

Economic Insecurity and the Globalization of Production*

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Preliminary, Comments Welcome

A common claim in debates about globalization is that economic integration increases worker insecurity. Although this idea is central to both political and academic debates about international economic integration, the theoretical basis of the claim is often not clear and critically there is no empirical research that has directly tested the relationship. In this paper, we argue that economic insecurity among workers may be related to deteriorating employment and/or wage interactions with employers and that foreign direct investment is a key factor contributing to this deterioration. We present new empirical evidence, based on the analysis of panel data from Great Britain collected from 1991-1999, that FDI activity in the industries in which individuals work is positively correlated with individual perceptions of economic insecurity. This relationship is evident in cross-sectional specifications for each year of the panel, in a pooled analysis accounting for individual-specific effects, and in a dynamic panel model also accounting for individual-specific effects.

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1. Introduction

Across the world, there appears to be significant opposition to policies aimed at further liberalization of international trade, immigration, and foreign direct investment (FDI). A large number of political events in recent years suggest a marked turn away from liberalization, and many prominent observers have raised alarms about this “globalization backlash.”¹

There is a growing body of research examining what political-economy forces underlie this backlash.² In Scheve and Slaughter (2001 a, b), we documented a strong cleavage between labor-market skills and U.S. public preferences over trade and immigration policy. Less-skilled individuals, measured by educational attainment or wages earned, are much more likely to oppose freer trade and immigration than their more-skilled counterparts. We also found that many other possible cleavages, surprisingly, do not materialize. Across both trade and immigration preferences, no other cleavage is as consistently important as the skills divide. Subsequent research has documented this division in public preferences about international economic liberalization across a wide number of countries though the magnitude of the cleavage varies in predictable ways according to national endowments and labor market institutions (O’Rourke and Sinnott 2001; Mayda and Rodrik 2001; Gabel 1998a, b; Scheve 2000).

In Scheve and Slaughter (2001c) we placed our earlier findings in the context of U.S. wages. The premium earned by more-skilled workers over less-skilled workers has been rising sharply

¹ Examples of political events include public protests at virtually every meeting of international economic institutions beginning with the 1999 WTO meetings in Seattle. In August, 2000, Federal Reserve Chairman Alan Greenspan acknowledged that liberalization efforts have stalled out, with outbreaks of protectionism a distinct possibility: “Despite extraordinary prosperity, the ability to move forward on various trade initiatives has clearly come to a remarkable stall ... there remains considerable unease among some segments [of society] about the way markets distribute wealth and about the effects of raw competition on society ... it is quite imaginable that support for market-oriented resource allocation will wane and the latent forces of protectionism and state intervention will begin to reassert themselves in many countries, including the United States.” (Stevenson 2000).

² See Aldrich et al. (1999a, b), Alt and Gilligan (1994), Anderson and Kaltenthaler (1996), Bailey, Goldstein, and Weingast (1997), Busch and Reinhardt (2000), Cameron (1978), Eichenberg and Dalton (1993), Freeman (1997), Frieden (1991), Friedman (2000), Gabel (1998a, b), Garrett (1998, 2000), Gilligan (1997), Hiscox (1997), Irwin (1994, 1996), Kapstein (1999), Katzenstein (1985), Milner (1987), Quinn and Inclan (1997), Rodrik (1997a, b), Rogowski (1987, 1989), and Verdier (1994) among others.

since the late 1970s. And average real-wage growth in the United States has been very sluggish since the early 1970s. These two facts together mean that less-skilled workers, the majority of the U.S. labor force, have had close to zero or even negative real-wage growth for over a generation. Putting all this together, we argued that the backlash resonates with widespread skepticism among U.S. citizens about globalization, and that these perceptions seem closely connected to the wage pressures that globalization may be imparting on workers.

Although this research has identified some of the key sources of political conflict over international economic liberalization, a number of central questions remain unanswered. Most importantly, debates about globalization frequently involve claims about the impact of integration on individual economic insecurity. The argument most often made is that globalization increases insecurity. Although this claim is central to both political and academic debates about international economic integration, there is no empirical research that has directly tested the relationship. In fact, in many accounts, it is not even clear on what theoretical grounds the claim is made.

Determining the connection between globalization and economic insecurity is important for at least three reasons. First, insecurity speaks to labor market issues other than the level and distribution of wages. There is by now a very large literature examining the role of globalization—in particular, trade and immigration—on the level and distribution of U.S. income. Most academic research has concluded, however, that increased trade and immigration have *not* been the most important forces driving shifts in real and relative wages.³ Another important labor-market development—especially during the 1990s—has been rising economic insecurity, measured either in terms of greater earnings volatility, declining job tenure, or self

reports.⁴ Few existing studies attempt to evaluate what role globalization may play in accounting for recent patterns of economic insecurity and those that do, employ country-level data to study this individual-level phenomenon (Rodrik 1997a, Iversen and Cusack 2000).

Second, the link between international economic integration and insecurity is central to the literature on the impact that globalization may have on the welfare state. One of the primary functions of the modern welfare state, in addition to redistribution, is to provide social insurance (Anderson and Pontusson 2001, Moene and Wallerstein 2001, Iversen and Soskice 2001). Rodrik (1997a), Garrett (1998), and others have argued that while globalization may or may not have affected the ability of nation states to provide generous social insurance, it surely has increased the economic insecurity of individual citizens and thus their demand for insurance. Iversen and Cusack (2000), however, argue that there is little empirical evidence to suggest that international economic integration is a significant source of insecurity in advanced economies and that deindustrialization is the more likely determinant. Again, what empirical evidence that exists in the welfare state literature about the connection between globalization and insecurity is based on country-level macro-economic data. Consequently, the literature on the role of economic integration in the development of the welfare state is lacking a theoretically informed *individual-level* test of the prediction that globalization generates insecurity for which citizens demand compensation in the form of social insurance.

Third, it is of significant interest to evaluate any hypothesized determinant of economic insecurity because it is obviously a negative indicator of individual welfare. Moreover, it is

³ Growth in labor productivity and real wages has been slowest in the service sectors, many of which are nontraded and/or largely domestically owned. And technological change favoring skilled workers seems to have been the major force driving up the returns to skill. For a survey of this literature, see Johnson and Slaughter (2001).

⁴ Gottschalk and Moffitt (1994) report substantial increases in year-to-year earnings volatility for the United States over the 1970s and 1980s. Looking at the 1990s as well, a symposium issue of the *Journal of Labor Economics* (1999) documented declines in U.S. job stability, especially in the 1990s for large groups of workers such as those with more tenure. Within that symposium issue, Schmidt's (1999) analysis of individual surveys finds that U.S. workers in the 1990s were more pessimistic

thought to be a determinant of future health outcomes and of individual political values and policy preferences (Inglehart and Abramson 1994, Inglehart and Baker 2000, Quinn and Woolley 2001, Mughan and Lacy 2001). At the country level, there is even some evidence that economic insecurity undermines democratic institutions and therefore democratic stability (Inglehart 1997).

Thus determining what is the link between globalization and insecurity is crucial to a number of debates in the political economy literature. We focus our theoretical and empirical attention on one particular aspect of economic globalization: FDI. We are interested in FDI for several reasons. One is simply that in recent decades, cross-border flows of FDI have grown at much faster rates than have flows of goods and services or people. UNCTAD (2001) reports that from 1986 through 2000, worldwide cross-border outflows of FDI rose at an annualized rate of 26.2%, versus a rate of just 15.4% for worldwide exports of goods and services. In the second half of the 1990s this difference widened to 37.0% versus just 1.9%. Another is that the impact of FDI on labor markets has been much less researched than has the role of trade and immigration. There is also much less survey evidence about FDI policy preferences than about trade and immigration. We believe that the relative lack of attention to the impact of FDI on labor markets and its subsequent effect on attitudes and preferences is particularly unfortunate because it is the multinationalization of production which a number of scholars have pointed to as the distinguishing feature of the current phase of globalization compared to previous historical periods (Bordo, Eichengreen, and Irwin 1999).

In this paper, we clarify theoretically how globalization increases individual economic insecurity in advanced economies. We argue that FDI by multinational enterprises (MNEs) is a critical mechanism through which globalization generates economic insecurity. In particular, we

about losing their jobs than they were during the 1980s. A wide range of surveys have found evidence of rising U.S. job insecurity over the 1990s relative to earlier decades, despite the ongoing economic expansion (e.g., Bronfenbrenner 2000).

observe that economic insecurity among workers may relate to deteriorating employment and/or wage interactions with their employers. These ideas can be formalized in standard frameworks of labor economics in terms of either rising elasticities of demand for labor and/or declining profit/risk-sharing opportunities. And greater cross-border flows of FDI by MNEs are a key force that is likely both to raise elasticities and lower profit/risk sharing.

Most importantly, this paper provides the first direct empirical test at the individual level of the relationship between the multinationalization of production and the economic insecurity of individual workers. We present new evidence, based on the analysis of panel data from Great Britain collected from 1991-1999, that FDI activity in the industries in which individuals work is positively correlated with individual perceptions of economic insecurity. This correlation holds in cross-sectional specifications for each year of the panel, in a pooled analysis accounting for individual-specific effects, and in a dynamic panel model also accounting for individual-specific effects.

There are four remaining sections to the paper. The next section provides a theoretical framework for the economics of worker insecurity. Section 3 describes the data to be used in the study and the econometric models to be estimated. Section 4 reports the empirical results and the final section concludes.

2. Theoretical Framework for the Economics of Worker Insecurity

Although there are a number of alternative definitions of economic insecurity, most often it is understood to be an individual's perception of the risk of economic misfortune (Dominitz and Manski 1997). Consequently, researchers have focused on the risk of events such as the loss of health insurance, being a victim of a burglary, losing a job, and significant decreases in wages. Some analysts have usefully distinguished between *perceptions* of the risk of such events and the

actual *anxiety and stress* caused by the risk (Anderson and Pontusson 2001, Gardner and Oswald 2001). For our research this distinction is very important because, as will be discussed below, our key measure of economic insecurity addresses most directly the anxiety/stress dimension. Consistent with many researchers in this area, we will assume that perceptions of risk do generate anxiety, and thus that our stress/anxiety measure is linked to the perceptions of economic misfortune. There are likely individual characteristics and environmental factors that influence this link (OECD 1997, Anderson and Pontusson 2001), and one important task for our empirical analysis will be to address this.

It is likely that most people's perceptions of economic insecurity depend heavily on their purchasing power, which in turn depends on both their asset ownership and their labor-market status—both employment and income earned therefrom. In reality, the large majority of people rely much more on labor income than capital income for purchases; accordingly, we think labor-market status is the main determinant of perceptions of economic insecurity.

With this labor-market focus, we conjecture that the economic misfortunes underlying people's economic insecurity involve deterioration in employment and/or wage interactions with their employers. As mentioned in the introduction, many countries have recently experienced outcomes consistent with this, such as declining job tenure. At the micro level, these ideas can readily be formalized in standard frameworks of labor economics in terms of either rising elasticities of demand for labor and/or declining profit/risk-sharing opportunities. Greater cross-border flows of FDI by MNEs are key forces that are likely both to raise elasticities and lower profit/risk sharing. In this section we briefly present the economics of FDI, labor-demand elasticities, and profit sharing.

Before doing this, we want to emphasize that elasticities and profit sharing are dimensions of labor-force attachment distinct from the competitive base wage individuals can earn. This is important, because a number of studies—of both developed and developing countries—have found that establishments owned by MNEs pay higher wages than do than domestically owned establishments, even controlling for a wide range of observable worker and/or plant characteristics such as industry, region, and overall size.⁵ What accounts for this “multinational wage premium” remains unknown, largely because this cross-sectional evidence is consistent with several alternative stories. Below we will discuss some possibilities.

All else equal, this premium is likely to make individuals prefer working for MNEs and, thanks to the higher income, make multinational employees feel *more* economically secure. Our focus on elasticities and profit/rent sharing highlights MNE influences on labor-market outcomes other than base wages, influences all of which we think quite plausibly co-exist. The fact that MNEs may pay higher base wages is not inconsistent with the fact that MNEs may also alter elasticities and profit sharing. Our analysis will need to account these various influences.

2.1 *The Economics of Labor-Demand Elasticities and FDI*

Hamermesh (1993) summarizes what determines a firm's equilibrium own-price labor-demand elasticity with "the fundamental law of factor demand" (p. 24). Modifying his notation slightly, here is the law.

$$(1) \eta_{LLj} = -[1-s]\sigma_{LL} - s\eta_j$$

In (1), η_{LLj} is firm j 's own-price labor-demand elasticity; s is labor's share of firm total revenue; σ_{LL} is the constant-output elasticity of substitution between labor and all other factors of

⁵ For example, Howenstine and Zeile (1994) and Doms and Jensen (1998) document these wage differentials among U.S. manufacturing plants. Griffith (199) presents similar evidence for the United Kingdom; Globerman, et al (1994) for Canada; Aitken et al (1996) for Mexico and Venezuela; and Te Velde and Morrissey (2001) for five African countries.

production; and η_j is the product-demand elasticity for firm j 's output market. The variables s , σ_{LL} , and η_j are all defined to be positive, such that η_{LLj} is defined to be negative. In words, η_{LLj} tells the percentage fall in the quantity of labor demanded by firm j in response to a one-percent increase in the price of labor. The larger (in absolute value) is η_{LLj} , the more that firm j responds to wage increases by demanding fewer workers—i.e., the more elastic is firm j 's labor demand.

As written in (1), η_{LLj} consists of two parts. The first, $-[1-s]\sigma_{LL}$, is the "substitution effect." It tells, for a given level of output, how much the firm substitutes away from labor towards other factors when wages rise. This term $-[1-s]\sigma_{LL}$ is often called the *constant-output* labor-demand elasticity, distinct from the *total* elasticity η_{LLj} . The second part of (1), $-s\eta_j$, is the "output effect" or "scale effect." It tells how much labor demand changes after a wage change thanks to the change in the firm's output. Higher (lower) wages imply higher (lower) costs and thus, moving along the product-market demand schedule, lower (higher) firm output. When wages rise, both the substitution and scale effects reduce labor demand. The firm substitutes away from labor towards other factors, and with higher costs the firm produces less output such that it demands less of all factors, including labor. Thus, $\eta_{LLj} < 0$: labor demand slopes downward.

Standard models in international trade predict that greater FDI by MNEs should make labor demands more elastic through both the scale and substitution effects. This should make workers feel more insecure, as any given wage increase now generates larger cuts in labor demand and thus greater chances of layoffs for each worker. Consider each of the two effects in turn.

Many models predict that FDI and its related international trade make a country's product markets more competitive (i.e., increase η_j) and thus labor demands more elastic.⁶ For example,

⁶ Differentiation of (1) with respect to η_j shows that as product demand becomes more elastic (i.e., η_j rises), so does labor demand (i.e., η_{LLj} falls). The larger is labor's share in costs and revenue, the stronger is the pass-through from η_j to η_{LLj} . This

liberalization of FDI policies can force domestic firms to face heightened foreign competition. Or developments abroad related to MNEs (e.g., capital accumulation via FDI) can be communicated to domestic producers as more-intense foreign competition.

Different models predict different magnitudes for η_j . One example is a monopolistically-competitive industry producing for Dixit-Stiglitz consumers who value product variety (e.g., Helpman and Krugman, 1985). Here the representative firm is usually assumed to face a demand elasticity (greater than one) that equals the elasticity of substitution (EOS) among product varieties in consumers' utility function. But the actual demand elasticity is only approximately equal to the EOS. It equals EOS plus a second term, $\frac{(1-\text{EOS})}{N}$, where N is the number of firms in the industry. As N rises—thanks, for example, to FDI by foreign MNEs— η_j rises.

The second way through which FDI can increase η_{LLj} is through σ_{LL} , the constant-output elasticity of substitution between labor and all other factors.⁷ Suppose that a firm is vertically integrated with a number of production stages. Stages can move abroad either within firms as multinationals establish foreign affiliates (e.g., Helpman 1984) or arm's length by importing the output of those stages from other firms (e.g., Feenstra and Hanson 1997). Globalization of production thus gives firms access to foreign factors of production as well as domestic ones, either directly through foreign affiliates or indirectly through intermediate inputs. This expands the set of factors firms can substitute towards in response to higher domestic wages beyond just domestic non-labor factors to include foreign factors as well. Thus, greater FDI increases σ_{LL} .

effect of trade on labor demand is an application of one of the four Hicks-Marshallian laws of factor demand: "The demand for anything is likely to be more elastic, the more elastic is the demand for any further thing which it contributes to produce" (Hicks 1964, p. 242).

⁷ Differentiation of (1) with respect to σ_{LL} shows that as this substitutability increases labor demand becomes more elastic (i.e., η_{LLj} falls). Also, the smaller is labor's share in the firm's costs and revenue, the stronger is the pass-through from σ_{LL} to η_{LLj} . Given σ_{LL} , higher wages trigger larger changes in the quantity of labor demanded the less important labor is in total costs.

We think that more-elastic labor demands make workers feel less secure: for any given wage increase, firms reduce their quantity of labor demanded by greater amounts. It is important to note that as labor demands become more elastic, policy changes in and/or shocks to labor markets can make workers feel less secure for additional reasons (see Rodrik 1997a). One is that higher elasticities shift the wage and/or employment incidence of non-wage labor costs (e.g., payroll taxes) towards labor away from employers. A second is that higher elasticities trigger more-volatile responses of wages and/or employment to any exogenous shock to labor demand.

It is also important to note, as Rodrik (1997a) and others have emphasized, that changes in elasticities need not be accompanied by changes in wages. For our purposes, this means that demands could grow much more elastic without any change in any multinational wage premium. Indeed, one possible explanation of this premium may be a compensating wage differential for the greater risk of job separation because MNEs have more elastic labor demands than purely domestic firms do. We return to this possibility below when discussing our empirical method.

2.2 The Economics of Profit Sharing, Bargaining Power, and FDI

More-elastic labor demands formalize the idea that workers perceive deteriorating employment conditions. But elasticities consider the interaction between workers and firms for some exogenously given changes in wages. To the extent that labor markets are not perfectly competitive, wage changes themselves will depend on the interaction between workers and firms—and thus may be an additional source of worker insecurity. To formalize this idea, we turn to the idea of workers and firms bargaining over profit sharing.

There is a large literature in labor economics that has documented a robustly positive correlation between wages for various micro-units—firms, individuals, union-firm bargaining units—with profits per worker at the level of that micro-unit's firm and/or industry. These

profits are interpreted as “prosperity in the product market” (Oswald 1996, p. 16) enjoyed by firms and available for sharing with workers. This empirical evidence suggests that workers do not earn just their competitively determined marginal revenue product, but rather some amount above that based on negotiations with firms.

The notion of profit sharing between workers and their firm can be easily formalized in a Nash bargaining framework. Consider a situation in which risk-neutral workers enjoy some negotiating power, ϕ , for bargaining with their risk-neutral firm over their wage, w . In a Nash setting, the maximization problem for the negotiation is given by

$$(2) \text{Maximize } \phi \log\{[u(w) - u(w_o)]n\} + (1 - \phi) \log(\pi - \pi_o) ,$$

where $u(w)$ is worker utility from wage w ; w_o represents the outside wage available to workers if bargaining breaks down; n is the number of workers; π is profits defined as firm revenue less its wagebill; and π_o represents the outside option available to the firm if bargaining breaks down. Expression (2) is maximized over the choice variables of w and n ; the resulting first-order condition for wages can be written as the following expression for the negotiated wage outcome.

$$(3) \quad w \approx w_o + \left(\frac{\phi}{1 - \phi} \right) \left(\frac{\pi - \pi_o}{n} \right)$$

The equilibrium wage depends on the outside wage option and on profits per worker, where the pass-through of profits to wages depends on relative bargaining power. Thus, workers earn their competitive wage plus some amount of firm profits above and beyond the firm’s outside option. The globalization of production through MNEs is likely to affect this equilibrium wage through either lowering ϕ and/ or raising π_o . Consider each in turn.

Most studies of profit sharing simply assume to be constant ϕ , the key parameter of the bargaining power of workers relative to firms.⁸ But in reality, it is very plausible that greater FDI activity for MNEs lowers ϕ . As discussed above, the globalization of production through FDI gives firms greater access to foreign factors of production, either directly through hiring foreign labor or indirectly through purchasing foreign-made intermediate inputs. It is very likely that this greater access strengthens firms' bargaining position relative to domestic workers. For example, greater access to foreign factors of production may reduce ϕ by capping the wage firms will pay domestic workers without boosting demand for these foreign factors.

Most studies of profit sharing also assume that π_0 equals zero; i.e., that in the absence of a wage bargain the firm cannot produce any output and thus cannot earn any profits. This may be the case for a closed economy where a firm has access to only domestic workers. But a multinational firm, by definition, has the option of producing and thus earning profits in more than one country. The more easily an MNE can structure production across countries—e.g., thanks to foreign liberalization of FDI access—the higher π_0 is likely to be. With this escalation of the threat point of firms, workers feel pressure in terms of fewer profits to be bargained over.

Overall, workers are likely to perceive greater economic insecurity from either falls in ϕ and/or increases in π_0 . In either case—falling bargaining power over some given amount of negotiable profits and/or falling amounts of these negotiable profits themselves—workers are likely to perceive deteriorating wage relations with their firms and thus feel less secure.⁹

⁸ For example, Svejnar (1986, p. 1057) motivates his analysis by assuming “an exogenously determined force which affects positively the party's ability to realize a gain over and above the disagreement outcome.”

⁹ Sutton (1986) presents the basic ideas of non-cooperative bargaining theory, of which the above labor negotiations are an example. Shaked and Sutton (1984) show how labor negotiations can result in involuntary unemployment; there, our notion of FDI by MNEs giving firms more leverage over domestic workers generalizes as the notion that outsiders (for us, foreign factors of production) may represent a greater threat to insiders (for us, domestic workers).

As with rising elasticities, we note that this process can be entirely consistent with multinational wage premia. The evidence on these premia is entirely cross sectional, and cannot rule out the possibility that, while still positive, they have been narrowing over time. Even as the nature of profit sharing shifts, MNEs may still pay a higher base wage, w_o , for reasons such as unobserved worker quality or superior MNE production technology.

We conclude this discussion of profit sharing by noting that equation (3) is actually quite general. It obtains from many wage-setting situations other than Nash bargaining. It can be derived from a perfectly-competitive setting in which short-run labor-mobility frictions make the labor-supply schedule slope upward; or from a labor-contract model in which both workers and firms are risk-averse, and thus optimally share profits in boom times; or from various models of fairness in which not sharing profits is perceived to be somehow unjust (e.g., Blanchflower et al, 1996). The risk-sharing interpretation is particularly relevant for our interest in worker insecurity. Here, the degree of pass-through from profits to wages depends not just on bargaining power but also on the degree of risk aversion of workers and firms.¹⁰

To summarize, standard economic models of labor markets suggest that the globalization of production via MNEs should both increase labor-demand elasticities and reduce labor bargaining power in profit sharing. And there is empirical evidence that FDI by MNEs actually does generate these labor-market impacts.¹¹ To the extent that people regard these shifts as changes for the worse, as we have argued is plausible, then multinationals should be a force contributing to greater worker insecurity. We now turn to our empirical tests of this prediction.

3. Data Description and Empirical Specification

¹⁰ See McLaren and Newman (2001) for preliminary theoretical research on the link between globalization and risk-sharing.

¹¹ The idea that FDI by MNEs contributes to more-elastic factor demands has empirical support in Slaughter (2001) and Haskel and Slaughter (2002). As for profit sharing, Budd and Slaughter (2001) find that the degree of bargaining power over profit sharing varies across nationality of ownership.

3.1 Data Description

The objective of our empirical work is to examine the impact of international capital mobility on economic insecurity. Specifically, we evaluate how individual self-assessments of economic insecurity correlate with the presence of highly mobile capital in the form of FDI in the industries in which individuals work. Our data cover Great Britain, which we think is an excellent case to examine both because inward and outward FDI have long figured prominently in the overall UK economy and because of the high quality of data available.

The individual data are from the *British Household Panel Survey* (BHPS) (2001). This study is a nationally-representative sample of more than 5,000 UK households and over 9,000 individuals surveyed annually from 1991 to 1999.¹² It records detailed information about each respondent's perceptions of economic insecurity, employment, wages, and many other characteristics. The most important pieces of survey information required for our analysis is a measure of economic insecurity, identification of the respondents' industry of employment, and repeated measurement of the same individual over time.

We measure economic insecurity by responses to the following question asked in each of the nine years of the panel.

“I'm going to read out a list of various aspects of jobs, and after each one I'd like you to tell me from this card which number best describes how satisfied or dissatisfied you are with that particular aspect of your own present job—job security.”

The ordered responses are on a seven-point scale ranging from “not satisfied at all” to “completely satisfied.” As discussed in the previous section, economic insecurity is most often in the literature understood either to be an individual's perception of the risk of economic misfortune and/or to be the anxiety or stress caused by the risk. We interpret our BHPS question

¹² The BHPS is ongoing but our data are through 1999 only.

as measuring the latter concept, as it has individuals report on their (dis)satisfaction with job security rather than on job security per se.

As discussed in Section 2, we follow previous studies in assuming that perceptions of economic insecurity generate anxiety or lack of satisfaction, and thus that our BHPS question correlates with individual economic insecurity. Individual characteristics and environmental factors probably influence this link (OECD 1997, Anderson and Pontusson 2001). Specific to our focus on MNEs, we think that if MNEs do in fact contribute to greater economic insecurity via elasticities and/or profit sharing, then the extent to which individuals self-report anxiety from these forces may vary across individuals due to the multinational wage premium. For any given amount of “true” underlying economic insecurity, it is likely that individuals working for MNEs who enjoy this wage premium feel less anxious about that insecurity. Different individuals may balance all these labor-market dimensions of MNEs differently when given the BHPS question.

All this suggests that our specification of the econometric analysis below will have to account for these differences in how individuals assess the impact of FDI activity on their economic insecurity. In general, we will want to control for this heterogeneity arising from issues such as the wage premium by direct measurement and/or by exploiting the panel aspect of the data. As will be shown, we use a combination of both.

Using our BHPS question, we constructed the variable *Insecurity* by coding responses in the reverse order from the original question with a range from 1 for individuals who give the response “completely satisfied” to a 7 for those individuals giving the response “not satisfied at all”. Thus higher values of *Insecurity* indicate less satisfaction with job security.

Our theoretical framework hypothesizes that high FDI activity in industries generates economic insecurity among workers in those industries. To test this hypothesis, we constructed

the variable *FDI* to measure FDI exposure. We obtained data about inward and outward FDI investment positions in all 2-digit 1992 Standard Industry Classification (SIC92) industries for the UK from 1991 to 1999.¹³ Since the BHPS records the industry the respondent is employed in according to the 1980 Standard Industry Classification (SIC80), we concorded the FDI data to 2-digit SIC80 industries.¹⁴ We then merged the industry-level FDI data with the BHPS survey.

The variable *FDI* is a dichotomous variable that we set equal to one if two conditions were met: if the industry had any positive FDI investment, inward or outward, and if the industry's activities do not require producers and consumers to be in the same geographic location. If either of these conditions were not met, we coded the variable equal to zero. Exposure to FDI activity is increasing in the variable *FDI*, and so we expect it to be positively correlated with the dependent variable *Insecurity*. This is the central hypothesis of our analysis.

Our logic in defining *FDI* using two conditions runs as follows. The first condition for an individual's industry of employment to have positive FDI investment is straightforward. Any inward or outward FDI activity satisfies this. The second condition recognizes that FDI activity is unlikely to alter labor-demand elasticities or profit sharing if business activities cannot be outsourced across countries because the consumer and producer must be in the same geographic location. Consider the examples of wholesale trade, retail trade, and personal services (e.g., haircuts). The large majority of business activities in these industries require the co-location of producers and consumers: customers interacting with sales clerks, or sitting in the barber's chair. The notions of economic insecurity related to FDI that we discussed in Section 2 depend on the ability of MNEs to shift business activities across countries. In reality, in many industries FDI

¹³ This data was obtained directly from the Office of National Statistics. We thank Simon Harrington for his assistance in generating this data.

¹⁴ The BHPS records industry of employment according to the SIC80 classification scheme in all years but does report this information according to the SIC92 system in two years.

does not have this characteristic; indeed, this FDI arises precisely because foreign customers cannot be served at a distance via international trade. Accordingly, we construct our *FDI* variable to identify not all industries with FDI, but instead only those industries with FDI in which business activities can be outsourced across countries—and thus in which FDI activity is likely to generate economic insecurity via shifts in elasticities and/or profit sharing. So industries such as wholesale trade, retail trade, and personal services we coded as zero.

It is important to recognize the level of aggregation for the *FDI* regressor. The 2-digit SIC80 level used in the analysis is dictated by the FDI data available from the UK Office of National Statistics. Theoretically, we could imagine a more specific FDI exposure regressor that indicated FDI activity at the level of the respondent's company, rather than at the more-aggregated industry level.¹⁵ Our specification implicitly mixes the FDI activity of firms within each industry and thereby assumes that within each industry the individual perceives any threat from FDI equally regardless of whether s/he works for a firm with foreign investment activity. This assumption seems reasonable. In high-FDI industries, for example, it is likely that even the employees at purely domestic firms still perceive high FDI presence. This is broadly consistent with the common argument in the profit-sharing literature that wage bargaining keys off of industry profits above and beyond firm considerations.

Given that our dependent variable measures the anxiety generated by economic insecurity, rather than that economic insecurity per se, it is critical that we control for differences among individuals in the link between the risk of economic misfortune and the stress caused by such risk as well as for other sources of economic insecurity. Previous research has suggested that there is systematic variation in perceptions of economic insecurity across demographic groups.

¹⁵ Of course, this only a theoretical possibility as even if we had the firm-level FDI data, the BHPS does not identify the respondent's firm.

For the issue of MNE-related security in particular, we have discussed the need to control specifically for individual heterogeneity in balancing FDI's different labor-market impacts.

For our baseline cross-sectional analysis, we constructed four standard controls. The variable *Income* is equal to annual household income in thousands of UK pounds.¹⁶ *Education* is a categorical variable ranging from one to four, with higher values indicating increasing educational attainment.¹⁷ The variable *Gender* is equal to one for female respondents and zero for males. Finally, the variable *Age* equals the respondent's age in years at the time of the survey. We consider *Income* to be an especially important variable, as it directly controls for the MNE wage premium that may influence the extent of anxiety from FDI-related insecurity.

Although each of these control variables is likely to account for some of the differences among individuals in perceptions of economic insecurity generally and in the link between the risk of job misfortune and the resulting anxiety generated in particular, it must be acknowledged that other unmeasured or perhaps unobservable differences among individuals might also matter. For example, individuals almost surely vary in their degree of risk aversion. In addition, individuals probably vary in their interpretation of the BHPS question. For example, one individual may think about job security in compensated terms and assess satisfaction with job security conditional on their wages and any perceived compensating wage differential. Another individual in otherwise similar circumstances may respond without conditioning in this manner.

Unmeasured or unobservable individual heterogeneity is, of course, a problem that faces all survey research but it seems particularly acute in this analysis where our key variable to be explained is answers to a question that permits substantial variation in interpretation. To address

¹⁶ Annual household income is a variable calculated by the BHPS to include income from all sources in the twelve months prior to the September of the survey year as virtually all of the fieldwork for each survey year is done from September to December. The BHPS does impute some data in constructing this variable.

¹⁷ For example, category one indicates no qualifications or still in school and no qualifications, and category four includes teaching qualifications, first degree, or higher degree.

this heterogeneity, above and beyond our demographic controls we will exploit the panel structure of our data. In particular, in some specifications we will model individual-specific effects for each respondent.

For each year of our panel, Table 1 reports summary statistics of our measure of economic insecurity and explanatory variables. The average score on the insecurity scale is just below 3 in most years, suggesting that the average respondent was fairly satisfied with his or her job security. It is important to note that the number of observations in each year is much less than the more than 9,000 respondents in the full BHPS sample. The summary statistics and the analyses reported below are based on private sector, full-time workers who are not self-employed. It is for this group of workers that our theoretical framework most directly applies. We will discuss the robustness of the results for larger samples at the end of Section 4. Finally, Table 2 lists the two-digit SIC80 industries in 1991 that satisfied the two conditions for a FDI exposed sector in the construction of *FDI*, our key explanatory variable. These industries both had positive FDI investment and involve business activities in which producers and consumers need not co-locate. Among FDI industries in 1991, the sector with the most respondents in the BHPS was mechanical engineering.

3.2 *Econometric Models*

The main objective of the empirical work is to estimate the effect of FDI activity on individual economic insecurity. By matching each BHPS observation with the relevant industry FDI information, we examine how self-assessments of economic insecurity relate to FDI activity. The starting point of our analysis is to examine cross-sectional variation in economic insecurity for each year of the panel. Our cross-section analysis can be formalized as follows,

$$Insecurity_i = \alpha + \beta FDI_i + \gamma Z_i + \varepsilon_i \quad (4)$$

where the subscript i indexes individuals; $Insecurity_i$ is our measure of economic insecurity; FDI_i is our measure of FDI presence; the vector Z_i is our set of control regressors discussed above; α , β , and γ are parameters to be estimated; and ε_i is an additive error term. We treat our measure of individual economic insecurity as a normally distributed random variable, and estimate the parameters in the equation using ordinary least squares regression with heteroskedastic consistent standard errors. Our coefficient estimates of β will tell us whether and to what extent individual perceptions of economic insecurity are correlated with FDI activity. Thus, our central null hypothesis is that $\beta = 0$, with the alternative $\beta > 0$.

Estimating the effect of FDI on insecurity using period-by-period cross-sectional regressions is, however, inefficient because it fails to take advantage of all the information available in panel data sets (Wawro 2002, Yoon 2000, Hsiao 1986). Pooling the data across the years of the panel has obvious advantages but generates a number of estimation issues regarding individual heterogeneity. Since the same respondents are surveyed over time, it is likely that observations for the same individual will be more similar than observations across different individuals. This might be in part because there is persistence in an individual's perceptions of economic insecurity, or because there are unmodelled characteristics about the individual that cause them to have similar perceptions in each period. This is particularly pertinent to our analysis because, as discussed above, there are good reasons to think that there are unobserved factors that may affect perceptions of economic insecurity. We can model this heterogeneity by revising the cross-sectional equation for the pooled data,

$$Insecurity_{it} = \alpha_i + \beta FDI_{it} + \gamma Z_{it} + \varepsilon_{it} \quad (5)$$

where the variables and parameters are the same as in Equation 4 but now each observation is indexed by i and t , for individuals and years. Further, α is allowed to vary across individuals to

model unmeasured or unobserved heterogeneity across respondents, and Z now includes dichotomous indicator variables for each year of the survey. Equation 5 can be estimated by employing random- or fixed-effects estimators. The random-effects estimator generates consistent parameter estimates if the individual effects, α_i , are uncorrelated with the explanatory variables. The fixed-effects estimator is also consistent under this assumption, but is less efficient. Under the alternative hypothesis that the individual effects, α_i , are correlated with the explanatory variables only the fixed-effects estimator is consistent. We use both methods to estimate Equation 5, and present a specification test suggesting greater confidence in the validity of the fixed-effects results.

Although modeling individual-specific effects is one way of accounting for persistence in panel data, it does not allow us to differentiate between the idea that persistence in observations of insecurity are accounted for by the influence of past experiences of insecurity on present perceptions and the alternative that some types of individuals just have unobserved characteristics that lead them to have certain types of perceptions (Green and Yoon 2002, Wawro 2002). To make this assessment and to verify the robustness of our estimates of β , it is necessary to add a lag of the dependent variable to the specification in Equation 5. The final model we estimate in this paper is

$$Insecurity_{it} = \rho Insecurity_{it-1} + \alpha_i + \beta FDI_{it} + \gamma Z_{it} + \varepsilon_{it} \quad (6)$$

where ρ is the coefficient on the lag of the dependent variable. This specification is a dynamic panel model. Introducing a lag of the dependent variable to the equation generates correlation between the individual-specific effects, α_i , and the lag of the dependent variable, $Insecurity_{t-1}$. Consequently, this equation clearly cannot be estimated using random effects. Moreover, when the number of periods is small, as in our data, the fixed-effects estimator is also biased and

inconsistent in the presence of a lagged dependent variable. Wawro (2002) reviews a number of alternative estimators for this situation, some of which first-difference Equation 6 to deal with individual-specific effects and then use instrumental variables to address the correlation between the error term and lagged dependent variable generated by the initial transformation of Equation 6. We use the Arellano-Bond generalized method of moments estimator, and report a number of diagnostics to evaluate the assumptions required for valid application of this approach.

4. Empirical Results

The main empirical question in this paper is whether FDI activity generates perceptions of economic insecurity among individual workers. Table 3 reports the results of our cross-sectional analysis. These results are ordinary least squares coefficient estimates for the parameters in Equation 4, with heteroskedastic consistent standard errors. The key finding is that FDI activity is positively correlated with individual economic insecurity. Holding other factors constant, individuals employed in FDI sectors systematically report less satisfaction with their job security. The coefficient estimate for the variable *FDI* ranges between 0.240 (with a standard error of 0.057) in 1997 to 0.397 (with a standard error of 0.071) in 1993. In every year, the estimated parameter is significantly different from zero at at least the 99% level. Although there is some variation across years in the size of the estimate, in most years it is very close to 0.30 and no trend is evident. Substantively, it generally has the largest effect of any of the regressors. We regard the cross-sectional estimates in Table 3 to be strongly consistent with the hypothesis that FDI activity generates economic insecurity among workers.

The results in Table 3 for the demographic control variables are also of interest. Older and more educated respondents are generally less satisfied with their job security than those who are younger and less educated. The education effect may be related to the “aspiration effect”

documented in previous studies of general job satisfaction: more educated workers are thought to expect more from all aspects of their jobs, perhaps including job security. The results also indicate that women are more satisfied with their job security than men. This difference, while statistically significant in all years, declines in magnitude over time. Finally, the estimates in Table 3 indicate an unstable relationship between household income and economic insecurity. The only statistically significant estimates are in the negative direction, consistent with the idea that wealthier households are able to insure themselves against the risks of job separation so are more likely to be satisfied with their job security. This result, however, is evident in the data in only three of the nine years of the panel.

Despite the robustness of the correlation between *FDI* and our measure of economic insecurity, there are number of reasons to be concerned about the validity of these inferences. The period-by-period cross-sectional analysis is inefficient. Further, and more importantly, unmeasured and perhaps unobservable differences among individuals are very likely correlated with both perceptions of economic insecurity and the propensity to be employed in a *FDI* exposed sector—correlations which would bias cross-sectional parameter estimates. These issues were discussed in detail in Section 3.

To address these issues, we pooled the panel data sets and explicitly modeled individual-specific effects as in Equation 5. Table 4 reports the results of the random-effects and fixed-effects estimators of this equation.¹⁸ For both estimators, the main substantive finding is, as in Table 3, a continued positive correlation between *FDI* and the dependent variable *Insecurity*. The magnitude of the estimated effect, however, is over twice as large in the random effects

¹⁸ In results not reported, we included the demographic control variables *Gender*, *Education*, *Age*, and *Income* in the random effects specification and *Education*, *Age*, and *Income* in the fixed effects model (*Gender* is time invariant so cannot be included in the fixed effects model). All the results for the *FDI* parameter are robust to retaining these variables. They were dropped because the parameters for these regressors are all not significantly different from zero in our preferred specification in the dynamic panel reported below.

specification. A full set of time-period indicator variables were included in both specifications. The coefficients for these variables indicate whether mean levels of insecurity deviated in each year from the base year 1991. The parameter estimates are negative for every year except 1992, and turn significantly negative after 1995. This pattern indicates that average levels of insecurity were lower in later years. It is broadly consistent with the pattern of UK macroeconomic performance over the 1990s: initial recession followed by increasingly strong economic growth.

Although the main substantive story is the same across the two specifications in Table 4, it is still necessary to determine our relative confidence in the two models. Recall that both estimators are consistent if the individual-specific effects, α_i , are uncorrelated with the explanatory variables, but that the random-effects estimator is more efficient. However, if this assumption does not hold then only the fixed-effects estimator is consistent. This relationship between the two estimators suggests the Hausman specification test: if the assumption that the individual-specific effects are uncorrelated with the explanatory variables is true, then coefficient estimates from the two models should not be statistically different. The test statistic is χ^2 distributed with degrees of freedom equal to the number of coefficients (9 in our application) and is equal to 60.75. This leads to the rejection of the null hypothesis that the coefficients do not differ statistically, and suggests that there is correlation between the individual-specific effects and the explanatory variables. Consequently, the fixed-effects specification is preferred over the random-effects model.

It is important to contrast the sources of variation in Tables 3 and 4 that are generating our main finding of a positive correlation between FDI presence and economic insecurity. The cross-section estimates of Table 3 exploit variation across individuals in their industry of employment and economic insecurity at a single point in time. In contrast, the panel estimates of

Table 4 identify off of “industry switchers” over time. Individuals who do not change industry of employment have their FDI-presence measure fully absorbed by their individual fixed effect, so this source of variation that was used in Table 3 is not in Table 4. Instead, identification in Table 4 comes from individual changes over time in self-assessments of economic insecurity that occur with individual changes over time in industry of employment.

Table 5 reports the results of our application of the Arellano-Bond estimator of Equation 6 that adds a lag of the dependent variable to our econometric model of economic insecurity. This addition is substantively of interest because it allows us to differentiate between the idea that persistence in observations of insecurity for any given respondent are accounted for by the influence of past experiences of insecurity on present perceptions and the alternative that some types of individuals just have unobserved characteristics that lead them to have certain types of perceptions. Recall that the Arellano-Bond estimator purges individual-specific effects by first-differencing the data. It then uses instrumental variables to address the correlation between the error term and lagged dependent variable generated by the first-differencing.

In comparing the results in Table 5 with those in earlier tables, it is important to note that the number of individuals and total observations has significantly declined. First differencing and the use of lagged instruments results in the loss of the 1991 and 1992 data altogether. It also means that individuals must be retained in the panel for three years to be included in the analysis.

The estimate of the coefficient β , the effect of FDI exposure on economic insecurity, is 0.110 with a standard error of 0.049. The magnitude of this estimate is approximately the same as for the pooled fixed-effects estimator reported in Table 4, and it is statistically significant at the 0.05 level. We regard this to be a quite rigorous test of our central hypothesis. A significant correlation between exposure to FDI and perceptions of economic insecurity remains despite our

controls for individual heterogeneity, for the possible persistence of perceptions of economic insecurity, and for year-to-year shocks in insecurity.

The estimate for the coefficient on the lagged dependent variable, ρ , is also of substantive interest. It is equal to 0.199 with a standard error of 0.021. This suggests that past shocks to individual perceptions of economic insecurity do affect current perceptions. So persistence in individual economic insecurity depends both on individual-specific characteristics that make some individuals more likely to have particular perceptions and also on the effect of past perceptions of insecurity on those in the present.

To assess the validity of the results reported in Table 5, we conducted three diagnostic tests recommended by Arellano and Bond (1991), the results of which are reported in Table 6. The consistency of their estimator requires that the errors, ε_{it} , in Equation 6 are serially uncorrelated. Arellano and Bond point out that if this is the case, then the first differenced residuals should display negative first-order serial correlation but not second-order serial correlation. Table 6 reports that we can reject the null hypothesis of no first-order serial correlation but cannot reject the null of no second-order serial correlation. Arellano and Bond also develop a Sargan test that helps further assess whether the assumptions about serial correlation hold. The null hypothesis of this test is that the model's overidentifying restrictions are valid; rejection of the null suggests the need to respecify the model (see Arellano and Bond, 1991, and Wawro, 2002). Table 6 reports that we do not have evidence to reject the null hypothesis that the overidentifying restrictions are valid. Overall, the three diagnostic tests reported in Table 6 do not raise significant concerns about the basic assumptions required for valid implementation of the Arellano-Bond estimation results reported in Table 5.

To verify our main findings in Tables 3 through 5, we conducted a number of robustness checks. One was to expand our BHPS sample beyond just private-sector, full-time, not-self-employed workers. Our FDI-insecurity correlation maintained in broader samples, but, as expected, in many cases with somewhat smaller magnitudes. A second check for Tables 4 and 5 was to also include our demographic controls from Table 3. These had no effect on our key *FDI* regressor.

5. Conclusion

A central question in political and academic debates about international economic integration is whether globalization increases economic insecurity. In this paper, we argue that FDI by multinational enterprises (MNEs) is a critical mechanism through which globalization generates economic insecurity. Economic insecurity among workers may relate to deteriorating employment and/or wage interactions with their employers. These ideas can be formalized in standard frameworks of labor economics in terms of either rising elasticities of demand for labor and/or declining profit/risk-sharing opportunities. And greater cross-border flows of FDI by MNEs are a key force that is likely both to raise elasticities and lower profit/risk sharing.

This paper provides the first direct empirical test at the individual level of the relationship between the multinationalization of production and the economic insecurity of individual workers. We present new evidence, based on the analysis of panel data from Great Britain collected from 1991-1999, that FDI activity in the industries in which individuals work is positively correlated with individual perceptions of economic insecurity. This relationship is evident in cross-sectional specifications for each year of the panel, in a pooled analysis accounting for individual-specific effects, and in a dynamic panel model also accounting for individual-specific effects.

References

- Abowd, John M., and Thomas Lemieux. 1993. "The Effects of Product Market Competition on Collective Bargaining Agreements: The Case of Foreign Competition in Canada." *Quarterly Journal of Economics*, Vol. 108 No. 4 (November):983-1014.
- Aitken, Brian, Ann Harrison, and Robert E. Lipsey. 1996. "Wages and Foreign Ownership: A Comparative Study of Mexico, Venezuela, and the United States." *Journal of International Economics*, Vol. 40 (3-4), May, pp. 345-371.
- Aldrich, John, Claire Kramer, Peter Lange, Renan Levine, John Rattliff, Laura Stephenson, and Elizabeth Zechmeister. 1999a. "Job Insecurity and Globalization: Evidence from Europe." Paper prepared for delivery at the 1999 Annual Meeting of the American Political Science Association, Atlanta.
- Aldrich, John, Claire Kramer, Peter Lange, Renan Levine, John Rattliff, Laura Stephenson, and Elizabeth Zechmeister. 1999b. "Racing the Titanic: Globalization, Insecurity, and American Democracy." Paper prepared for delivery at the 1999 Annual Meeting of the American Political Science Association, Atlanta.
- Alt, James E., and Michael Gilligan. 1994. "The Political Economy of Trading States: Factor Specificity, Collective Action Problems, and Domestic Political Institutions." *Journal of Political Philosophy* 2 (2):165-192.
- Anderson, Christopher, and Karl Kaltenthaler. 1996. "The Dynamic of Public Opinion toward European Integration, 1973-1993." *European Journal of International Relations* 2:175-199.
- Anderson, Christopher, and Jonas Pontusson. 2001. "Welfare States and Employment Insecurity: A Cross-National Analysis of 15 OECD Countries." Paper presented at the 2001 Annual Meetings of the American Political Science Association.
- Bailey, Michael, Judith Goldstein, and Barry R. Weingast. 1997. "The Institutional Roots of American Trade Policy: Politics, Coalitions, and International Trade." *World Politics* 49 No. 3 (April):309-338.
- Blanchflower, David G., Andrew J. Oswald, and Peter Sanfey. 1996. "Wages, Profits, and Rent-Sharing." *Quarterly Journal of Economics*, Vol. 111 No. 1 (February):227-251.
- Bordo, Michael, Barry Eichengreen, and Douglas Irwin. 1999. "Is Globalization Today Really Different from Globalization a Hundred Years Ago?" NBER Working Paper 7195.
- Bronfenbrenner, Kate. 2000. "Uneasy Terrain: The Impact of Capital Mobility on Workers, Wages, and Union Organizing." Mimeograph, September.
- Budd, John W., Jozef Konings, and Matthew J. Slaughter. 2002. "International Profit Sharing in Multinational Firms." National Bureau of Economic Research Working Paper.

- Budd, John W., and Matthew J. Slaughter. 2000. "Are Profits Shared Across Borders? Evidence on International Rent Sharing." National Bureau of Economic Research Working Paper #8014.
- Busch, Marc, and Eric Reinhardt. 2000. "Geography, International Trade, and Political Mobilization in U.S. Industries." *American Journal of Political Science* 44 (4):703-719.
- Cameron, David. 1978. "The Expansion of the Public Economy: A Comparative Analysis." *American Political Science Review* 72:1243-61.
- Christofides, Louis N., and Andrew J. Oswald. 1992. "Real Wage Determination and Rent-Sharing in Collective Bargaining Agreements." *Quarterly Journal of Economics*, Vol. 107 (3), August, pp. 985-1002.
- Currie, Janet, and Sheena McConnell. 1992. "Firm-Specific Determinants of the Real Wage." *The Review of Economics and Statistics*, Vol. 74 (2), May, pp. 297-304.
- Dominitz, Jeff, and Charles F. Manski. 1997. "Perceptions of Economic Insecurity." *Public Opinion Quarterly* Volume 61:261-287.
- Doms, Mark E., and J. Bradford Jensen. 1998. "Comparing Wages, Skills, and Productivity Between Domestically and Foreign-Owned Manufacturing Establishments in the United States." In Robert Baldwin, Robert Lipsey, and J. David Richardson (eds.), *Geography and Ownership as Bases for Economic Accounting*. Chicago: University of Chicago Press, pp. 235-255.
- Eichenberg, Richard, and Russell Dalton. 1993. "Europeans and the European Community: the Dynamics of Public Support for European Integration." *International Organization* 47 No. 4 (Autumn):507-534.
- Feenstra, Robert C., and Gordon H. Hanson. 1997. "Foreign Direct Investment and Relative Wages: Evidence from Mexico's Maquiladoras." *Journal of International Economics* (42)3-4:371-393.
- Freeman, John R. 1997. "Globalization, Welfare, and Democracy." Prepared for presentation at the Democracy—A Western Culture? Conference. Bamberg, Germany.
- Frieden, Jeffrey A. 1991. "Invested Interests: the Politics of National Economic Policies in a World of Global Finance." *International Organization* 45, 4 (Autumn):425-452.
- Friedman, Thomas L. 2000c. *The Lexus and The Olive Tree*. New York: Farrar Straus & Giroux.
- Gabel, Matthew. 1998a. *Interests and Integration: Market Liberalization, Public Opinion, and European Union*. Ann Arbor: University of Michigan Press.

Gabel, Matthew. 1998b. "Economic Integration and Mass Politics: Market Liberalization and Public Attitudes in the European Union." *American Journal of Political Science* 42 No. 3 (July):936-953.

Gardner, Jonathan, and Andrew J. Oswald. 2001. "What Has Been Happening to the Quality of Workers' Lives in Britain?" Mimeograph.

Garrett, Geoffrey. 1998. *Partisan Politics in the Global Economy*. Cambridge: Cambridge University Press.

Garrett, Geoffrey. 2000. "The Causes of Globalization." *Comparative Political Studies* Vol. 33 No. 6/7 (August/September):941-991.

Gilligan, Michael. 1997. *Empowering Exporters*. Ann Arbor: University of Michigan Press.

Gottschalk, Peter, and Robert Moffitt. 1994. "The Growth of Earnings Instability in the U.S. Labor Market." *Brookings Papers on Economic Activity* 2. Washington, D.C.: Brookings Institution, pp. 217-254.

Green, Donald P., and David H. Yoon. 2002. "Reconciling Individual and Aggregate Evidence Concerning Partisan Stability: Applying Time-Series Models to Panel Survey Data." *Political Analysis* Vol. 10 No. 1 (Winter):1-24.

Griffith, Rachel. 1999. "Using the ARD Establishment Level Data to Look at Foreign Ownership and Productivity in the UK." *Economic Journal*, 109, June, pp. F416-F442.

Hamermesh, Daniel S. 1993. *Labor Demand*. Princeton: Princeton University Press.

Haskel, Jonathan E., and Matthew J. Slaughter. 2002. "Do Multinational Firms Have More-Elastic Labor Demands?" Mimeograph.

Haskel, Jonathan E., Sonia C. Pereira, and Matthew J. Slaughter. 2002. "Does Inward Foreign Direct Investment Boost the Productivity of Domestic Firms?" National Bureau of Economic Research Working Paper.

Helpman, Elhanan. 1984. "A Simple Theory of International Trade with Multinational Corporations," *Journal of Political Economy* Vol. 92 (3):451-471.

Helpman, Elhanan and Paul Krugman. 1989. *Trade Policy and Market Structure*. Cambridge, MA: MIT Press.

Hicks, J. R. 1963. *The Theory of Wages*. New York: St. Martin's Press.

Hildreth, Andrew K.G., and Andrew J. Oswald. 1997. "Rent-Sharing and Wages: Evidence from Company and Establishment Panels." *Journal of Labor Economics*, Vol. 15 (2):318-337.

Hiscox, Michael. 1997. *The Trade War at Home: Factor Mobility, International Trade, and Political Coalitions in Democracies*. Ph.D. Thesis Department of Government, Harvard University.

Howenstine, Ned G., and William J. Zeile. 1994. "Characteristics of Foreign-owned U.S. Manufacturing Establishments." *Survey of Current Business*, Vol. 74 (1), January, pp. 34-59.

Inglehart, Ronald. 1997. *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies*. Princeton, NJ: Princeton University Press.

Inglehart, Ronald, and Paul R. Abramson. 1994. "Economic Security and Value Change." *American Political Science Review* Vol. 88 No. 2 (June):336-354.

Inglehart, Ronald, and Wayne E. Baker. 2000. "Modernization, Cultural Change, and the Persistence of Traditional Values." *American Sociological Review* Vol. 65 (February):19-51.

Irwin, Doug. 1994. "The Political Economy of Free Trade: Voting in the British General Election of 1906." *Journal of Law and Economics* 37:75-108.

Irwin, Doug. 1996. "Industry or Class Cleavages over Trade Policy? Evidence from the British General Election of 1923." in R. Feenstra, G. Grossman, and D. Irwin, eds., *The Political Economy of Trade Policy: Papers in Honor of Jagdish Bhagwati* (The MIT Press, Cambridge) pp. 53-75.

Iversen, Torben, and Thomas Cusack. 2000. "The Causes of Welfare State Expansion." *World Politics* 52 (April):313-49.

Iversen, Torben, and David Soskice. 2001. "An Asset Theory of Social Policy Preferences." *American Political Science Review* Vol. 95 No. 4 (December):875-893.

Johnson, George, and Matthew J. Slaughter. 2001. "The Effects of Growing International Trade on the U.S. Labor Market." In Robert Solow and Alan Krueger (eds) *The Sustainable Employment Initiative*, Russell Sage Foundation, forthcoming.

Journal of Labor Economics. 1999. Symposium Issue on "Changes in Job Stability and Job Security." October, Volume 17, Number 4, Part 2.

Kapstein, Ethan. 1999. *Sharing the Wealth: Workers and the World Economy*. New York: W. W. Norton & Company.

Katz, Lawrence F., and Lawrence H. Summers. 1989. "Industry Rents: Evidence and Implications." *Brookings Papers on Economic Activity* (Microeconomics), pp. 209-275.

Katzenstein, Peter. 1985. *Small States in World Markets*. Ithaca: Cornell University Press.

- McLaren, John, and Andrew Newman. 2001. "Globalization and Insecurity." University of Virginia mimeo.
- Milner, Helen. 1987. "Resisting the Protectionist Temptation." *International Organization* Vol. 41 No. 4.
- Moene, Karl Ove, and Michael Wallerstein. 2001. "Inequality, Social Insurance, and Redistribution." *American Political Science Review* Vol. 95 No. 4 (December):859-874.
- Mughan, Anthony, and Dean Lacy. 2001. "Economic Performance, Job Insecurity, and Electoral Choice." *British Journal of Political Science* forthcoming.
- OECD. 1997. *Employment Outlook*. Paris: Organization for Economic Cooperation and Development.
- Quinn, Dennis, and Carla Inclan. 1997. "The Origins of Financial Openness: A Study of Current and Capital Account Liberalization." *American Journal of Political Science* Vol. 41 No. 3 (July):771-813.
- Quinn, Dennis, and John Woolley. 2001. "Democracy and National Economic Performance." *American Journal of Political Science* Vol. 45 No. 3 (July).
- Rodrik, Dani. 1997a. *Has Globalization Gone Too Far?* Washington, D.C.: Institute For International Economics.
- Rodrik, Dani. 1997b. "Sense and Nonsense in the Globalization Debate." *Foreign Policy* (Summer):19-37.
- Rogowski, Ronald. 1987. "Political Cleavages and Changing Exposure to Trade." *American Political Science Review* 81:1121-1137.
- Rogowski, Ronald. 1989. *Commerce and Coalitions*. Princeton: Princeton University Press.
- Scheve, Kenneth F. 2000. "Comparative Context and Public Preferences over Regional Economic Integration." Paper presented at the 2000 Annual Meeting of the American Political Science Association.
- Scheve, Kenneth F., and Matthew J. Slaughter. 2001a. "What Determines Individual Trade-Policy Preferences." *Journal of International Economics* 54 (2):267-292.
- Scheve, Kenneth F., and Matthew J. Slaughter. 2001b. "Labor-Market Competition and Individual Preferences Over Immigration Policy." *Review of Economics and Statistics* 83:133-145.
- Scheve, Kenneth F., and Matthew J. Slaughter. 2001c. *Globalization and the Perceptions of American Workers*. Washington, D.C.: Institute for International Economics.

Schmidt, Stefanie R. 1999. "Long-Run Trends in Workers' Beliefs about Their Own Job Security: Evidence from the General Social Survey." *Journal of Labor Economics* 17 (4):S127-S141.

Shaked, Avner, and John Sutton. 1984. "Involuntary Unemployment as a Perfect Equilibrium in a Bargaining Model." *Econometrica* 52 (6):1351-1364.

Slaughter, Matthew J. 2001. "International Trade and Labor-Demand Elasticities." *Journal of International Economics* 54 (1):27-56.

Stevenson, Richard W. 2000. "Trade Support Is Dwindling, Fed Chief Says." *The New York Times*, August 26.

Sutton, John. 1986. "Non-Cooperative Bargaining Theory: An Introduction." *The Review of Economic Studies* 53 (5):709-724.

Svejnar, Jan. 1986. "Bargaining Power, Fear of Disagreement, and Wage Settlements: Theory and Evidence From U.S. Industry." *Econometrica* Vol. 54 No. 5 (September):1055-1078.

Te Velde, D.W., and O . Morrissey. 2001. "Foreign Ownership and Wages: Evidence from Five African Countries." CREDIT Discussion Paper.

United Nations Conference on Trade and Development. 2001. *World Investment Report: Promoting Linkages*. New York: United Nations.

Verdier, Daniel. 1994. *Democracy and International Trade: Britain, France, and the United States, 1860-1990*. Princeton: Princeton University Press.

Wawro, Gregory. 2002. "Estimating Dynamic Panel Data Models in Political Science." *Political Analysis* Vol. 10 No. 1 (Winter):25-48.

Yoon, David. 2000. "Application of Panel Data Analysis to Kramer's Economic Voting Problem." Paper prepared for presentation at the Summer Methods Conference July 2000.

Table 1: Summary Statistics

Variable	Year								
	1991	1992	1993	1994	1995	1996	1997	1998	1999
<i>Insecurity</i>	2.973 (1.981)	3.026 (1.747)	2.902 (1.663)	2.917 (1.701)	2.881 (1.642)	2.789 (1.563)	2.669 (1.540)	2.663 (1.465)	2.726 (1.579)
<i>FDI</i>	0.422 (0.494)	0.425 (0.494)	0.612 (0.487)	0.551 (0.497)	0.573 (0.495)	0.625 (0.484)	0.635 (0.482)	0.599 (0.490)	0.582 (0.493)
<i>Gender</i>	0.350 (0.477)	0.353 (0.478)	0.363 (0.481)	0.369 (0.483)	0.352 (0.478)	0.356 (0.479)	0.345 (0.475)	0.352 (0.478)	0.346 (0.476)
<i>Education</i>	2.262 (0.898)	2.325 (0.893)	2.399 (0.898)	2.437 (0.910)	2.468 (0.905)	2.511 (0.901)	2.502 (0.887)	2.558 (0.870)	2.539 (0.877)
<i>Age</i>	35.461 (12.031)	35.563 (11.719)	35.425 (11.572)	35.447 (11.574)	35.644 (11.566)	35.550 (11.527)	35.541 (11.752)	35.809 (11.885)	36.111 (11.718)
<i>Income</i>	23.776 (13.536)	25.278 (14.126)	25.902 (13.596)	26.486 (14.564)	27.804 (15.789)	29.319 (16.417)	28.727 (16.962)	30.572 (20.565)	30.721 (22.782)
Observations	2,668	2,385	2,280	2,410	2,377	2,525	3,068	3,060	4,059

Notes: Each cell reports the variable mean and in parentheses its standard deviation.

Table 2: FDI Industries in 1991

Two-digit 1980 SIC Industries Designated as FDI Exposed
Sectors for 1991 BHPS Respondents

Agriculture & horticulture
Coal extraction & manufacture of solid fuels
Extraction of mineral oil & natural gas
Metal manufacturing
Chemical industry
Production of man-made fibres
Manufacture of metal goods not elsewhere specified
Mechanical engineering
Electrical & electronic engineering
Manufacture of motor vehicles & parts thereof
Manufacture of other transport equipment
Food, drink & tobacco manufacturing industries
Textile industry
Manufacture of paper & paper products; printing and publishing
Processing of rubber & plastics
Postal service & telecommunications
Banking & finance
Insurance, except for compulsory social security

Table 3: Cross-sectional Analysis of Economic Insecurity

Regressor	Year								
	1991	1992	1993	1994	1995	1996	1997	1998	1999
<i>FDI</i>	0.318 (0.079)	0.322 (0.073)	0.397 (0.071)	0.274 (0.070)	0.315 (0.069)	0.278 (0.063)	0.240 (0.057)	0.371 (0.053)	0.300 (0.050)
<i>Gender</i>	-0.296 (0.080)	-0.334 (0.074)	-0.285 (0.071)	-0.336 (0.070)	-0.164 (0.071)	-0.158 (0.064)	-0.114 (0.059)	-0.176 (0.054)	-0.106 (0.052)
<i>Education</i>	0.059 (0.045)	0.113 (0.042)	0.135 (0.042)	0.078 (0.042)	0.189 (0.039)	0.128 (0.036)	0.044 (0.034)	0.047 (0.032)	0.000 (0.030)
<i>Age</i>	0.008 (0.003)	0.007 (0.003)	0.011 (0.003)	0.012 (0.003)	0.011 (0.003)	0.009 (0.003)	0.010 (0.002)	0.011 (0.002)	0.010 (0.003)
<i>Income</i>	0.001 (0.003)	0.000 (0.002)	-0.005 (0.003)	0.001 (0.002)	-0.005 (0.002)	0.000 (0.002)	-0.003 (0.002)	-0.002 (0.001)	-0.003 (0.001)
<i>Constant</i>	2.536 (0.185)	2.497 (0.175)	2.174 (0.168)	2.230 (0.165)	2.031 (0.160)	2.027 (0.152)	2.161 (0.142)	2.059 (0.135)	2.318 (0.127)
S.E.R.	1.966	1.726	1.636	1.679	1.619	1.548	1.530	1.444	1.566
Observations	2,668	2,385	2,280	2,410	2,377	2,525	3,068	3,060	4,059

Notes: These results are ordinary least squares regression coefficient estimates for each year. Each cell reports the coefficient estimate and in parentheses its standard error. The dependent variable is *Insecurity* which is coded one to seven with respondents least satisfied with their job security receiving the highest score.

Table 4: Panel Analysis of Economic Insecurity: 1991-1999

Regressor	Random Effects	Fixed Effects
<i>FDI</i>	0.221 (0.024)	0.089 (0.031)
<i>Year 1992</i>	0.069 (0.038)	0.099 (0.039)
<i>Year 1993</i>	-0.088 (0.039)	-0.024 (0.041)
<i>Year 1994</i>	-0.065 (0.038)	-0.012 (0.041)
<i>Year 1995</i>	-0.087 (0.039)	-0.018 (0.041)
<i>Year 1996</i>	-0.192 (0.038)	-0.124 (0.042)
<i>Year 1997</i>	-0.294 (0.037)	-0.214 (0.041)
<i>Year 1998</i>	-0.283 (0.037)	-0.192 (0.041)
<i>Year 1999</i>	-0.234 (0.036)	-0.165 (0.042)
<i>Constant</i>	2.832 (0.031)	2.859 (0.032)
Observations	25,030	25,030
Individuals	7,413	7,413
T	1 ≤ T ≤ 9	1 ≤ T ≤ 9

Notes: Each cell reports the coefficient estimate and in parentheses its standard error. The dependent variable is *Insecurity* which is coded one to seven with respondents least satisfied with their job security receiving the highest score.

Table 5: Dynamic Panel Analysis of Economic Insecurity: 1993-1999

Regressor	Arellano-Bond
$\Delta Insecurity_{(t-1)}$	0.199 (0.021)
ΔFDI	0.110 (0.049)
$\Delta Year\ 1993$	-0.091 (0.041)
$\Delta Year\ 1994$	-0.042 (0.042)
$\Delta Year\ 1995$	-0.001 (0.041)
$\Delta Year\ 1996$	-0.087 (0.039)
$\Delta Year\ 1997$	-0.171 (0.036)
$\Delta Year\ 1998$	-0.093 (0.033)
<i>Constant</i>	-0.026 (0.009)
Observations	13,379
Individuals	3,781
T	$1 \leq T \leq 7$

Notes: Each cell reports the coefficient estimate and in parentheses its standard error. The dependent variable is *Insecurity* which is coded one to seven with respondents least satisfied with their job security receiving the highest score. The Arellano-Bond estimator is a first-difference estimator so the dependent variable is actually the difference between the *Insecurity* measure in period t and period $t-1$. The sample estimated in this table is two years shorter than in Table 4 because two lags are required to estimate the model.

Table 6: Specification Tests for Dynamic Panel Analysis of Economic Insecurity: 1993-1999

Test	Results
1st-order serial correlation test:	
Z	-20.43
Probability value under null of no autocorrelation	0.000
2nd-order serial correlation test:	
Z	1.14
Probability value under null of no autocorrelation	0.255
Sargan test of over-identifying restrictions:	
$\chi^2(27)$	29.46
Probability value under null that overidentifying restrictions are valid	0.339