 403-421.

Görg, Holger and Aoife Hanley (2005). "Labor Demand Effects of International Outsourcing: Evidence From Plan-level Data". *International Review of Economics and Finance*, V.14-#3, pp. 365-376.

Graziani, Giovanni (2001). "International Subcontracting in the Textile and Clothing Industry". in S.W. Arndt and H. Kierzkowski, eds., *Fragmentation: New Production Patterns in the World Economy*. Oxford: OUP, pp. 209-230.

Greenaway, David, Peter Lloyd, and Chris Milner (2001). "New Concepts and Measures of the Globalisation of Production". *Economics Letters*; V.73-#1, pp. 57-63.

Greenaway, David and Douglas Nelson (2004). "Trade and Migration Policy in Endogenous Policy Models: What Works, What Doesn't, and Why". Ms: Leverhulme Center for Research on Globalisation and Economic Policy.

Grieben, Wolf-Heimo (2004). "Schumpeterian Growth, North-South Trade and Wage Rigidity". *Contributions to Macroeconomics*; V.4-#1, pp. 1-44.

Grossman, Gene and Elhanan Helpman (1991). *Innovation and Growth in the Global Economy*. Cambridge: MIT Press.

Grossman, Gene and Elhanan Helpman (2002). "Integration versus Outsourcing in Industry Equilibrium". *Quarterly Journal of Economics*; V.117-#1, pp. 85-120.

Grossman, Gene and Elhanan Helpman (2003). "Outsourcing versus FDI in Industry Equilibrium". *Journal of The European Economic Association*; V.1-#2/3, pp. 317-327.

Grossman, Gene and Elhanan Helpman (2004). "Managerial Incentives and the International Organization of Production". *Journal of International Economics*; V.63-#2, pp. 237-262.

Grossman, Gene and Elhanan Helpman (2005). "Outsourcing in a Global Economy". *Review of Economic Studies*; V.72-#1, pp. 135-159.

Grossman, Gene, Elhanan Helpman, and Adam Szeidl (2005). "Complementarities between Outsourcing and Foreign Sourcing". *American Economic Review*; V.95-#2, forth.

Grunwald, Joseph and Kenneth Flamm (1985). *The Global Factory: Foreign Assembly in International Trade*. Washington, DC: Brookings.

Hackett, Steven and Krishna Srinivasan (1998). "Do Supplier Switching Costs Differ Across

Japanese and US Multinational Firms?". *Japan And The World Economy*; V.10-#1, pp. 13-42.

Hall, H. Keith and Douglas Nelson (2004). "The Peculiar Political Economy of NAFTA: Complexity, Uncertainty and Footloose Policy Preferences". In Arvind Panagariya and Devashish Mitra, eds. *The Political Economy of Trade, Aid and Foreign Investment Policies: Essays in Honor of Ed Tower*. Amsterdam: Elsevier, pp. 91-109.

Hanson, Gordon (1996). Localization Economies, Vertical Organization, and Trade". *American Economic Review*; V.86-#5, pp. 1266-1278.

Harris, Richard (1992). "New Theories of International Trade and the Pattern of Global Specialisation". In G. van Liemt, ed. *Industry On the Move: Causes and Consequences of International Relocation in the Manufacturing Industry*. Geneva: International Labour Office, pp. 25-50.

Harris, Richard (1995). "Trade and Communication Costs". *Canadian Journal of Economics*; V.28-#0 (Sp. Iss.) Pp. S46-75.

Harris, Richard (2001). "A Communication Based Model of Global Production Fragmentation". In S. Arndt and H. Kierzkowski, eds. *Fragmentation: New Production Patterns in the World Economy*. New York: OUP, pp. 52-75.

Hochschild, Jennifer (1981). What's Fair: American Beliefs about Distributive Justice. Cambridge: Harvard University Press.

Hopkins, Terence and Immanuel Wallerstein (1986). "Commodity Chains in the World Economy Prior to 1800". *Review*; V.10-#1, pp. 157-170.

Horstmann, Ignatius and James Markusen (1987). "Licensing versus Direct Investment: A Model of Internalization by the Multinational Firm". *Canadian Journal of Economics*; V.20-#3, pp. 464-481.

Horstmann, Ignatius and James Markusen (1996). "Exploring New Markets: Direct Investment, Contractual Relationships, and the Multinational Enterprise". *International Economic Review*; V.37-#1, pp. 1-19.

Hummels, David, Jun Ishii, and Kei-Mu Yi (2001). "The Nature and Growth of Vertical Specialization in World Trade". *Journal of International Economics*; V.54-#1, pp. 75-96.

Hummels, David, Dana Rapoport, and Kei-Mu Yi (1998). "Vertical Specialization and the Changing Nature of World Trade". *FRBNY Economic Policy Review*; June, pp. 79-99.

Jones, Ronald (2000). "Private Interests and Government Policy in a Global World". European

Journal of Political Economy; V.16-#2, pp. 243-256.

Jones, Ronald (2000). Globalization and the Theory of Input Trade. Cambridge: MIT Press.

Jones, Ronald and Henryk Kierzkowski (1990). "The Role of Services Production and International Trade: A Theoretical Framework". in R. Jones and A. Krueger, eds. *The Political Economy of International Trade*. Oxford: Basil Blackwell; pp. 31-48.

Jones, Ronald and Henryk Kierzkowski (1998). "Globalization and the Consequences of International Fragmentation". In R. Dornbusch, G. Calvo, and M. Obstfeld, eds. *Money, Capital Mobility and Trade: Essays in Honor of Robert Mundell*. Cambridge: MIT Press, pp.

Jones, Ronald and Henryk Kierzkowski (2000). "Horizontal Aspects of Vertical Fragmentation". Centre for International Economic Studies (Adelaide) Policy Discussion Paper, #0027.

Jones, Ronald and Henryk Kierzkowski (2001). "A Framework for Fragmentation". In S. Arndt and H. Kierzkowski, eds. *Fragmentation: New Production Patterns in the World Economy*. New York: OUP, pp. 17-34.

Jones, Ronald, Henryk Kierzkowski, and Chen Lurong (2005). "What Does Evidence Tell Us About Fragmentation and Outsourcing?". *International Review of Economics and Finance*, V.14-#3, pp. 305-316.

Jones, Ronald and Sugata Marjit (1992). "International Trade and Endogenous Production Structures". In W. Neufeind and R. Riezman, eds. *Economic Theory and International Trade*. Berlin: Springer-Verlag, pp. 173-197.

Kaminsky, Bartlomiej and Francis Ng (2005). "Production Disintegration and Integration of Central Europe into Global Markets". *International Review of Economics and Finance*, V.14-#3, pp. 377-390.

Kaplinsky, Raphael (2000). "Globalisation and Unequalisation: What Can be Learned from Value Chain Analysis". *Journal of Development Studies*; V.37-#2, pp. 117-146.

Kierzkowski, Henryk (2001). "Joining the Global Economy: Experience and Prospects of Transition Economies". in S.W. Arndt and H. Kierzkowski, eds., *Fragmentation: New Production Patterns in the World Economy*. Oxford: OUP, pp. 231-253.

Kimura, Fukunari and Mitsuyo Ando (2005). "Two-Dimensional Fragmentation in East Asia: Conceptual Framework and Empirics". *International Review of Economics and Finance*, V.14-#3, pp. 317-348.

Klein, Michael, Scott Schuh, and Robert Triest (2003). Job Creation, Job Destruction, and

International Competition. Kalamazoo: W.E. Upjohn Institute for Employment Research.

Kletzer, Lori (2002). *Imports, Exports and Jobs: What Does Trade Mean for Employment and Job Loss?* Kalamazoo: W.E. Upjohn Institute for Employment Research.

Kohler, Wilhelm (2000). "International Fragmentation A Policy Perspective". in S. Arndt, H. Handler & D. Salvatore, eds. *Eastern Enlargement: the Sooner, the Better?*, Vienna: Austrian Federal Ministry for Economic Affairs and Labor, pp. 227-247.

Kohler, Wilhelm (2001). "A Specific-Factors View on Outsourcing". *North American Journal of Economics and Finance*; V.12-#1, pp. 31-53.

Kohler, Wilhelm (2003). "The Distributional Effects of International Fragmentation". *German Economic Review*; V.4-#1, pp. 89-120.

Kohler, Wilhelm (2004). "Aspects of International Fragmentation". *Review of International Economics*; V.12-#5, pp. 793-816.

Kohler, Wilhelm (2004). "International Outsourcing and Factor Prices with Multistage Production". *Economic Journal*; V.114-#494, pp. C160-C185.

Korzeniewicz, Miguel (1992). "Global Commodity Networks and the Leather Footwear Industry: Emerging Forms of Economic Organization in the Post-Industrial World". *Sociological Perspectives*; V.35-#2, pp. 313-327.

Kozul-Wright, Richard and Robert Rowthorn, eds. (1998). *Transnational corporations and the global economy*. New York: St. Martin's Press; for the United Nations University/World Institute for Development Economics Research.

Lingens, Jorg (2003). "The Impact of a Unionised Labour Market in a Schumpeterian Growth Model". *Labour Economics*; V.10-#1, pp. 91-104.

Long, Ngo Van (2005). "Outsourcing and Technology Spillovers". *International Review of Economics and Finance*, V.14-#3, pp. 297-304.

Magee, Christopher (2001). "Administered Protection for Workers: An Analysis of the Trade Adjustment Assistance Program". *Journal of International Economics*; V.53-#1, pp. 105-125.

Markusen, James (2001). "Contracts, Intellectual Property Rights, and Multinational Investment in Developing Countries". *Journal of International Economics*; V.53-#1, pp. 189-204.

McLaren, John (2000). "Globalization and Vertical Structure". *American Economic Review*; V.90-#5, pp. 1239-1254.

McCloskey, Herbert and John Zaller (1984). *The American Ethos: Public Attitudes Toward Capitalism and Democracy*. Cambridge: Harvard University Press.

Melvin, James (1990). "Time and Space in Economic Analysis". *Candian Journal of Economics*; V.23-#4, pp. 725-747.

Miller, Tracy C. (2001). "Impact of Globalization On U.S. Wage Inequality: Implications for Policy". *North American Journal of Economics And Finance*; V.12-#3, pp. 219-242.

Mutz, Diana and Jeffery Mondak (1997). "Dimensions of Sociotropic Behavior: Group-Based Judgements of Fairness and Well-Being". *American Journal of Political Science*; V.41-#1, pp. 284-308.

Organization for Economic Cooperation and Development (1997). *Employment Outlook*. Paris: OECD.

Perry, Charles (1997). "Outsourcing and Union Power". *Journal of Labor Research*; V.18-#4, pp. 521-534

Porter, Michael (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Fee Press.

Porter, Michael (1990). The Competitive Advantage of Nations. New York: Free Press.

Quinlan, Michael (1998). "Labour Market Restructuring in Industrialised Societies: An Overview". *Economic and Labour Relations Review*; V.9-#1, pp. 1-30.

Raikes, Philip, Michael Jensen, and Stefano Ponte (2000). "Global Commodity Chain Analysis and the French *filière* Approach". *Economy and Society*; V.29-#3, pp. 390-417.

Riker, David and S. Lael Brainard (1997). "U.S. Multinationals and Competition from Low Wage Countries". *NBER Working Paper*, #5959.

Ruane, Frances and Holger Görg (2001). "Globalization and Fragmentation: Evidence for the Electronics Industry in Ireland". in S.W. Arndt and H. Kierzkowski, eds., *Fragmentation: New Production Patterns in the World Economy*. Oxford: OUP, pp. 144-164.

Samuelson, Paul (2001). "A Ricardo-Sraffa Paradigm Comparing Gains from Trade in Inputs and Finished Goods". *Journal of Economic Literature*; V.39-#4, pp. 1204-1214.

Samuelson, Paul (2004). "Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization". *Journal of Economic Perspectives*; V.18-#3, pp. 135-146.

Schaik, Anton and Henri de Groot (2002). "Macroeconomic Consequences of Downsizing". *Economic Modelling*; V.19-#3, pp. 331-352.

Schlozman, Kay and Sidney Verba (1979). *Injury to Insult: Unemployment, Class and Political Response*. Cambridge: Harvard University Press.

Segerstrom, Paul, T.C.A. Anant and Elias Dinopoulos (1990). "A Schumpeterian Model of the Product Life Cycle". *American Economic Review*; V.80-#5, pp. 1077-1091.

Sener, Fuat (2001). "Schumpeterian Unemployment, Trade and Wages". *Journal of International Economics*; V.54-#1, pp. 119-148.

Siegel, Donald and Zvi Griliches (1992). "Purchased Services, Outsourcing, Computers, and Productivity in Manufacturing". In Z. Griliches, ed. *Output measurement in the service sectors*. Chicago: University of Chicago Press/NBER, pp. 429-458.

Skaksen, Jan Rose (2004). "International Outsourcing when Labour Markets are Unionized". *Canadian Journal of Economics*; V.37-#1, pp. 78-94.

Swenson, Deborah (2000). "Firm Outsourcing Decisions: Evidence from U.S. Foreign Trade Zones". *Economic Inquiry*; V.38-#2, pp. 175-189.

Swenson, Deborah (2004). "Foreign Investment and the Mediation of Trade Flows". *Review of International Economics*; V.12-#14, pp. 609-629.

Venables, Anthony (1999). "Fragmentation and Multinational Production". *European Economic Review*; V.43-#4/6, pp. 935-945.

Verba, Sidney and Gary Orren (1985). *Equality in America: The View from the Top*. Cambridge: Harvard University Press.

Wan, Henry (2005). "Fragmented Trade and Manufacturing Services–Examples for A Non-Convex General Equilibrium". *International Review of Economics and Finance*, V.14-#3, pp. 273-295.

Whitley, Richard (1996). "Business Systems and Global Commodity Chains: Competing or Complementary Forms of Economic Organization". *Competition & Change*; V.1-#?, pp. 411-425.

Yeats, Alexander (2001). "Just How Big is Global Production Sharing?". in S.W. Arndt and H. Kierzkowski, eds., *Fragmentation: New Production Patterns in the World Economy*. Oxford: OUP, pp. 108-143.

Yi, Kei-Mu (2003). "Can Vertical Specialization Explain the Growth of World Trade". *Journal of Political Economy*; V.111-#1, pp. 52-102.

Zhao, Laixun (2001). "Unionization, Vertical Markets, and Outsourcing". *Journal of International Economics*; V.55-#1, pp. 187-202.