

Globalization and Working Time:
Working Hours and Flexibility in an Open Economy

Brian Burgoon
Dept. of Political Science
University of Amsterdam
OZ Achterburgwal 237
1012 DL Amsterdam
Tel: +31 20 525 3189
Fax: +31 20 525 20 86
B.M.Burgoon@uva.nl

Damian Raess
Labor and Worklife Program
Harvard University
125 Mt Auburn St.
Cambridge, MA 02138
Tel: +1 617 384 5479
Fax: +1 617 496 7359
draess@law.harvard.edu

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Abstract:

This paper challenges popular wisdom that economic globalization uniformly increases working time and flexibility in industrialized countries by analyzing the work-place politics of such working time. Exposure to international investment and trade can have off-setting effects for work-place bargaining over standard hours and work-time flexibility, and we expect globalization to more strongly spur the latter than the former given stronger employer support for and weaker employee opposition to flexible time management in open economies. We also expect, however, that works councils and union-led collective bargaining mediate which of globalization's effects dominates the shaping of work-time. Our empirical analysis of detailed data of a large and representative sample of enterprises in Germany supports two major findings consistent with such expectations. First, total foreign direct investment (FDI), trade, and export orientation (share of foreign sales) tend to have either no or weakly negative effects on standard working hours, but to yield higher incidence of temporary and fixed-contract work. Second, works councils and collective bargaining mediate these effects in ways that differ between standard hours and work-time flexibility. With respect to standard hours, globalization measures tend to trigger more standard hours among enterprises without works councils or that do not follow collective bargaining agreements, but *fewer* hours among firms with works councils or collective agreements. With respect to flexibility, however, globalization tends to modestly spur incidence of temporary- or fixed-term contracts and working-time accounts, and to do so more strongly where works councils or collective bargaining are present than when they are not. These results suggest how economic openness can have uneven consequences for working time, and that firm-level institutional context can channel those consequences, highlighting political agency in responses to globalization.

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“Globalization closes in on Swedes’ treasured vacation,” reports a recent headline from the *International Herald Tribune*.¹ “Eastern Europe’s low costs erode Germans’ 35-hour workweek,” chimes another headline, from the *Christian Science Monitor*.² Lending color to such headlines, *New York Times* editorialist Thomas Friedman quipped that “...French voters are trying to preserve a 35-hour work week in a world where Indian engineers are ready to work a 35-hour day. Good luck.”³ These popular-press missives remind us that working time is a much-talked about aspect of working life, not least because pressures to work more hours, more weeks, more years, more flexibly are clear trends throughout the industrialized world – painfully so for more “social” European economies. They also remind us of the link, so commonly made in the popular press, between working-time developments and economic globalization. Whether they lament and resist, or celebrate and recommend, such developments, many commentators and policymakers link any increases in hours and work-time flexibility to the competitive exigencies of globalized trade and production. The globally-integrated economy, in a nut-shell, means more sweat.

Academic scholarship on working time and on globalization provides surprisingly little guidance as to whether such tales capture important truths or are just that – tales of exaggerated and misdirected concern. There are studies where globalization measures appear to increase working time and flexibility, but the findings are focused on particular industries or occupations.⁴ Other studies draw the opposite, more “globaphilic,” conclusion, that globalization increases firm profitability that gets passed-on to workers in wages and benefits,

¹ Ivar Ekman, “Globalization closes in on Swedes’ treasured vacation,” *International Herald Tribune*, August 20, 2007.

² Isabelle de Pommereau, “E. Europe’s low costs erode Germans’ 35-hour workweek,” *Christian Science Monitor*, August 24, 2004.

³ Thomas Friedman, “A Race to the Top,” *New York Times*, June 3, 2005.

⁴ Mary Blair-Loy and Jerry A. Jacobs, “Globalization, Work Hours, and the Care Deficit among Stockbrokers,” *Gender and Society* 17, no. 2 (2003): 230-49; Damian Raess and Brian Burgoon, “The Dogs that Sometimes Bark: Globalization and Works Council Bargaining in Germany,” *European Journal of Industrial Relations* 12, no. 3 (2006): 287-309.

sooner decreasing than increasing working hours.⁵ Far more common is the view that globalization is modest enough, or has modest or off-setting or place-specific enough effects for working time, that it can be ignored as an important determinant of working-time arrangements. Most studies of working time, indeed, have given little attention to global economic developments, focusing instead on individual or industry attributes or national-level economic or political changes.⁶ And the enormous globalization literature has focused on many consequences for industrial relations and political economy – from wage bargaining to union strength – but little on working time.⁷

Although the literatures on globalization and on industrial relations provide reasons to expect globalization to have off-setting consequences for working time, no studies to our knowledge try to understand why one or another of such consequences might dominate or to identify third conditions mediating which dominates. More fundamentally, we have very little empirical work on globalization and working time. These exceptions tend to focus either on how measures of globalization affect national averages of hours worked⁸ or particular occupations⁹ – saying little about other aspects of working time, such as temporary or fixed-term work, or about work-time patterns at the establishment level where crucial work-time and flexibility standards are set. The only exception to our knowledge focuses on a small

⁵ Robert J. Flanagan, *Globalization and labor conditions: Working conditions and worker rights in a global economy* (New York: Oxford University Press, 2006).

⁶ See, for example, Gerhard Bosch and Steffen Lehndorff, “Working-time reduction and employment: experiences in Europe and economic policy recommendations,” *Cambridge Journal of Economics* 25, no. 2 (2001): 209-43; Edward C. Prescott, “Why Do Americans Work So Much More Than Europeans?” *Federal Reserve Bank of Minneapolis Quarterly Review* 28, no. 1 (2004): 2-13; Brian Burgoon and Phineas Baxandall, “Three Worlds of Working Time: The Partisan and Welfare Politics of Work Hours in Industrialized Countries,” *Politics and Society* 32, no. 4 (2004): 439-73; and Alberto Alesina, Edward Glaeser and Bruce Sacerdote, “Work and Leisure in the U.S. and Europe: Why So Different?” (Cambridge, MA: National Bureau of Economic Research, NBER Working Paper 11278, 2005).

⁷ See, for example, Kathleen Thelen and Ikuo Kume, “The Effects of Globalization on Labour Revisited: Lessons from Germany and Japan,” *Politics and Society* 27, no. 4 (1999): 477-505; Sven Oskarsson, “Class Struggle in the Wake of Globalisation. Union Organisation and Economic Integration,” in *Europe – One Labour Market?* ed. Lars Magnusson and Jan Ottosson (Brussels: Peter Lang), 193-238; Jan Kees Looise and Michiel Drucker, “Dutch Works Councils in Times of Transition: The Effects of Changes in Society, Organizations and Work on the Position of Works Councils,” *Economic and Industrial Democracy* 24, no. 3 (2003): 379-409; and Antje Kurdelbusch, “Multinationals and the Rise of Variable Pay in Germany,” *European Journal of Industrial Relations* 8, no. 3 (2002): 325-49.

⁸ Flanagan, *Globalization and labor conditions*.

⁹ Blair-Loy and Jacobs, “Globalization, Work Hours, and the Care Deficit among Stockbrokers.”

sample of enterprises, hindering economy-wide conclusions about how globalization rather than other conditions affect working time.¹⁰

In the hope of redressing such shortcomings, this study develops and tests arguments about how globalization affects work-place working time, sensitive to possible off-setting effects for various work-time arrangements across industries and services. Exposure to trade and foreign direct investment unleash off-setting pressures to increase and to decrease standard weekly hours and work-time flexibility – the incidence of, for instance, temporary and fixed-term work. Hence, as section one explains, we offer no general expectations about whether globalization will lower or increase standard hours or work-time flexibility.

We do, however, generate two broad expectations in light of such off-setting effects. First, preferences of workers and their representatives and of employers likely vary across standard hours and flexibility, such that globalization's net pressures to increase work-time flexibility ought to be stronger than is the case for standard hours. Second, we expect globalization's implications for both standard hours and flexibility to be mediated by two institutions of worker representation in bargaining over working time arrangements: (1) whether an enterprise has a works council, worker representation at the enterprise-level (often formally non-union) and with authority to negotiate on non-wage work-place conditions; and (2) whether an enterprise follows branch- or industry-level collective bargaining agreements, where unions negotiate standards for hours and related working conditions. We hypothesize that works councils and collective agreements tend to improve working-time conditions for core workers, though may also speed-up and institutionalize work-time flexibility as a palatable concession to employers in exchange for employment protections or lower standard hours of core workers. These tendencies should also mediate the influence of globalization, such that presence of works councils or of collective bargaining agreements will tend to make

¹⁰ Raess and Burgoon, "The Dogs that Sometimes Bark."

globalization more strongly *decrease* (or more modestly increase) standard hours, but to make globalization more strongly *increase* (or more modestly decrease) work-time flexibility.

To empirically explore these arguments, Sections Two and Three analyze a broad survey of German enterprises that allows accurately judging how economic globalization affects standard hours and work-time flexibility at a level where both are most directly set. The analysis reveals two broad patterns in line with expectations. First, globalization measures at the establishment or branch level – including total foreign direct investment (FDI), trade openness, and export orientation – tend to have weakly negative effects for total standard hours, but to yield higher incidence of temporary and fixed-contract work, and of “balancing-time accounts” that allow flexible work. Second, having works councils and following collective agreements strongly mediate these effects in ways that differ between standard hours and flexibility. With respect to weekly hours, globalization tends to trigger more standard hours among establishments without works councils or not following collective agreements, but *fewer* hours among those with works councils or covered by collective agreements. However, with respect to flexibility – particularly, temporary- or fixed-term contracts and balancing-time accounts – globalization tends to have no or positive effects on flexibility where works councils and collective agreements are absent, and to have significantly *more positive* effects where such institutions are present. These results suggest that, contrary to popular wisdom, economic openness has very uneven consequences for working time, and that institutions of worker representation strongly channel those consequences in ways that highlight key sites of agency in responses to globalization.

1. Working Time, Globalization, and Worker Representation

Working-time conditions for workers are central to the efficiency and equity of market economies. They involve how much and under what conditions time is spent on the work floor as opposed to on leisure or other pursuits. Most obviously, the issue is how much workers work in a day, a week, or a year – reflecting shorter or longer time off, from coffee breaks to vacation weeks. But also important are time-related *terms* of work, most obviously overtime, night- or weekend work, or flexible working-time accounts where hours can vary above or below standard hours without extra compensation. Other time-related terms involve the nature of working contracts, from full-time work with standardized hours, to various non-standard contracts, such as temporary or fixed-term contract work.

Such working-time conditions are set in part by decentralized and unregulated work decisions among employees and employers, more or less negotiated (from “*fait accompli*” employer standards to individually-negotiated contracts). But working-time conditions are also set by settlements negotiated at various levels of industrial organization. These entail international agreements (e.g. the EU work time directive) among national representatives and supra-nationally organized social actors (transnational union and employer federations); national work-hours legislation involving political parties, lobbies and national social actors (national unions and employer associations); industry-wide collective bargaining involving social actors; and firm- or enterprise-level negotiations by work-place representatives, such as works councils. The objects of such arrangements can be agreed-upon and actual hours-worked per-week or per-year, rules and practices on holidays, overtime, on temporary work, fixed-term contract work, part-time work, etc.

Working-time conditions are important to the life-chances and prospects for workers and to the competitive position of their employers – certainly as important, and sometimes as

politicized, as wage compensation. One symptom of how this is so is how vacation, weekend and leisure time tend to be significant contributors to subjective well-being and happiness.¹¹ Hence, regardless of how wages and other benefits hang together with or influence working-time patterns, the nature and origins of working-time arrangements are intrinsically important and have origins worth investigating.

Although employer and employee preferences clearly vary substantially over time, sector, occupation, lifestyle, and space, intuition and some scholarship reveals some general tendencies with respect to salience and direction of work-time preferences within and between such social actors. Employers tend to want the possibility of more hours per employee and certainly more flexibility in the setting of those hours.¹² Flexibility in setting hours may be particularly important to employers, concerned about being able to allocate personnel efficiently across highly variable monthly, seasonal, and yearly cycles of business, particularly where just-in-time production chains are present – all cutting against the grain of standardized full-time contracts with hours-limits and overtime premia.¹³ And there is evidence that employers in a number of countries are willing to swallow reductions in standard hours for full-time employees in exchange for more flexible distribution of such hours with respect to weekly, weekend and overtime work.¹⁴

¹¹ See Richard Layard, *Happiness: Lessons from a New Science* (London: Penguin Press, 2005); and Daniel Kahneman, Alan B. Krueger, David Schkade, Norbert Schwarz, and Arthur A. Stone, "Would You Be Happier If You Were Richer? A Focusing Illusion," *Science* 312 (30 June 2006): 1908-10.

¹² See Gerhard Bosch, "The dispute over the reduction of the working week in West Germany," *Cambridge Journal of Economics* 10, no. 3 (1986): 271-90; and "From 40 to 35 hours: Reduction and flexibilisation of the working week in the Federal Republic of Germany," *International Labour Review* 129, no. 5 (1990): 611-27; Karl Hinrichs, William Roche, and Carmen Sirianni, "From Standardization to Flexibility: Changes in the Political Economy of Working Time," in *Working Time in Transition: The Political Economy of Working Hours in Industrial Nations*, ed. Karl Hinrichs, William Roche and Carmen Sirianni (Philadelphia: Temple University Press, 1991); and Kea Tijdens, "Employees' and Employers' Preferences for Working Time Reduction and Working Time Differentiation. A Study of the 36-Hour Working Week in the Dutch Banking Sector," *Acta Sociologica* 46, no. 1 (2003): 69-82.

¹³ Hinrichs et al., "From Standardization to Flexibility"; and Bosch and Lehndorff, "Working-time reduction and employment."

¹⁴ Tiziano Treu, "Introduction," in *Current issues in labour relations: An international perspective*, ed. Alan Gladstone, Russell Lansbury, Jack Stieber, Tiziano Treu and Manfred Weiss (Berlin: De Gruyter, 1989), 149-60; Bosch and Lehndorff, "Working-time reduction and employment."

Among employees, preferences can be expected to vary substantially across kinds of workers and aspects of working time.¹⁵ In general, full-time employees tend to want lower hours at a given wage.¹⁶ But on measures of work-time flexibility, such as overtime and standard versus non-standard (e.g. temporary- or fixed-term) contracts, workers tend to be more divided, with many seeing benefits to flexibility.¹⁷ Still, surveys of attitudes and well-being of workers, including in a German setting, suggest that workers in general tend to prefer more standard and fixed working hours and work-time contracts – hence predictable and easier to combine with family and other responsibilities.¹⁸

Economic globalization can be expected to have off-setting effects for such working time conditions in industrialized market economies. These effects can be deduced from the broader literature on globalization and labor market conditions generally. On the one hand, increased openness to and flows of capital and goods can be expected to have implications that spell good news for working-time conditions of workers. The simplest possibility in this category is that globalization sparks product-market specialization on the basis of comparative

¹⁵ See Tijdens, “Employees’ and Employers’ Preferences for Working Time Reduction and Working Time Differentiation”; and Mia Väisänen and Jouko Nätti, “Working time preferences in dual-earning households,” *European Societies* 4, no. 3 (2002): 307-29.

¹⁶ Harald Bielenski, Gerhard Bosch and Alexandra Wagner, *Working time preferences in sixteen European countries* (Dublin: European Foundation for the Improvement of Living and Working Conditions, 2002); and Jouko Nätti, “Working-time Policy in Finland: Flexibilisation and Work-Sharing” (paper presented at the International Symposium on Working-Time conference, 4-6 December, 1995, Blankenberge, Belgium).

¹⁷ See for example, Arne L. Kalleberg, “Nonstandard Employment Relations: Part-time, Temporary and Contract Work,” *Annual Review of Sociology* 26 (2000): 341-65; and Moshe Krausz, “Effects of short- and long-term preference for temporary work upon psychological outcomes,” *International Journal of Manpower* 21, no. 8 (2000): 635-47.

¹⁸ See K.M. Beard and J.R. Edwards, “Employees at Risk: Contingent work and the psychological experience of contingent workers,” in *Trends in Organizational Behavior*, ed. C.L. Cooper and D.M. Rousseau (Chichester, UK: Wiley, 1995), 109-26; Alice De Wolff, *Breaking the Myth of Flexible Work: Contingent Work in Toronto* (Toronto: Toronto Organizing for Fair Employment – A Study Conducted by the Contingent Workers Project, 2000); and Matthias Eberling, Volker Hielscher, Eckart Hildebrandt, and Kerstin Jürgens, *Prekäre Balancen. Flexible Arbeitszeiten zwischen betrieblicher Regulierung und individuellen Ansprüchen* (Berlin: Edition Sigma, 2004). Compared to workers with standard contracts, employees with flexible contracts are at a disadvantage in terms of wages and unemployment risks; see Vanessa Gash and Frances McGinnity, “Fixed-term contracts—the new European inequality? Comparing men and women in West Germany and France,” *Socio-Economic Review* 5, no. 3 (2007): 467-96. And while working-time accounts might increase workers’ sovereignty over weekly distribution of hours, individual and collective consequences of having such accounts might offset such gains: working-time accounts decrease the likelihood that employees will work overtime hours at premium pay, and decrease works councils’ ability to use co-determination over overtime as a bargaining-counter over other issues; see Christa Herrmann, Markus Promberger, Susanne Singer and Rainer Trinczek, *Forcierte Arbeitszeitflexibilisierung. Die 35-Stunden-Woche in der betrieblichen und gewerkschaftlichen Praxis* (Berlin: Sigma, 1999).

advantage that generate productivity and profitability benefits for firms and economies generally – benefits that in turn get passed-on in part to employees in the form of more generous wages and benefits, including fewer and more predictable working hours for a given wage.¹⁹ Such tendencies might be particularly clear where globalization patterns such as FDI and outsourcing unleash as much or more labor complementarity than substitution, implying only modest distributional wage and employment effects.²⁰ But such beneficial work-time tendencies might emerge even if lower hours lend comparative *disadvantage*, and even if globalization might also yield significant job losses, deindustrialization and hollowing-out – so long as onshore workers remain to share the fruits of onshore production rendered more profitable by globalization’s process of specialization. In any event, it is also possible that precisely lower such hours are a basis for (or go-along with) comparative advantage in capital-rich knowledge economies in the industrialized North – in which case globalization might be all the more beneficial for working-time of workers. Finally, workers facing employment and wage risks due to globalization – contrary to the above – might seek more generous working-hour arrangements as internal *compensation* for such increased risks.

On the other hand, globalization might well unleash forces yielding more and flexibilized working time. To the extent that FDI and trade are driven by differences in factor endowments – such as multi-nationalizing the value-added chain (“vertical” FDI), involving more substitution than complementarity of global production – one might expect, following Stolper-Samuelson reasoning, that the distributional consequences could be sharp, shifting

¹⁹ Flanagan, *Globalization and labor conditions*.

²⁰ See Gordon H. Hanson, Raymond J. Mataloni, and Matthew J. Slaughter, “Expansion Strategies of U.S. Multinational Firms,” in *Brookings Trade Forum 2001*, ed. Dani Rodrik and Susan Collins, (Washington D.C.: The Brookings Institution, 2001), 245-94. FDI and outsourcing, for instance, might involve tailoring to local markets (“horizontal” investment), resource extraction, tariff-jumping or other conditions – where distributional consequences are more modest than a Stolper-Samuelson framework expects; see James R. Markusen, “The Boundaries of Multinational Enterprises and the Theory of International Trade,” *Journal of Economic Perspectives* 9, no. 2 (1995): 169-89; John. H. Dunning, *International Production and the Multinational Enterprise* (London: Allen and Unwin, 1981); and Hanson et al., “Expansion Strategies of U.S. Multinational Firms.”

levels of labor demand that entail up-skilling in OECD economies.²¹ This might lead to some room for flexibilizing for all workers, and to some sweating of less-skilled workers in the form of more working hours, overtime and more non-standard work-time contracts. Second, both inter-industry and intra-industry trade or investment may also increase elasticity of labor demand – by making it easier for capital to shift foreign for domestic employment in the labor-capital production mix – where threat-of-exit may significantly increase wage or employment volatility and worker insecurity, and increase investor and employer bargaining power on non-wage working conditions and policies.²² All such changes might strengthen the hand of employers to call for flexibility and longer hours for a given wage. Third, economic globalization – including both intra- and inter-industry trade and vertical and horizontal cross-border investment – can reduce product development and delivery times and expectations, including just-in-time practices, all of which can be expected to increase employer interests in particularly work-time flexibility to efficiently allocate human resources.

Finally, regardless of actual, material effects of economic globalization, workers may *perceive* globalization to make them more vulnerable, employers may perceive globalization to require more flexibility, and due to globalization both might more readily look at and be aware of work-time conditions abroad. Such possibilities constitute another, ideational link between globalization and increases in work-hours and work-time flexibility, at least in countries with lower hours than the OECD-average.

Which of these plausible implications of economic globalization dominates the work-time landscape as a generalization across time and space is difficult to predict *ex ante*. We see this, therefore, as largely an empirical question. But the above reasoning does suggest that employers are more likely to respond to globalization with demands for work-time flexibility

²¹ Robert C. Feenstra and Gordon H. Hanson, “Globalization, outsourcing and wage inequality,” *American Economic Review* 86, no. 2 (1996): 240-45.

²² See Dani Rodrik, *Has Globalization Gone Too Far?* (Washington, D.C.: Institute for International Economics, 1997); and Kenneth F. Scheve and Matthew J. Slaughter “Economic Insecurity and the Globalization of Production,” *American Journal of Political Science* 48 no. 4 (2004): 662-74.

than for increased standard hours, and that workers can be expected to be more split on issues of flexibility than on issues of standard work-hours for full-time employees. This motivates our first hypothesis:

Hypothesis One:

Economic globalization should more negatively or less positively affect standard weekly hours than work-time flexibility (i.e. incidence of temporary, fixed-term, and balancing-time accounts).

1.1. The Mediating Effects of Worker Representation

One can also expect that the implications of globalization for work time vary over time and space, depending on the economic and political-institutional features of firms and countries in which work-hours are set. Indeed, scholarship on how globalization affects national industrial relations and political economy generally not only acknowledges that globalization might have off-setting effects, but identifies particular national institutional conditions that might mediate those effects.²³ In the spirit of that literature, our own expectation is that the off-setting effects of globalization for working time discussed above are likely mediated by work-place institutions. In industrialized countries, the institutions that most likely channel how globalization might affect working-time arrangements are collective bargaining agreements and works councils.

Collective bargaining agreements are negotiated by unions and employer representatives at various levels of industrial organization – from company to industry, from narrow region to nation – and address a range of employment, wage and working conditions, including hours and work-time standards. Coverage of collective bargaining agreements is

²³ See for example, Geoffrey Garrett, *Partisan Politics and the Global Economy* (Cambridge: Cambridge University Press, 1998); Duane Swank, *Global Capital, Political Institutions, and Policy Change in Developed Welfare States* (Cambridge: Cambridge University Press, 2002); Lyle Scruggs and Peter Lange, "Where Have All the Members Gone? Globalization, Institutions, and Union Density," *The Journal of Politics* 64, no. 1 (2002): 126-53; Cathie Jo Martin and Duane Swank, "Does the Organization of Capital Matter? Employers and Active Labor Market Policy at the National and Firm Levels," *American Political Science Review* 98, no. 4 (2004): 593-611; and Oskarsson, "Class Struggle in the Wake of Globalisation."

often much broader than unionized enterprises or employees, reflecting convention and (in some countries) legal extension throughout a region or industry. For this reason, whether or not an enterprise follows a collective agreement is arguably a more important institutional characteristic regulating working time than whether or not an enterprise is unionized. The coverage of such agreements, in any event, varies substantially across time and space (countries, industries and enterprises), reflecting piecemeal bargaining, convention and laws mandating extension. Across OECD countries, for instance, collective-bargaining coverage of industry, company or another level varied in the mid-1990s from roughly 18 percent in the United States to 98 percent in Austria,²⁴ where many countries have recently experienced declines in coverage (e.g. Germany) while others experience increases (e.g. Denmark). Within Germany in 2001, industry-level collective bargaining coverage was 45 percent of enterprises (63 percent of employees) in West Germany and 22 percent of enterprises (46 percent of employees) in East Germany.²⁵ The difference between coverage of enterprises and coverage of employees reflects the fact that larger firms are, in Germany as in most countries, more likely to follow collective-bargaining agreements than are smaller firms.

Works councils provide enterprise-level worker representation and are well-established and formally protected by statute in most European countries, but also exist in less formal or protected forms in other OECD countries, including the United Kingdom, Australia, New Zealand and the United States. In Germany, where works councils constitute one layer of its “dual system” of industrial relations, all firms with five or more employees must be open to setting-up a works council. In Germany and elsewhere, works councils are separate from labor unions, though many have close ties with, and often have a membership drawn

²⁴ Franz Traxler, “Collective Bargaining in the OECD: Developments, Preconditions and Effects,” *European Journal of Industrial Relations* 4, no. 2 (1998): 207-26.

²⁵ See Susanne Kohaut and Claus Schnabel, “Zur Erosion des Flächentarifvertrags: Ausmaß, Einflussfaktoren und Gegenmaßnahmen,” *Industrielle Beziehungen* 10, no. 2 (2003): 193-219. In addition to such industry-level coverage, 2.7 percent of West German enterprises and 4.3 percent of East German enterprises are covered by company-level collective agreements.

from the ranks of, the union movement. And for this or other reasons, enterprises that follow collective bargaining agreements often (though definitely not always) also have works councils. Works councils directly negotiate, along-side collective agreements, a range of non-wage conditions, including overtime and non-standard employment contracting. Where works councils operate in the presence of collective agreements, they engage employers in negotiating possible opt-outs or opening-clause actions on working time issues.²⁶ In 2003, 16.5 percent of German firms with five or more employees had works councils, though 53 percent of German employees are covered by works councils – reflecting how works-council representation, like the following of collective agreements, is more common in large firms.²⁷

Two intuitions motivate the expectation that collective bargaining and works councils might mediate how globalization affects working time. First, both collective bargaining and works councils generally increase bargaining capacities of workers in negotiations directly relevant to the setting of working-time standards at the industry and firm level (via collective bargaining agreements) and enterprise level (via works councils). This suggests in turn that enterprises with works councils and/or following collective bargaining agreements ought to have hours more favorable to worker interests than enterprises without such worker organization. Such manifests itself in the general pattern shown by industrial-relations research that workers covered by collective bargaining agreements and represented by works councils fare better in terms of wages and working conditions than their “unrepresented” counterparts.²⁸ The second intuition is that the unions shaping collective-bargaining

²⁶ In a 2004 survey, 26 percent of German establishments extend working-time in opening clauses (35 percent of those using opening clauses), and a higher percentage use opening clauses for variable working time (51 percent of surveyed establishments, 68 percent of those with opening clauses); see Thorsten Schank, Claus Schnabel, and Joachim Wagner, “Works councils: Sand or Grease in the Operation of German Firms?” *Applied Economics Letters* 11, no. 3 (2004): 159-61.

²⁷ John T. Addison, Lutz Bellmann, Claus Schnabel and Joachim Wagner, “German Works Councils Old and New: Incidence, Coverage and Determinants,” *Schmollers Jahrbuch* 123, no. 3 (2003): 339-58.

²⁸ For effects of collective agreements on wages and working conditions, see John W. Budd and In-Gang Na “The Union Membership Wage Premium for Employees Covered by Collective Bargaining Agreements,” *Journal of Labor Economics* 18, no. 4 (2000): 783-807; and Stephan Gesine and Gerlach Knut, “Collective contracts, wages and wage dispersion in a multi-level model” (Nürnberg: Institut für Arbeitsmarkt- und

agreements and the works councils shaping enterprise-level agreements not only aggregate and can better represent worker interests; they also act as semi-autonomous organizations that might gather and disseminate information and strategies of employers, and might pursue their own idiosyncratic agendas. As such, enterprises following collective bargaining agreements and/or represented by works councils might have working-time arrangements differing from those without such representation – and not reducible to the workers as principals.

Both intuitions suggest that collective bargaining agreements and works councils might influence working-hours arrangements, and by implication might mediate how globalization impacts such arrangements. But neither says much about the direction of such mediating influence without inferences about the preferences and strategies of workers as principals and works-councilors and unions as agents over a range of work-place working-time arrangements under varying levels of globalization.

With respect to overall working-hours standards for full-time workers, both the workers and unions and works councils are likely to prefer lower hours, to the extent that such is financially viable and not in tension with wage positions. This suggests as a backdrop expectation that works-council representation and coverage by a collective agreement ought to correlate negatively with negotiated standard working hours, all other things equal.

It also suggests how that incidence of works councils and collective-bargaining agreements might mediate the effects of globalization on standard hours. As we have seen, globalization likely has off-setting implications for the interests and influence of workers and

Berufsforschung, IAB Discussion Paper 200406, 2004). On works councils, a German study finds that their representation tends to increase wages in the net, and an Austrian study found that workers in works councils are less likely to work overtime (18 percent) than their counterparts in firms without works-council representation (24 percent); see John T. Addison, Paulino Teixeira and Thomas Zwick, “Works Councils and the Anatomy of Wages” (Bonn: Institute for the Study of Labor, IZA Discussion Paper 2474, 2006), and Manfred Krenn, “Positive effects of works councils on working conditions,” *European Working Conditions Observatory*, 25 September 2006, <http://www.eurofound.europa.eu/ewco/2006/04/AT06040291.htm>. Such benefits tend not to come at the expense of firm efficiency, at least in the German context; see Schank et al., “Works councils”; and Olaf Hubler and Uwe Jirjahn, “Works Councils and Collective Bargaining in Germany: The Impact on Productivity and Wages,” *Scottish Journal of Political Economy* 50, no. 4 (2003): 471-91.

employers. But the incidence of works councils and collective bargaining agreements ought to strengthen the net influence of worker preferences – and, more obviously, the preferences of works councilors and unions as agents – in industrial-relations negotiations and reactions to globalization. To the extent that workers and or works-councilors or unions prefer lower standard hours at a given pay for full-time employees, we have the basis for a second hypothesis:

Hypothesis Two:

Economic globalization should more negatively or less positively affect standard weekly hours when enterprises have a works council and/or follow collective bargaining agreements than when they do not.

The mediating influence of collective bargaining and of works councils might be stronger when both institutional conditions are combined or interact, something we explore in the empirics below. But our expectation is that employee representation in setting working-time conditions at the level of the firm or industry (via collective bargaining) and/or at the level of the enterprise (via works councils) plays a negative mediating role for the effects of globalization on standard hours.

With respect to work-time flexibility – such as the incidence of temporary or fixed-term employment, or in terms of work-time accounts – the positions of workers and of the unions and works councilors representing them are less clear-cut, with important implications for how worker organization might mediate globalization's effects. There is enough diversity among different kinds of workers – in terms of lifestyles, gender, family-types, etc. – that one cannot assume that workforces or their works-councilor agents will be as unanimously or vociferously against such flexibility as they are in favor of lower standard hours for full-time employees. Furthermore, flexibility might well be a higher priority among employers than standard hours for core workers, such that works councilors or unions as agents in frequent discussion with employers and likely sensitive to concerns about the profitability of enterprises might take a softer line on such flexibility. In general, given less clear-cut worker

opposition and clearer-cut employer support for work-time flexibility, one might thus expect that globalization is likely to have a more clearly positive effect for flexibility. And on the basis of more unclear preferences of workers and works-councilors on flexibility, the possible role that unions and works councils might play in steering the effects of globalization is likely to be more modest for flexibility than for standard hours.

The role that unions (via collective agreements) and works councils might play in mediating how globalization affects work-time flexibility is further complicated by possibilities that unions and works councilors might trade off the interests of workers on issues of flexibility, where worker preferences can be expected to be less clear-cut, against other worker needs. Most obviously, one might expect that unions or works-councilors would be willing to accept some sweating on work-time issues, particularly flexibility, if that is the price of job security, or of maintaining or increasing investment in onshore enterprises. Indeed, there are case-study histories of industry-level negotiations involving unions and enterprise-level negotiations involving works-councils suggesting precisely such trade offs – such as exchanging working time flexibility for investments and employment protections in automobile plants and consumer electronics.²⁹

As a variant of such strategic bargaining, unions or works councils might also be willing to make concessions of flexibility-related work time arrangements in exchange for protecting priorities on other work-time arrangements, such as standard hours. Such a strategic trade might reflect calculations of employer priorities (employers more concerned about flexibility than total weekly hours) or employee priorities (employees more divided and unclear about flexibility than about standard hours for core workers). It might also reflect how union representatives or works councilors prioritize the needs of core, full time workers, over more marginal workers – where the former might be more protected by standard hours and

²⁹ See Thomas Haipeter, “Recent Developments in Co-determination at Volkswagen: Challenges and Changes,” *Journal of Industrial Relations* 48, no. 4 (2006): 541-47; and Raess and Burgoon, “The Dogs that Sometimes Bark.”

other conditions for full-time workers, while temporary and fixed-term contracts are accepted because they affect those less central to union and works-councilor work organization. If so, strategic action across work-time issues might reflect a classic insider-outsider trade-off by unions and works councils.

Whatever the particular logic behind such strategic action, anecdotes of union and works-councilor bargaining reveal instances where such broad trade offs across work-time issues were at work. The 1994 collective bargaining in the German metal industry, for instance, took place against a backdrop of unprecedented losses in sector's revealed comparative-advantage, reflected in the *Standortdeutschland* debate. Employers sought relief via cuts in the holiday payment and increases in working-time corridors and flexibility, while unions demanded a wage increase, a 12-month dismissals prohibition, and employment safeguards.³⁰ The final agreement reached in early March included a 2 percent wage increment, an opening clause allowing limited work-time reduction (with full or partial wage reduction) in exchange for job guarantees, and extension of balancing time for working-time accounts from 6 to 12 months. The latter flexibility was dear to employers because it decreased overtime premiums, as accumulated hours can be compensated-for by free time over a longer time period. In short, amidst international competition, IG Metall demanded and obtained an opening clause safeguarding employment via *reduced* hours,³¹ but willingly accepted flexibility, considering it a modest price to pay for increased work-time options.

A second anecdote involves the agency of works councils at the enterprise level, rather than unions in collective bargaining. At a Siemens plant in Cham, Bavaria, producing low voltage switches for world markets (export share is 75 percent), employers were considering

³⁰ See Götz Richter, Wolfgang Schnecking and Helmut Spitzley, *Beschäftigungssicherung durch betriebliche Arbeitszeitverkürzung. Soziale Voraussetzungen und Folgen der betrieblichen Anwendung beschäftigungs-sichernder Flächentarifverträge* (Bremen: Bericht über das HBS-Projekt 99-108-3, 2001).

³¹ The union rejected employers' proposal of a working time corridor permitting *longer* hours.

alternative domestic and foreign sites to manufacture the new Sirius products in 1998.³² In that context, management and the works council concluded an agreement on the new shift model “Vario 4,” creating a new 18-shift model (Sunday 11:00pm to Saturday 11:00pm, instead of 15 shifts) with cancellation of premium pay for Saturday work for about 250 workers (or one-third of the workforce). In exchange for greater flexibility, employers were willing to offer more worker-friendly standard hours, more generous than the metal industry’s collectively-agreed 35 hour-week. The workers involved in “Vario 4” had their working time reshuffled to eight-hour days over four days (32 hours per-week), plus an extra (fifth) day of work and some training every quarter while getting half-an-hour paid per day worked (equivalent of two hours per week). Such case-study anecdotes support the intuition that unions and works councils might respond to globalization with quid-pro-quos that give employers their flexibility in exchange for protecting or lowering of standard hours.

We have, hence, a range of reasons to support our last hypothesis:

Hypothesis Three:

Economic globalization should more positively or less negatively affect work-time flexibility (incidence of temporary, fixed-term work, and balancing-time accounts) when enterprises have a works council and/or follow collective bargaining agreements than when they do not.

These mediating effects might, as with standard hours (though in the opposite direction), be stronger where the incidence of collective agreements or works councils coincide or interact. But our main expectation is that worker representation at either level of industrial relations where hours are set should *positively* mediate how globalization affects work-time flexibility.

In sum, simple reasoning on employer and employee preferences on working time, and on how globalization and work-place institutions can be expected to influence those preferences and political capacities generate broad expectations about globalization and working time. We see globalization as having off-setting effects for working time, leaving the

³² Author interview with Karl-Heinz Riederer, deputy chairman of works council, Cham, May 2003.

net effects an empirical question. But we do expect stronger, more positive (or less negative) effects of globalization for flexibility than for standard hours (Hypothesis One). And we expect the incidence of works councils or collective bargaining to negatively mediate how globalization affects standard hours (Hypothesis Two) while positively mediating how globalization affects flexibility (Hypothesis Three).

2. Evidence from Establishment Surveys in Germany

The rest of the paper tests these expectations on enterprise-level data of firms and work-hour conditions in Germany, capturing the full range of international economic exposure in an industrialized economy. Our data comes from the IAB Establishment Panel of the Institute for Employment Research (*Institut für Arbeitsmarkt- und Berufsforschung*, hereafter IAB) of the Federal Employment Agency. The IAB surveys are collected among a very broad sample of enterprises in East and West Germany.³³ The survey unit is the establishment or local production unit, not the legal or commercial entity of the firm, and the sample is regularly augmented to take account of self-employment and to correct for plant closures, exits and newly-founded units. Unlike other German enterprise-level datasets (e.g. Hannover Firm Panel, NIFA Panel), the IAB data is nationally representative, including establishments from all regions, public and private industries and size. The survey focuses on a wide range of employment-related matters, including employment level and composition, turnover and investments, training, recruitment and dismissals, wages and working hours. While many survey questions are repeated every year, some are collected biennially, triennially, or less frequently. Unfortunately, questions relevant to this study's measure of standard hours and work-time flexibility are not asked consistently across waves, allowing at

³³ In general, the questionnaire is filled in by the owner or senior management of the establishment in a personal interview. The reference date for data collection is June 30th of each year.

most a few closely spaced years, with gaps, and where the over-time variation is minimal.³⁴ For this reason, we focus on a 2002 cross-section of establishments (N=15,863), providing the broadest cross-section of units surveyed and providing the broadest measures for standard hours and work-time flexibility relevant to the arguments above.

Such establishment data in Germany is for several reasons the most promising for investigating the above claims – more than other country studies and more than national-level comparisons across time and space. The establishment level of the IAB data is where work-time conditions are most meaningfully negotiated. The IAB surveys allow direct judgments of how a range of measures of globalization, mediated by a range of work-place institutions, influence a range of work time and flexibility measures. And these data capture the full variation in such parameters, among a representative cross-section of establishments, in Europe’s largest national economy.

2.1. Dependent Variables: Standard Hours and Work-time Flexibility

The IAB surveys ask questions that measure both standard working hours and several features of job flexibility. For the former, the measure is *standard hours*, weekly standard hours for full-time workers, taken from the following question in the survey (English translation): “How long is the presently agreed average weekly working time for full-time workers in your establishment?” Respondents are asked to report the weekly hours at the 1-digit level after the comma (e.g. 38.5 hours per week). This measure misses part-time workers and the deviations across months and weeks in standard hours that inevitably occur, but it

³⁴ For instance, our composite measure of flexibility loses components if one chooses a wave other than 2002. And the wording on standard hours changes, sometimes mentioning “average standard hours” and, in other years, “standard hours.” The very short panels (e.g. 3 years) that are possible show substantial persistence in the data, further undermining the value of a panel. For instance, between 1996 and 2002, less than 5 percent of the sample shows change in works-council representation.

provides a direct and politically-salient measure of how much time core employees of an establishment spend on the job.

Such average weekly standard hours vary across and within industries in Germany, even though sector-level collective agreements remain important determinants of agreed and actual hours worked. In recent years an increasing number of industries have introduced opening clauses to such agreements, delegating allocation of working hours to actors at the establishment level. “Working-time corridor” (*Arbeitszeitkorridor*) is one of the instruments used, allowing companies to reduce or extend working times within limits. For instance, the 1994 collective agreement in the western chemicals industry provides for such a corridor, where average weeks of 37.5 hours can be raised to 40 or lowered to 35 hours with commensurate increases or reductions in pay. Other agreements contain opening clauses for working-time reduction without wage compensation in exchange for job guarantees (*Beschäftigungssicherungstarifverträge*). In the banking sector, for instance, a firm can for a limited time decrease average work from 39 to 31 hours (with pay reduction) in exchange for employment guarantees. Finally, establishments not covered by collective bargaining can deviate at will from collectively-agreed hours. And the share of establishments *not* covered by such agreements has steadily increased in recent years to 55 and 78 percent, respectively, in western and eastern Germany in 2001.³⁵ In short, plant-level social partners have considerable room for maneuver to decide the amount of hours worked in most industries.

This shows up in the IAB data, where the sample mean is 38.8 hours per week, with a minimum of 21 and maximum of 56 hours per week and with the 1st-percentile being 35 hours and the 99th 45 hours per week (see summary statistics in Appendix One).³⁶ Across sectors,

³⁵ See Kohaut and Schnabel, “Zur Erosion des Flächentarifvertrags.”

³⁶ We exclude outlier-enterprises reporting fewer than 20 and more than 60 hours as highly likely to be mis-reported hours: under 20 hours-per-week falls outside existing definitions of full-time work (and the survey explicitly specifies “*for full time workers*”), and a 60-hour week is hard to reconcile with “*average agreed weekly hours*.” Such restrictions drop only about 100 of the 15,000+ establishments surveyed and don’t appreciably affect results below.

divided at the 41-branch level, the branch with the highest average standard hours is “Transport” with 40.3 hours, and that with the lowest average is “Paper, printing and publishing,” with 37.1 hours.

Our measure of work-time *flexibility* focuses on contract flexibility and working-hour flexibility. With respect to employment contract flexibility, we consider the incidence of two atypical work contracts: whether or not an enterprise has in the last year had employees with *temporary work contracts* (i.e. employment via a temporary work agency); and whether in the last year they have had employees with *fixed-term contracts*, such as arrangements to work a given set of weeks or months. With respect to working-hours flexibility, we consider the incidence of a *working-time account* (*Arbeitszeitkonten*), an institution that allows flexible working time over the course of a given week or month without extra overtime compensation.

In any event, we measure the incidence of each of these aspects of *flexibility*, recoded as binary variables, as follows: 0=no temporary work contracts in the establishment (no fixed-term contracts, no working-time account); 1=presence of temporary work contracts (fixed-term contracts, or working-time accounts).³⁷ In the 2002 survey, the incidence of each varies: with 49 percent of establishments having working-time accounts; 13 percent having temporary work contracts; and 46 percent having fixed-term contracts. Significantly and as one would expect, all three elements correlate positively (and statistically significantly) with one another, with coefficients of correlation ranging from .20 to .22.

These components were themselves analyzed separately, and yielded similar enough results that we have elected to report a composite measure of work-time *flexibility* that combines information of the components. Hence our composite is a simple addition of three binary elements of flexibility, temporary and fixed-term contracts and balancing accounts (with higher scores indicating greater flexibility). We recognize that this is not a true ordinal

³⁷ We also consider continuous measures for each feature of job flexibility (e.g. percentage of workers in an establishment that have in the last year had temporary work contracts) in robustness tests.

measure of flexibility, since incidence of one of the components is not theoretically or politically the same as the incidence of another. But we see the aspects of flexibility as cumulative in the basic sense of capturing how much work-time and job flexibility are present in a firm. In any event, the sample's average score is 1.09, with the full range of 0 to 3 represented among the enterprises, and with lowest industry *averages* in "Legal services" (average score, 0.5) and highest in "Transportation equipment" (2.0).

2.2. Explanatory Variables: Globalization, Works Councils and Collective Agreements

We report three measures of economic globalization, one directly in the IAB survey and two surmised from branch positions of enterprises. The first measure is *foreign sales*, based on one of the IAB-dataset's only direct information on international pressure: *foreign sales*, exports as percentage of total sales ($X/\text{total sales} \times 100$) at the establishment level – the most fine-grained globalization measure with a one-to-one match at the enterprise, not just industry, branch or company level. The measure's draw-backs are that it is narrow – not gauging, for instance, exposure of non-exporting enterprises that might be largely import-competing – and is based on a question not asked of firms in financial and some service sectors, thereby introducing selection bias by censoring-out less internationally exposed enterprises. In any event, the sample mean for *foreign sales* is 8.05, ranging from 0 (e.g. enterprises in legal and accounting) to 100 (e.g. some electronic-equipment enterprises).

Our second and third measures are generated from information external to the dataset but matched to the respondent's sector of employment. This was facilitated by the NACE industry classification in the IAB Establishment Panel, adopted in 2000. Using this information, we compile measures of trade and FDI flows at the same two-digit NACE classification level using statistics on imports, exports, production, and domestic and foreign

employment for goods and services found in three databases: OECD's STAN Database for Industrial Analysis and "Statistics on International Trade in Services" give imports, exports, production and domestic employment data for most sectors; and the Deutsche Bundesbank's *Kapitalverflechtung mit dem Ausland* gives statistics on foreign employment by German MNCs and domestic employment controlled by foreign firms for a given sector.

These reliable statistics on branch or sector allow us to develop a range of globalization measures, of which we focus on and report two. First, *total trade* is the sum of exports and imports in the sector, as a proportion of total production in that sector $((X+M)/\text{production})$. Second, *total FDI* is the sum of the sector's German MNCs' foreign employment and the foreign MNCs-controlled domestic employment, as a proportion of the sum of sector's total domestic and German MNCs' foreign employment.³⁸ It is worth emphasizing that measuring FDI openness in terms of (foreign and domestic) employment is similar to measuring FDI stocks, but unlike FDI flows and stocks is less sensitive to exchange-rate fluctuations. The created globalization measures, in any event, are lagged by one year (measured in 2001, hence) to take account of possible delays in negotiated responses to economic conditions. The sample means for *total trade* and for *total FDI* are .394 and .158, respectively, with *trade* ranging from .001 (e.g. an enterprise in religious services) to 5.879 (e.g. in mining), and *FDI* ranging from .007 (e.g. in education) to .815 (e.g. in tobacco). In addition to the three reported measures, we also consider in robustness tests several others – a measure of foreign ownership (found in the IAB survey), and (using techniques similar to basis for *total trade* and *total FDI*) measures of export orientation, import-penetration, net export shares, and outward and inward FDI.

Works council incidence. The works council variable is a binary variable, one if the establishment has a works/staff council and zero otherwise. The expectation is that having a

³⁸ Here we measure shares rather than percentages for ease of interpretation in the regression analysis below.

works council ought to be associated with fewer *standard hours* but likely greater *flexibility*. Because we are interested whether works council incidence mediates the effects of globalization, we restrict the sample to firms with five or more employees; German labor law stipulates that works councils are authorized (but not mandatory) in all establishments with five or more employees. Restricting the sample, thus, is crucial to investigating potential differentiated work-floor consequences of the workforce's *real choice* for or against the set-up of a works council under globalization. In the 2002 cross-section, the percentage of enterprises with a works council is 46 percent.

Collective Agreement incidence is also a binary variable indicating whether a respondent enterprise follows an industry-level *or* company-level collective bargaining agreement. Whether enterprises have a works council and/or are themselves unionized, itself does not appear in the IAB survey, is not relevant here; but the correlation between the incidence of works councils and of collective agreements is quite high, at .476. The expectation, however, is the same as with works councils, that enterprises following collective agreements (coded 1 in the data) should have fewer hours but possibly higher flexibility than those not following agreements (coded 0). In the cross-sections, in any event, 62 percent of respondent enterprises follow collective agreements.

We can now state our main expectations in terms of these parameters: that all the globalization measures ought to correlate more strongly positively or less negatively with *flexibility* than with *standard hours*, and that works councils or collective agreements ought to positively mediate globalization's implications for *flexibility* but negatively mediate them for *standard hours*. Figure One provides descriptive-statistic illustration of these patterns. Shown are how branch-level averages of *standard hours* and *flexibility* are correlated with industry-level averages of FDI, restricting the data sample either to establishments without works councils (the left-hand panels) or to establishments *with* works councils (right-hand panels).

[[Figure One about here]]

The patterns for *standard hours* suggest that where works councils are not present, the relationship is weakly positive, but that when works councils are present FDI tends to reduce *standard hours* for full-time workers. On the other hand, the lower two scatterplots for *flexibility* show the opposite pattern: that FDI has little impact on *flexibility* where works councils are absent, but tends to have significantly higher *flexibility* when they are. Such diverging patterns are consistent with Hypothesis Two and Three, respectively. Comparing the top two with the bottom two panels also provides descriptive-statistical support for Hypothesis One that globalization may have more negative (less positive) effects for *standard hours* than for *flexibility*. Note also that incidence of works councils negatively correlates with *standard hours* (shown by the lower hours on the right-hand than the left-hand panel), but positive correlates with *flexibility* (higher scores on the right-hand than on the left-hand panel). Similar patterns emerge in descriptive-statistical analysis of collective bargaining and other globalization measures. Such is only an illustration, however, because it smooths-over much-finer-grained establishment-level variation and ignores effects of other factors.

Controls. This brings us to the controls that plausibly influence globalization, *flexibility* and *standard hours*. Establishment size (total employees, including trainees but excluding temporary workers) can be expected to be negatively associated with standard hours, reflecting how economies of scale in larger plants reduce unit costs, allowing for more workforce power to decrease hours.³⁹ A positive association is expected between size and job flexibility as large firms tend to have their own Human-Resources department with legal

³⁹ Peter Cappelli, "Plant-level Concession Bargaining," *Industrial and Labor Relations Review* 39, no. 1 (1985): 90-104.

expertise to organize internal flexibility.⁴⁰ East German location ought to mean longer work hours, given differences in agreed hours and in productivity, despite union attempts to equalize conditions.⁴¹ East German location is less clear-cut with respect to *flexibility* – where neo-liberalism in East Germany may mean more *flexibility*,⁴² but where the lower labor rights and benefits might obviate the need for *flexibility*. Skill level, proportions of unskilled and production workers, ought to yield under modern production circumstances (e.g. just-in-time methods, greater client orientation) higher *standard hours* and likely require greater *flexibility*.

External unemployment, the increase (or decrease) in unemployment at the regional level of the Bundesländer,⁴³ ought to unleash demands for shorter hours to share and/or safeguard employment in exchange for flexibility (reflecting the pace-setting model of working time reduction in the German metalworking industry).⁴⁴ Single-establishment firms (1 if single, 0 if subsidiary or headquarters of a larger firm) we expect to positively relate to *standard hours* and negatively to *flexibility* – reflecting how single enterprises tend to be small, less profitable, family businesses unlikely to have the resources to implement flexibility schemes and policies. Public ownership have off-setting effects for *standard hours* and *flexibility*, such enterprises being service-providers and having the bureaucratic resources to implement flexibility but also subject to tighter, worker-friendly labor laws. New plants (1 if founded since 1990, 0 for older) might have longer *standard hours* and more *flexibility* because such firms may sweat workers to compensate for their disadvantages *vis-à-vis* learning effects and market visibility. A range of other factors might plausibly matter as controls but are excluded from the reported results because they are also likely affected by

⁴⁰ Thelen and Kume, “The effects of Globalization on Labour Revisited.”

⁴¹ Wolfgang Schroeder, *Das Modell Deutschland auf dem Prüfstand: zur Entwicklungen der Industriellen Beziehungen in Ostdeutschland (1990-2000)* (Wiesbaden: Westdeutscher Verlag, 2000).

⁴² Wolfgang Schroeder, “Leipzig und BMW: Standortwettbewerb durch Clusterbildung,” in *Das neue Deutschland. Die Zukunft als Chance*, ed. Tanja Busse and Tobias Dürr (Berlin: Aufbau-Verlag, 2003); and *Das Modell Deutschland auf dem Prüfstand*.

⁴³ We use unemployment figures from the Federal Employment Agency (Bundesagentur für Arbeit, *Arbeitsmarkt in Zahlen – Zeitreihen*, Stand Januar 2007, Bundesagentur für Arbeit – Statistik, 2007).

⁴⁴ Bosch, “From 40 to 35 hours.”

rather than affecting globalization conditions. For instance, total wages might plausibly influence globalization and working-time measures, but are also more likely artifacts of globalization. Such factors, hence, we consider only in robustness checks.

2.3. Estimation Strategy

Both for *standard hours* and for our composite of work-time *flexibility*, we consider cross-sectional estimations taking the following general forms:

$$\text{Standard weekly hours}_{it} = \alpha + \beta_1 \text{Globalization}_{it-1} + \beta_2 \text{Works-council}_{it} + \beta_3 \text{Globalization}_{it-1} * \text{Works-council}_{it} + \beta_4 \text{Controls}_i + \text{Industry}_i + \varepsilon_{it} \quad (1)$$

$$\text{Standard weekly hours}_{it} = \alpha + \beta_1 \text{Globalization}_{it-1} + \beta_2 \text{Collect.-Agreem.}_{it} + \beta_3 \text{Globalization}_{it-1} * \text{Coll.Agreem.}_{it} + \beta_4 \text{Controls}_i + \text{Industry}_i + \varepsilon_{it} \quad (2)$$

$$\text{Flexibility}_{it} = \alpha + \beta_1 \text{Globalization}_{it-1} + \beta_2 \text{Works-council}_{it} + \beta_3 \text{Globalization}_{it-1} * \text{Works-council}_{it} + \beta_4 \text{Controls}_i + \text{Industry}_i + \varepsilon_{it} \quad (3)$$

$$\text{Flexibility}_{it} = \alpha + \beta_1 \text{Globalization}_{it-1} + \beta_2 \text{Collect.-Agreem.}_{it} + \beta_3 \text{Globalization}_{it-1} * \text{Coll.Agreem.}_{it} + \beta_4 \text{Controls}_i + \text{Industry}_i + \varepsilon_{it} \quad (4)$$

Standard hours is a continuous variable, for which coefficients are OLS, and *flexibility* is an ordinal measure ranging from 0 to 3, for which the estimator is ordered probit. Given possible unit-level heteroskedasticity and correlation, we combine these OLS or ordered-probit estimation of coefficient estimates with the Huber-White *robust-cluster* “sandwich” estimator of standard errors, clustered over branches (41 branch categories). This provides correct coverage in the face of any correlations among errors *within* clusters. The models consider how works councils or collective agreements mediate how globalization affects *standard hours* and *flexibility* by interacting globalization with incidence of works councils (1 and 3) or collective bargaining (2 and 4), taking fuller advantage of the data than splitting the dataset by incidence. In terms of models, we expect $\beta_1 \text{Globalization}_{it-1}$ to be more negatively (less positively) signed and significant for *standard hours* than for *flexibility*. We

also expect $\beta_2 \text{Works-council}_{it}$ and $\beta_2 \text{Collect.-Agreem.}_{it}$ coefficients to be negatively related to *standard hours*, though less so or positively-related to *flexibility*. Finally, interaction terms ($\beta_3 \text{Globalization}_{it-1} * \text{Works-council}_{it}$ or $\beta_3 \text{Globalization}_{it-1} * \text{Coll. Agreement}_{it}$) should be negative in the case of *standard hours*, and positive in the case of *flexibility*.

Our preferred models consider the globalization and work-organization measures separately, mainly because these pose off-setting constraints on the sample of enterprises for which we have full information, such that the sample size is significantly reduced by simultaneous inclusion of the globalization measures on the right-hand side. To consider the net effects among the globalization measures, however, we do consider estimations with all three together, and these tend to pose only modest collinearity problems (e.g. with variance-inflation factor scores for individual globalization measures always below 10 in the cross-sections). *FDI* and *trade* are lagged one year to address possible endogeneity and delays in how international exposure affects work-time in collective agreements or works-council bargaining. All estimations, in any event, include 10 broad industry dummies (u_i), to account for unobserved effects of industries and to further address unit-level heteroskedasticity.⁴⁵ In addition to these main specifications, we also consider alternative specifications in robustness tests, including with other controls and with alternative measures of globalization and combinations and interactions of the work-organization measures.

3. Results

Table One summarizes the results for standard hours. The first four columns show the results with incidence of works councils, and the second four columns summarize results with

⁴⁵ (1) Agriculture, hunting, forestry, fishing; (2) Mining, electricity, gas and water; (3) Manufacturing; (4) Construction; (5) Trade and Repair; (6) Transportation and Communication; (7) Financial Intermediation; (8) Industrial services; (9) Other social services; (10) public administration.

incidence of collective bargaining. The first and fifth columns summarize results with all the globalization variables included simultaneously, without interactions with incidence of works councils or collective agreements. The remaining columns summarize results, showing separately the effects of foreign sales, total FDI, and trade, conditional upon incidence of works councils (columns 2-4) and of collective agreements (columns 6-8).

Most controls performed in line with expectation. Larger companies tended to have fewer standard hours. East-German location tended to correlate significantly positively with hours, and regional unemployment tended to correlate negatively. Industry dummies were highly jointly significant. The other parameters tended to be insignificant. The models tend to generally perform modestly, though, and do so even if one throws virtually all measures from the survey into alternative estimations.

[[Table One about here]]

Turning to the main results, the globalization measures tend to have either a negative or insignificant direct effect on standard hours, but these measures of globalization tend to significantly *increase* standard hours among enterprises without works council representation or without collective agreements but to significantly *decrease* such hours among enterprises *with* such representation. Columns (1) and (5) provide snapshots of the unmediated effects, suggesting that foreign sales has the strongest *and negative* direct effect on standard hours, net of the insignificant negative effect of FDI and insignificant positive effect of trade openness. Substantively, however, the effects are modest, in that a 1 percent increase in foreign sales yields between a .008 and .012 hour decrease in weekly standard hours. Such would imply that moving from 0 to 50 percent foreign sales – roughly moving from the sample’s 10th to 90th percentile – predicts a decrease of .40 and .60 hours per week. These unmediated effects

also suggest the effects of worker organization, where incidence of either works councils or collective agreements significantly reduce predicted standard hours – more so for works councils than for collective agreements (where workers in enterprises with works councils work more than an hour less than their counterparts in non-works council enterprises). In general, thus, this basic result modestly supports the idea that globalization tends to mean virtually no change, and perhaps small reductions in standard hours for full time workers. Whether this supports Hypothesis One – that globalization should correlate less positively or more negatively with standard hours than with works councils – we cannot judge until the results are set along-side those for work-time *flexibility* below.

Columns 2-4 suggest that the interaction with works councils is in general strong, consistent with Hypothesis Two. The results for the globalization parameters must be interpreted together with the works council and the interaction term, but are in line with expectations above: all the interaction terms are negative and statistically significant at the .01 level, and the three globalization measures are jointly significant with their interaction term and works-council parameter. This suggests that the predicted effects of globalization are more negative and less positive in establishments with works councils than in those without. The globalization variables can be read as conditional effects of globalization in establishments without works councils. In establishments without works councils, thus, all three globalization measures significantly positively affect *standard hours*. The substantive size of this conditional effect is very modest: a one percent increase in total trade, for instance, yields an increase in .005 hours per work week for full time workers. And moving from the 25th to the 75th percentile in trade (roughly from 3.9 to 63.9 percent of production) yields less than a half-hour increase in weekly standard hours. With works councils, in any event, this becomes even less positive, as given by the significantly negative interaction term.

How much so requires counter-factual estimation, provided in Figure Two. The Figure plots predicted values of *standard hours* (solid lines), based on estimations in columns 2-4, across the sample distribution in foreign sales (upper left panel), total FDI (upper right panel), and trade (lower left) – where incidence of works councils is set at either zero or one (without and with works council representation, respectively) but holding all other parameters at their means or medians. Where the upper and lower dotted-line schedules have the same slope as the solid-line-schedule they delimit – positive or negative – the predicted change at that point is statistically significant at the 95-percent confidence level. As shown by all three panels, the positive effects of globalization where works councils are absent contrast the predicted results where works councils are present: in the latter case, foreign sales, trade and total FDI predict statistically significant decreases in standard hours. These effects remain modest; for instance, moving from 10th to the 50th percentile in total FDI – equivalent to moving from a share of .007 to .134 – predicts a drop from 38.74 to 38.37 hours per week, from the 45th to the 32nd percentile in the sample distribution of standard hours.

[[Figure Two here]]

Columns 6-8 show that these patterns are roughly duplicated by the mediating role of collective agreements. As with the previous results, the conditional coefficients for the globalization measures are positive where enterprises do not follow collective agreements, though here all the coefficients are substantially smaller and only trade is significant (at the 95-percent confidence level). Similarly, coefficients for the interaction terms for globalization and incidence of collective agreements are negative and statistically significant, though a bit smaller than interaction terms with works councils. Counterfactuals similar to that supporting Figure Two suggest the substantive meaning of such interaction, that all measures of

globalization have a statistically significant and negative effect on hours where an enterprise follows company or industry level collective agreements. As with the effects conditional upon works councils, such effects are substantively very modest. But the pattern suggests a clear indication that worker representation via unions and works councils tend, consistent with Hypothesis Two, to negatively mediate the effects of globalization.

Table Two summarizes the results for work-time *flexibility*. In terms of specification, they exactly parallel the results from Table One: Columns 1-4 show results for works councils, and 5-8 for collective agreements. Again, the controls perform broadly in line with expectation, with size significantly spurring flexibility; production workers correlating positively though modestly with flexibility; stand-alone firms less likely to introduce flexibility standards; regional unemployment tends to correlate positively with flexibility; newer establishments having more flexibility, and public ownership spurring flexibility.

[[Table Two here]]

In line with expectations, the main results clearly contrast those for standard hours for full-time workers. Here, globalization measures tend to spur *flexibility*, and works councils and collective agreements tend not only to spur *flexibility* but to positively mediate globalization's effects. Columns 1 and 5 show the combined direct effects of the globalization measures, with incidence of, respectively, works councils and collective agreements. In sharp contrast to the results for *standard hours*, incidence of works councils and of collective agreements tend to spur rather than diminish flexibility, with the effects again being somewhat stronger for works councils than for collective agreements. More importantly and also in contrast to the results for *standard hours*, foreign sales and FDI both tend to have positive rather than negative coefficients,

significant for both estimations of foreign sales and FDI in column 5. Trade, however, is negative but insignificant in both specifications. Hence, two of the three globalization measures tend to positively correlate with *flexibility*. If we compare these patterns with their counterparts in columns 1 and 5 in Table One, we have some support for Hypothesis One: with respect to two out of three of our measures, globalization has more positive (or less negative) effects for *flexibility* than for *standard hours*.⁴⁶

Columns 2-4 show the results of taking the globalization measures separately, where having a works council tends to make the effect of globalization on flexibility more positive – significantly so in the case of FDI and works-councils interaction (column 3). For foreign sales, the interaction is weakest but the main positive effect strongest – the main punch line being that (even) in establishments without works councils, increases in foreign sales statistically significantly spur incidence of flexibility measures. The substantive size of this effect can be captured by in-sample counterfactual predictions based on the model in column 2, taking all controls at their means and varying levels of foreign sales, works council incidence and their interaction. Among establishments without works councils, moving from the 50th through the 90th percentile in the sample distribution of foreign sales – from 0 to 30 percent of sales – the model predicts an increase from .14 to .19 in the probability of an establishment having high flexibility (a composite score of 2 or 3). Where works councils are present, furthermore, this effect of globalization is proportionately similar: the same increase in foreign sales (from zero to thirty percent) predicts an increase from .48 to .58 in the probability that establishments will have high flexibility.

In the left panel of Figure Three, we can see the substantive nature of the interaction between total FDI and incidence of works councils (the only of the three

⁴⁶ The results more strongly favor Hypothesis One if one takes each globalization measure separately (rather than together as in columns 1 and 5 of Tables One and Two), with not only foreign sales and FDI but also trade being negative for *standard hours* and positive for *flexibility*, though insignificantly so in the case of trade.

measures of globalization where the interaction is statistically significant). The lower schedule shows that where enterprises do not have works councils, rising FDI tends to have no significant effect on the probability that an enterprise has a *flexibility* score of 2 or 3 (out of the 0-3 scale). The lack of significance is captured by how the slopes of the upper and lower confidence intervals are always of opposite signs throughout the sample distribution of total FDI. The upper schedule, however, shows that when enterprises *do* have works councils, rising total FDI tends to spur the chance that the enterprise has high *flexibility score* (two of three of temporary or fixed contract work, or balancing-time accounts). And we can see that this conditional effect is statistically significant throughout the sample distribution, as the upper and lower confidence schedules remain positively-sloped throughout the sample distribution of FDI. This effect remains modest, however. Among enterprises with works councils, moving from .007 to .134 total FDI – equivalent to moving from the 10th to the 50th percentile in the sample distribution of total FDI – yields a .06 increase in the probability of high *flexibility* (i.e. a score of 2 or 3 on the 0-3 scale), from .44 to .50.

[[Figure Three here]]

Columns 6-8 of Table Two show that the interaction between globalization and incidence of collective agreements follows the same pattern. This is immediately visible by the statistical significance of all three interaction terms, not just for total FDI. Again, however, the conditional coefficients for the globalization parameters show that where enterprises do not follow collective agreements, only *foreign sales* has a significant spurring effect on the probability that enterprises have high *flexibility*. And this effect is comparable, though slightly larger than, the substantive effect reported for foreign sales in Column 2. The

right-hand panel of Figure Three shows the scale of the interaction between total FDI and incidence of collective agreements. Here, again, FDI has no significant effect on the probability of high *flexibility* when enterprises do not follow company or industry collective agreements. But where collective agreements are followed, FDI *does* significantly spur the probability of high *flexibility*. Since the measures of probability of high *flexibility* and of total FDI are on the same scale as for the left-hand panel, the slightly steeper upper schedule in the right-hand panel shows that the substantive effect of FDI where collective agreements are in place is slightly stronger than when works councils are present. But that effect is still substantively modest. Moving again from the 10th to the 50th percentile in FDI (from .007 to .134 foreign share of employment) predicts a .063 increase in probability of high *flexibility* (from .28 to .34). Interactions for foreign sales and trade are substantively similar, though *foreign-sales* is significant whether or not collective agreements are in place. These results, then, clearly support Hypothesis Three – that incidence of works councils and collective agreements mediate globalization’s impact on flexibility in the opposite way to how they mediate its impact on standard hours: works councils and collective agreements *increase* rather than decrease positive correlation between globalization and flexibility.

The results for both *standard hours* (Table One) and for *flexibility* (Table Two) stand up to a range of robustness and sensitivity tests.⁴⁷ Considering both works councils and collective agreements together on the right-hand-side and in interaction with globalization yields very similar results, though also produces significant collinearity. Further, combining the two work organization measures into a single measure of work organization – as a dummy for incidence of works councils and collective agreements, as a dummy for incidence for works councils and/or collective agreements, or as a categorical variable (0-2) adding incidence of works councils and of collective agreements – yields the same patterns discussed

⁴⁷ Tables with the robustness and sensitivity tests are available from the authors.

in Tables One and Two. Finally, triple interactions between the two work-organization measures and with globalization measures, simply reinforce the effects of the two-way interactions in Tables One and Two.⁴⁸ Very importantly, the results are robust to other and disaggregated estimates of *standard hours* and of *flexibility*. For instance, log transformations of *standard hours* perform almost identically to the results shown in Table One. And the results in Table Two stand up to disaggregated estimates of each component of flexibility, and to alternative measures of each component (i.e. percentages as opposed to incidence). Also, step-wise exclusion and inclusion of various controls do not change the main results for either *standard hours* or *flexibility*. For instance, the results are virtually identical with inclusion of total wages as a control, and in estimates of *standard hours* with *flexibility* on the right-hand side, and of *flexibility* with *standard hours* on the right-hand side. And alternative estimators (e.g. ordered logit) and calculations of standard errors also leave the main results intact. Finally and perhaps most significantly, alternative measures of globalization – foreign ownership, industry-calculated export orientation, inward FDI, and outward FDI – all yield strikingly similar results to those shown in Tables One and Two.

4. Conclusion

These results show that economic globalization has significant and quite varying implications for enterprise-level working hours for full-time workers and for job flexibility, and that those implications appear also to be mediated in different ways by the presence of enterprise-level worker representation. Consistent with a “globaphilic” take on globalization and working time, the general (unmediated) results for standard hours suggest that globalization may lighten rather than increase the standard hours for full-time core workers.

⁴⁸ For instance, incidence of works councils increases (decreases) how much collective-agreement incidence increases (decreases) the degree to which globalization tends to increase *flexibility* (decrease standard hours).

But consistent with the “globaphobic” take, the results for the composite of work-time flexibility (incidence of temporary and fixed-contract work, and working-time accounts) all suggest that economic globalization tends to increase flexibility. Such contrasting patterns are actually consistent with our expectations, given how employers can be expected to be more committed to flexibility than to raising hours for core workers, and given how core employees can be expected to defend their hours and may prefer flexibility.

Equally important, however, are the varying results for how works-council representation and following collective bargaining agreements mediate these above effects of globalization. With respect to standard hours, we expected and find evidence that the presence of a works council or the following of firm- or industry-level collective agreements create political bargaining leverage to strengthen core-employee interests in protecting or lowering standard hours for full time employees – such that globalization in such settings actually tends to modestly reduce hours for such core workers. Without such works councils or collective agreements, conversely, we expect and empirically find that globalization spurs total working hours of full-time workers – plausibly an artifact of weaker representation of such workers in the face of globalization and competitiveness-sensitive employers. With respect to job flexibility, however, we expect and find evidence that incidence of works-councils and collective agreements may also mediate the flexibilizing effects of globalization – but in the opposite direction. To the extent that works councils and, particularly, collective agreements do play a mediating role, it is in a positive direction – that is, increasing the tendency of globalization to spur flexibility. This pattern makes sense in light of worker preferences works councils and unions putatively represent, and in light of the bargaining dynamics between works-councils and unions on the one hand, and employers on the other, in setting elements of flexibility, where works councils and unions have been seen to exchange flexibility to secure a lowering of hours and job protections for core workers.

We have, thus, results that clarify in some counter-intuitive ways the relationship between economic globalization and working time in industrialized countries – contributing to our understanding of how globalization affects industrialized polities, and of where differences in working time come from. To be sure, all of these results are substantively modest and are based on evidence from one country. But the data is a very broad and representative sample of thousands of enterprises, capturing the full gamut of a large economy's variation in globalization and working-time experiences. The results of the analysis, moreover, are robust to many alternative specifications.

Further research should extend the theoretical and empirical findings of this study in at least two basic ways. First, there needs to be more research into the range of experiences in other countries, where worker and employee representation are different than the relatively organized German setting. The external validity of the existing study is helped by how the data capture a lot of variation not only in a large economy's industry, skill and exposure to globalization, but includes a majority of enterprises without work-place representation. But other national settings differ in enough cultural and political terms to make their study meaningful – especially if data can be found with the coverage and detail of the IAB dataset. Second, there needs to be more thought and research into how working time arrangements set at the national, regional and supranational level might interact. Work-place rules and practices are crucial, but are also embedded in national and (in the case of the European Union) supranational regulations on working-time. The question, here, is whether the same uneven effects of globalization, mediated by worker representation, show-up on other levels of work-time regulation, and how and whether these other levels affect and are affected by the work-place and industry level examined here. Finally, after clarifying how globalization affects working time, and with better data, research may ultimately consider the more

complex implications of openness for combinations of working-time, wage and other conditions negotiated in work-places.

The existing findings, in the meantime, are a reminder of the complexity of globalization's effects for political-economic life – extending in uneven ways not only to the employment and wage experiences of workers, but also their working time. And the findings are, more importantly, a reminder that responses of workers and employers to economic globalization leave open substantial room for agency, resting on the work-place and industrial representation of workers. Such representation constitutes a choice in most political economies, certainly in the German setting surveyed here – but also in most other industrialized settings. And the theory and evidence above show that this choice can matter very much to working time, and to how globalization plays out with respect to such time.

Table One: *Standard Hours* and Globalization
(Dependent Variable: Standard Weekly Hours)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Globalization:</i>								
Foreign sales _{t-1}	-0.008*** (0.003)	0.005** (0.002)			-0.012*** (0.003)	0.0004 (0.0026)		
FDI _{t-1}	-0.291 (0.938)		1.599** (0.737)		-0.546 (1.072)		1.116 (0.817)	
Trade _{t-1}	0.101 (0.142)			0.504*** (0.156)	0.049 (0.155)			0.357** (0.156)
<i>Work organization:</i>								
Works Council	-1.121*** (0.159)	-0.889*** (0.138)	-0.392 (0.241)	-0.708*** (0.166)				
Collective Agreement					-0.827*** (0.137)	-0.674*** (0.124)	-0.309** (0.150)	-0.499*** (0.158)
<i>Interaction:</i>								
Globalization * Work council		-0.019*** (0.004)	-3.217*** (1.009)	-0.755*** (0.227)				
Globalization* Coll.Agreem.						-0.019*** (0.004)	-2.845*** (0.676)	-0.684*** (0.212)
<i>Controls:</i>								
Size (1000)	-0.183*** (0.023)	-0.168*** (0.019)	-0.121*** (0.036)	-0.133*** (0.041)	-0.204*** (0.034)	-0.199*** (0.029)	-0.149*** (0.038)	-0.156*** (0.041)
Location East-Germ.	1.342*** (0.185)	1.205*** (0.146)	1.175*** (0.136)	1.299*** (0.147)	1.297*** (0.195)	1.131*** (0.150)	1.151*** (0.144)	1.302*** (0.159)
Unskilled prop.	0.246 (0.195)	0.266* (0.138)	0.205 (0.139)	0.102 (0.182)	0.174 (0.206)	0.229 (0.144)	0.142 (0.147)	0.053 (0.188)
Production workers prop.	0.019 (0.217)	0.116 (0.154)	0.061 (0.143)	-0.057 (0.158)	0.141 (0.215)	0.252* (0.147)	0.199 (0.148)	0.068 (0.168)
Unemployment _{t-1}	-0.207*** (0.060)	-0.113* (0.057)	-0.118** (0.051)	-0.154** (0.058)	-0.269*** (0.072)	-0.159** (0.061)	-0.162*** (0.055)	-0.203*** (0.062)
Stand-alone firm	0.129 (0.079)	0.064 (0.071)	0.102 (0.064)	0.137** (0.064)	0.284*** (0.085)	0.217*** (0.080)	0.230*** (0.080)	0.276*** (0.087)
New plant	0.026 (0.073)	0.057 (0.070)	0.020 (0.068)	-0.045 (0.074)	0.036 (0.068)	0.062 (0.065)	0.018 (0.066)	-0.032 (0.071)
Public ownership	-0.262 (0.270)	-0.228 (0.224)	-0.121 (0.113)	0.192** (0.085)	-0.504 (0.311)	-0.405 (0.258)	-0.191 (0.153)	0.091 (0.114)
Constant	39.187*** (0.210)	39.271*** (0.138)	39.147*** (0.121)	39.039*** (0.151)	39.274*** (0.203)	39.302*** (0.143)	39.072*** (0.155)	39.114*** (0.171)
10 industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,734	9,210	10,242	7,562	5,739	9,207	10,240	7,568
R-squared	0.31	0.25	0.23	0.29	0.29	0.24	0.22	0.27

OLS coefficients with robust standard errors (in parentheses), clustered over branch. * significant at 10%; ** significant at 5%; *** significant at 1% or lower.

Table Two: *Flexibility and Globalization*
(Dependent Variable: Composite Variable of Job and Work-time *Flexibility*^a)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Globalization:</i>								
Foreign sales _{t-1}	0.008*** (0.001)	0.007*** (0.001)			0.012*** (0.001)	0.009*** (0.001)		
FDI _{t-1}	0.235 (0.208)		-0.224 (0.269)		0.476* (0.264)		-0.080 (0.272)	
Trade _{t-1}	-0.044 (0.073)			-0.057 (0.096)	-0.019 (0.072)			-0.057 (0.091)
<i>Work organization:</i>								
Works-Council	1.054*** (0.050)	1.031*** (0.046)	0.846*** (0.074)	1.072*** (0.082)				
Collective Agreement					0.401*** (0.064)	0.371*** (0.051)	0.147*** (0.056)	0.338*** (0.089)
<i>Interaction:</i>								
Globalization*Works-council		0.001 (0.002)	1.312*** (0.310)	0.135 (0.132)				
Globalization *Coll. Agreem.						0.003** (0.001)	1.498*** (0.207)	0.269** (0.136)
<i>Controls:</i>								
Size (1000)	0.331*** (0.051)	0.395*** (0.057)	0.274*** (0.087)	0.250*** (0.078)	0.451*** (0.077)	0.548*** (0.090)	0.369*** (0.114)	0.322*** (0.097)
Location East Germany	-0.009 (0.064)	-0.055 (0.046)	-0.079 (0.051)	-0.021 (0.056)	-0.022 (0.074)	-0.029 (0.051)	-0.081 (0.057)	-0.054 (0.066)
Unskilled prop.	-0.015 (0.083)	-0.008 (0.052)	0.015 (0.057)	0.082 (0.081)	0.015 (0.083)	0.006 (0.054)	0.036 (0.061)	0.090 (0.077)
Production workers prop.	0.139** (0.062)	0.138** (0.055)	0.057 (0.056)	-0.030 (0.090)	0.108* (0.059)	0.042 (0.060)	-0.069 (0.073)	-0.108 (0.101)
Unemployment _{t-1}	0.008 (0.051)	0.064 (0.042)	0.069* (0.038)	-0.006 (0.045)	0.055 (0.049)	0.103** (0.045)	0.106*** (0.037)	0.035 (0.042)
Stand-alone firm	-0.276*** (0.040)	-0.267*** (0.036)	-0.179*** (0.047)	-0.163*** (0.062)	-0.436*** (0.050)	-0.460*** (0.044)	-0.383*** (0.054)	-0.347*** (0.081)
New plant	0.113*** (0.029)	0.112*** (0.022)	0.118*** (0.032)	0.118*** (0.039)	0.038 (0.034)	0.041* (0.024)	0.023 (0.040)	0.036 (0.038)
Public ownership	0.199 (0.123)	0.254*** (0.085)	0.072 (0.088)	0.126* (0.073)	0.465*** (0.123)	0.515*** (0.082)	0.266** (0.107)	0.314*** (0.068)
10 industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,753	9,248	10,282	7,586	5,759	9,247	10,281	7,593
Log pseudo-likelihood	-6,379.9	-9,956.9	-11,366.2	-8,592.2	-6,715.1	-10,474.5	-12,008.9	-9,087.2
Pseudo R-squared	0.16	0.15	0.14	0.14	0.11	0.11	0.09	0.09

Ordered probit coefficients with robust standard errors (in parentheses), clustered over branch. Cuts and industry dummies not shown.

^a Dependent variable is categorical measure of work-time flexibility, ranging from 0 to 3, representing unweighted sum of: fixed-term contract (yes=1; no=0); work-time accounts (yes=1; no=0); temporary work contracts (yes=1; no=0).

* significant at 10%; ** significant at 5%; *** significant at 1% or lower.

Figure One:
Total FDI and *Standard hours* and *Flexibility* (with and without works councils)

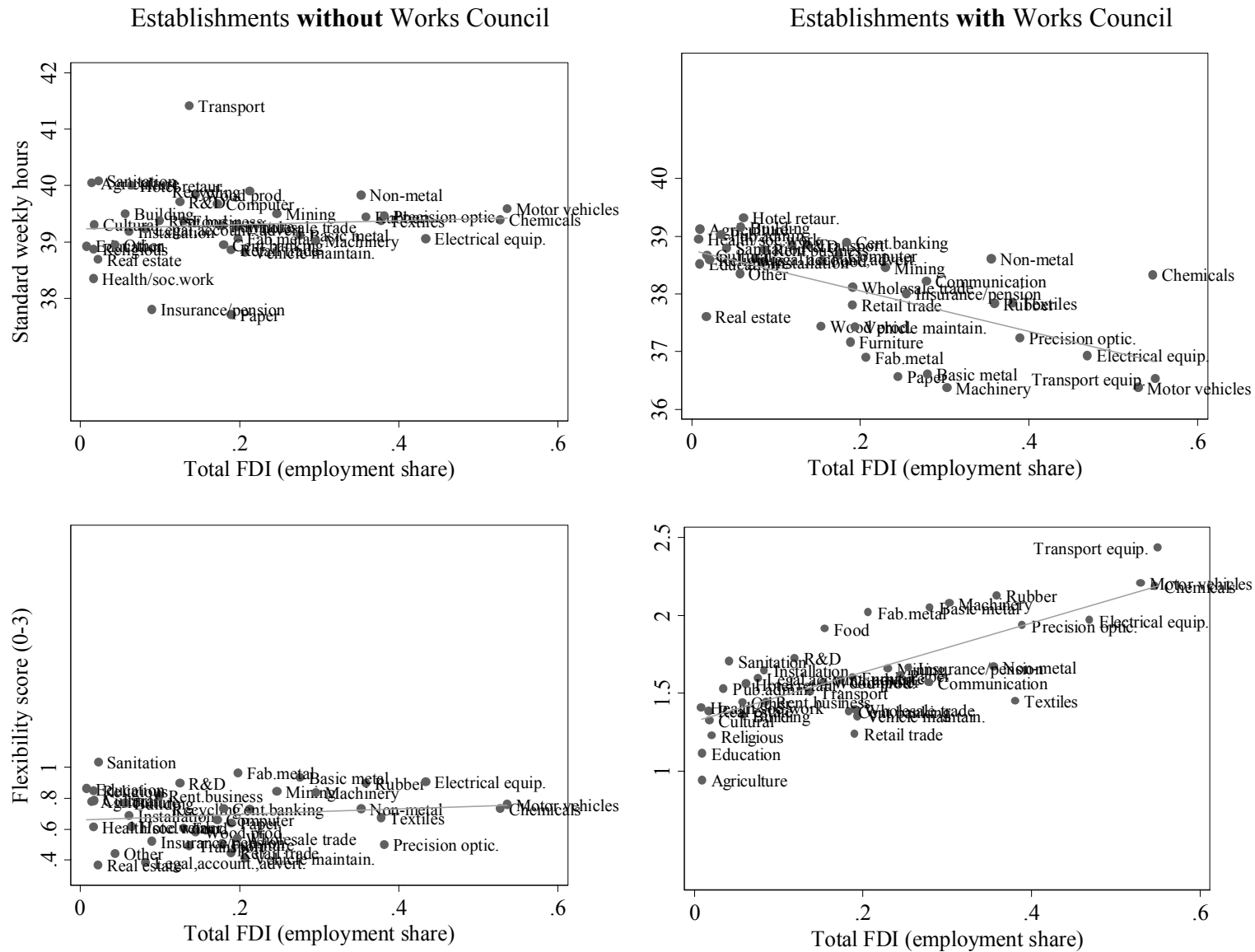


Figure Two: Globalization and Predicted Standard Hours, Conditional upon Incidence of Works Councils

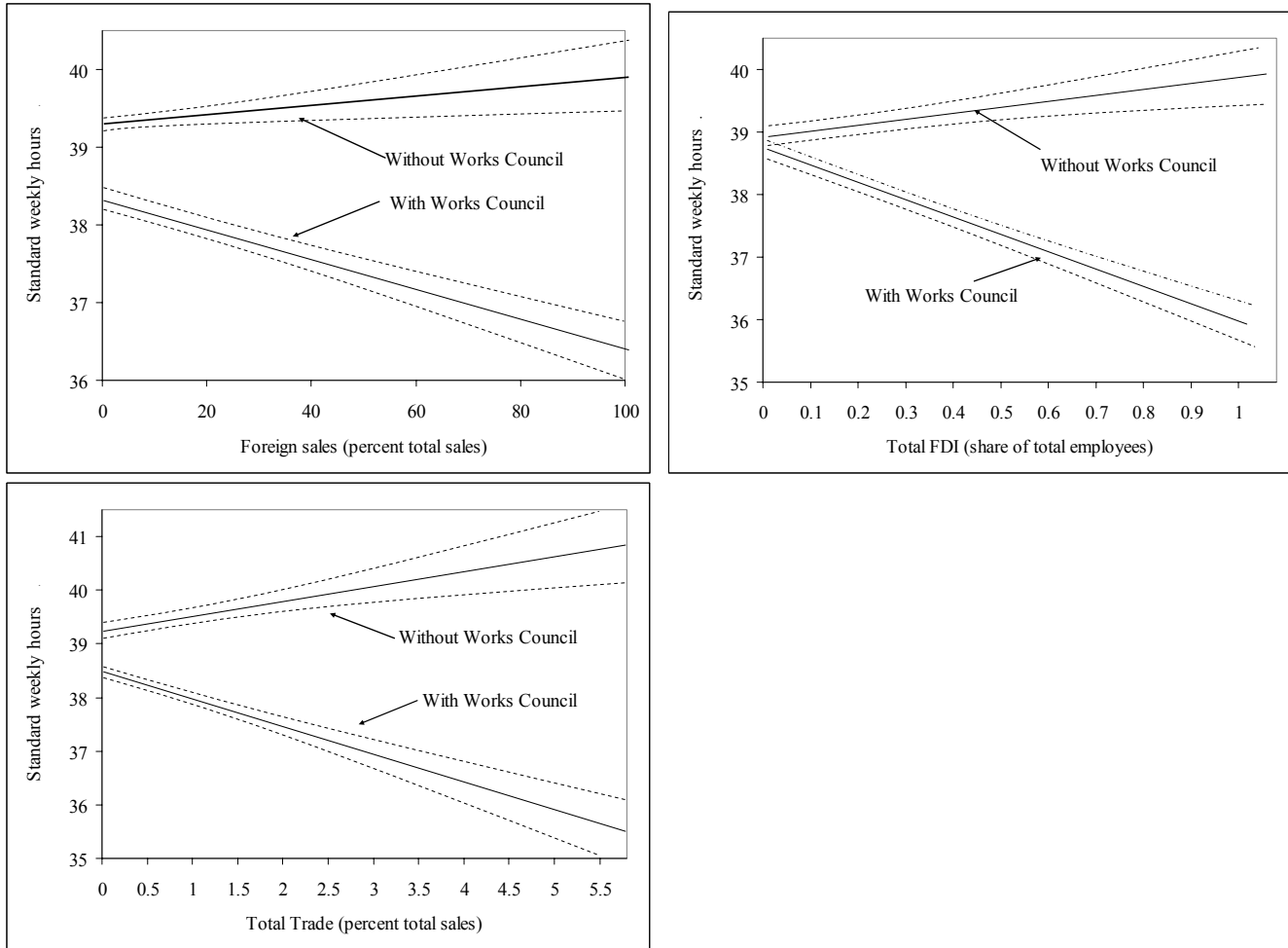
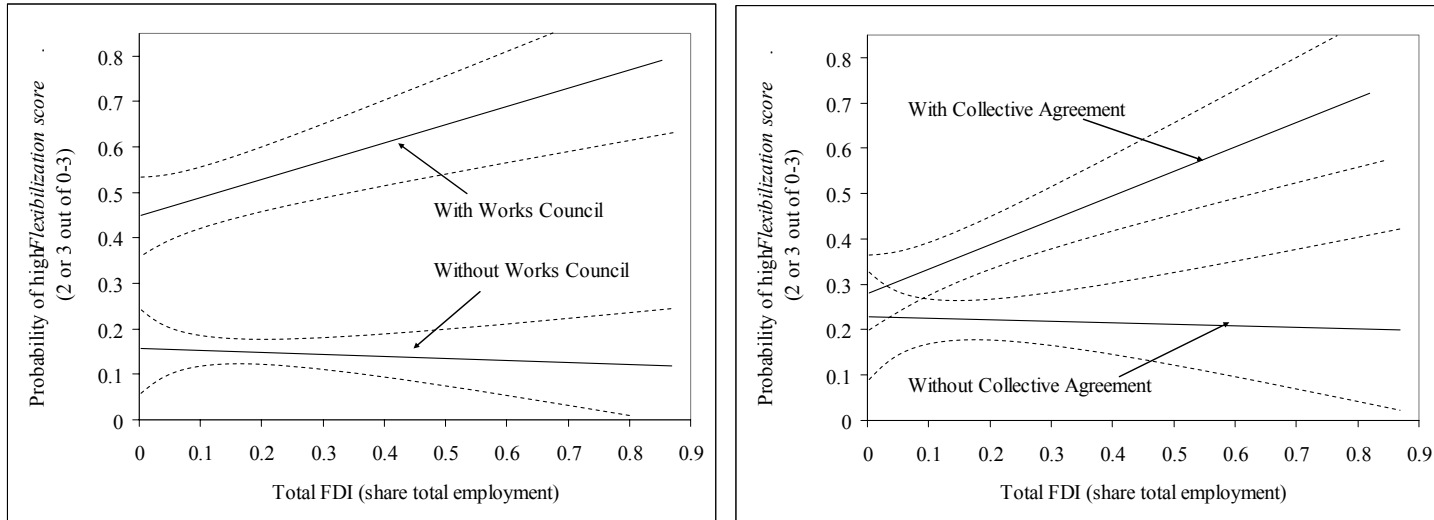


Figure Three: Total FDI and Contract and Work-time *Flexibility*, conditional upon Incidence of Works Councils or Collective Agreements



Appendix One:

Summary Statistics, IAB Enterprise Panel 2002

Variable	Obs.	Mean	Std. Dev.	Min	Max
<i>Standard Hours</i>	12945	38.79396	1.890614	21	56
<i>Flexibility</i>	12997	1.090405	.9297738	0	3
<i>Foreign Sales</i>	9739	8.048978	18.61256	0	100
<i>FDI</i>	10967	.1583518	.1499096	.007	0.815
<i>Trade</i>	8126	.393563	.5488472	.001	5.879
<i>Works Council</i>	12992	.4601293	.498427	0	1
<i>Collective Agreement</i>	12990	.6236336	.4844923	0	1
<i>Size</i>	13032	224.1562	908.7522	5	50524
<i>Location East-Germ.</i>	13032	.3265807	.4689804	0	1
<i>Unskilled prop.</i>	13031	.2215483	.2660179	0	1
<i>Production workers prop.</i>	13031	.4667316	.3448162	0	1
<i>Unemployment</i>	13032	-.2580878	.4520358	-1	0.6
<i>Stand-alone firm</i>	12630	.6543943	.4755842	0	1
<i>Age</i>	12819	.3278727	.4694565	0	1
<i>Public Ownership</i>	12367	.1280828	.3341955	0	1