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Flexible Work and Immigration in Europe

Damian Raess and Brian Burgoon

Abstract

Immigration has risen substantially in many European economies, with far-reaching if still uncertain implications for labour markets and industrial relations. This article investigates such implications, focusing on employment flexibility, involving both 'external flexibility' (fixed-term or temporary agency and/or involuntary part-time work) and 'internal flexibility' (overtime and/or balancing-time accounts). The article identifies reasons why immigration should generally increase the incidence of such flexibility, and why external flexibility should rise more than internal flexibility. The article supports these claims using a dataset of establishments in 16 European countries.

1. Introduction

International migration has become among the most controversial and important developments in contemporary European political economy and industrial relations. This reflects in part the highly visible rise in foreign-born shares in many European economies since the 1970s, parallel to turbulent labour market developments. But it also reflects the widely debated consequences of immigration for virtually all aspects of industrial relations, including labour supply, wages and employment.

Despite such controversy, we know little about immigration's implications for one of the most important developments in contemporary industrial relations: the rise and spread of flexible work. Such practices involve non-standard work, especially part-time and temporary work contracts, and flexible working time by full-time workers, especially overtime and varying work weeks via 'balancing-time' accounts (e.g. European Commission 2006; Hunter *et al.* 1993). Such flexibility is a source of both wonder and worry. Some expect it to help in combining work with family or by increasing productivity (Booth and van Ours 2008; Cappelli 1999; De Graaf-Zijl 2005; Doogan 2005; Guest 2004; Knell 2000). But others find that flexibility engenders social fragmentation and isolation, or job and income insecurity (Beck 2000; De Witte and

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Näswall 2003; Erlinghagen 2008; Green *et al.* 2010; Heery and Salmon 2000). Whether one welcomes or laments flexible employment, its rise deserves explanation.

How and whether flexible working practices have anything to do with immigration, as opposed to domestic political and economic conditions, is an open question. The dominant view is that flexible contracts and working time are shaped by *domestic* factors — where immigration or other globalization features are either ignored or do not matter (Golden and Appelbaum 2006; Gustafsson *et al.* 2003; Hunter *et al.* 1993; Kalleberg 2001; Smith and Neuwirth 2008). Those studies exploring global economic forces offer competing and limited views into migration's role in shaping flexible employment. Some find that trade and capital openness create pressures which increase flexibility, at least for particular socioeconomic groups surveyed (e.g. Blair-Loy and Jacobs 2003; Jirjahn 2008; Lillie 2012; McDowell *et al.* 2008; Raess and Burgoon 2006). A few draw the opposite conclusion, where globalization increases profitability, which gets passed on to workers as less rather than more flexible work (e.g., Flanagan 2006). Still others have found globalization to spur flexible employment particularly where work councils negotiate trade-offs between employment and working conditions (Burgoon and Raess 2009). Existing studies, however, have limited empirical reach, focusing on facets of globalization other than immigration and with no large-N work considering flexibility effects of immigration.

To redress such shortcomings, this study explores arguments about how immigration affects two kinds of employment flexibility: fixed-term or temporary agency work and employer-mandated part-time work, which we term 'external flexibility'; and overtime and balancing-time accounts, which we term 'internal flexibility'. As Section 2 explains, migration creates opportunities for labour substitution that should increase employment flexibility generally. But by directly increasing available and more docile labour supply, immigration should more positively affect non-standard contracts constituting external flexibility than it does working-time practices constituting internal flexibility.

Sections 3 and 4 test these arguments on a survey of private establishments in 16 European countries that allows judging how immigration affects flexibility standards at the level where standards are most directly decided. The analysis reveals patterns broadly in line with expectations. On the one hand, foreign-born shares tend to be unrelated to the incidence of *internal flexibility*, as measured in incidence of paid overtime, of balancing-time accounts or a composite of both. On the other hand, foreign-born shares tend to strongly spur *external flexibility*: fixed-term or agency employees, employer-mandated part-time employees or a composite of both. Furthermore, the latter pattern predominates the way immigration influences a combined measure of both internal and external flexibility: foreign-born shares modestly increase the incidence of composite measures of internal and external flexibility.

The results suggest that immigration shapes flexibility practices in European labour markets but in ways that vary across different aspects of

flexibility. They clarify the origins of a key development in working life. And they help clarify consequences of immigration for meso-level political-economic life, thereby further bridging scholarly study of international political economy and of industrial relations (Haworth and Hughes 2003).

2. Flexibility and immigration

Our expectations about immigration's implications distinguish different kinds of flexibility and underlying political interaction of employers and workers. Employment flexibility includes both contract and work-time flexibility. Research on (organizational) flexibility suggests two strategies of flexible labour utilization: external (or numerical) versus internal (functional) flexibility (Atkinson 1984; Cappelli and Neumark 2004). Employers' need for flexibility can be achieved by rendering firms externally flexible, with work organized so that adjustment to demand occurs via non-standard work and/or via high-labour turnover. Non-standard employment involves deviation from full-time employment and includes fixed-term contracts (i.e. short-term contracts for finite periods on an as-needed basis), temporary agency contracts (i.e. employment via a temporary agency company) and part-time work (Kalleberg 2001: 483).¹ In internally flexible firms, core workers experience flexible working time, such as night shift or overtime work, or balancing-time accounts where above-standard hours are accumulated without extra pay in a working-time account and compensated later by reduced hours. Such time-related conditions are often introduced alongside other arrangements such as variable pay and job rotation (McDuffie 1995). The key difference between the two kinds of employment flexibility is that adjustment costs fall on peripheral workers with external flexibility and on core workers with internal flexibility. External flexibility, thus, entails labour market dualism, insider–outsider segmentation.

Setting either kind of employment flexibility reflects employer and employee preferences. Employers tend to want the option of flexible hours and non-standard contracts to allocate personnel efficiently across business cycles (Bosch and Lehndorff 2001; Hinrichs *et al.* 1991). This may be particularly important with just-in-time production, close client orientation and longer machine running time of capital-intensive assembly lines — all of which chafe against regular, full-time contracts with clearly defined hour limits in a given week. In Europe since the late 1970s, employers have negotiated reductions in standard hours of full-time employees in exchange for flexibility in daily, weekly and weekend work (Bosch 1990; Plantenga and Dur 1998).

Among employees, preferences can be expected to vary substantially across sectors, occupations and personalities of workers (Tijdens 2003; Väisänen and Nätti 2002). Some workers clearly can see benefits to both internal and external flexibility (Kalleberg 2000; Krausz 2000). But internal flexibility is likely less of a threat to the employment condition of core

workers than external flexibility. Balancing accounts might enhance workers' sovereignty over their time allocation. And some workers might welcome extra compensation associated with overtime. Employees with flexible contracts, in contrast, face greater wage and unemployment risks than their counterparts on standard contracts (Gash and McGinnity 2007). Survey evidence suggests that employees tend to prefer more regular and fixed working hours and, certainly, employment contracts — being predictable and easier to combine with family and other social responsibilities (Beard and Edwards 1995; De Wolff 2000).

Against the background of employer and employee attitudes, immigration can be expected to have offsetting and skill-specific effects for flexibility in advanced economies. On the one hand, migration might spark forces yielding more flexibility for particular workers as part of the easier 'sweating' of those workers competing in similar skill categories as migrant workers (Borjas *et al.* 1996; Feenstra and Hanson 1996). On the other hand, immigration might translate into more limited flexibility: migration can alter wage bargains and lower costs without introduction of flexibility, and these changes can improve profitability for enterprises that get passed onto core workers as more regular employment and fewer irregular and overtime hours (Flanagan 2006). This might hold in particular where migration complements more than substitutes for native worker profiles (Hanson *et al.* 2001). Alternatively, the employment or poverty risks generated by immigration might lead workers to demand reduced flexibility as internal *compensation* for such risks (Katzenstein 1985).

However, several features of Europe's immigration have implications for workplace bargaining that should yield more flexibility. With the physical presence of migrants in the economy, employers have an attractive option of substituting foreign for native workers instead of shifting jobs abroad, because it provides them less uncertainty and a faster response to changing international price pressures. This general consideration could strengthen employer pressure to increase internal as well as external flexibility.

Foreign-born workers tend to have skill profiles and socioeconomic backgrounds providing employers greater latitude to pressure immigrants than applies to native workers. The kind of migration applying to European countries tends to be of a more skewed, lower skill profile than native workers for whom they are substitutes. This is captured by how native populations in Europe have higher education on average (lower share of primary and higher share of secondary and tertiary education) than their foreign-born populations — more than is the case in non-European OECD countries (OECD 2008: table 3.1). This skew is different than that applying to the trade pattern of European economies, where intra-industry trade is as or more extensive than inter-industry trade. Such skew shows up in how immigration in many settings, more than trade, yields upskilling and dampens less skilled wages (Borjas *et al.* 1992, 1996; Okkerse 2008). Foreign-born employees also often have social and legal positions that render them vulnerable in relation to employers. Europe's foreign-born workers experience higher

unemployment, are less familiar with regulations and rights, have precarious legal positions and often come from settings with exploitative working conditions that may make them more docile in confronting employers (Camarota 1998; Newman and Lennon 1995; Woolfson 2007).

In short, immigration can be expected to increase the tendency of foreign-born workers to accept more flexible working conditions than do their native counterparts, constituting a composition effect. And it can be expected to embolden and empower employers to negotiate flexible working-time arrangements and contracts in workplace bargaining. Such responses from employers are, to be sure, mediated by stereotypes across particular immigrant groups (MacKenzie and Forde 2009; McGovern 2007; Waldinger and Lichter 2003).² But the general expectation these various considerations underscore is simple:

Hypothesis 1: Immigration should positively affect the incidence of internal and external flexibility.

Our second expectation is that such effects are likely stronger and more positive with respect to external than with internal flexibility. Incumbent workers likely defend against the hollowing out of standard employment in the face of a larger, more docile labour pool. As discussed above, core workers prefer overtime or modest hours variation over non-standard contracts. But they may accept non-standard contracts (for primarily foreign-born workers) to protect their own employment, including less internal flexibility — forming cross-class coalitions with employers to defend insiders (Olsen 2005). With cheap and malleable immigrant pools, in short, employers may use migrant workers as external buffers to adjust to global markets. Indeed, some research has found that migrant workers tend to participate in the secondary labour market (King and Rueda 2008; McDowell *et al.* 2008; Piore 1979).

A further reason to expect immigration to play out more strongly for external than internal flexibility is that employers, especially in the more regulated EU countries, may follow a deliberate deregulatory agenda that uses migrant workers to liberalize EU labour markets (Lillie and Greer 2007). Because liberalization of atypical employment is arguably a stronger threat to regulated labour markets than is flexible work-time arrangements, and because of greater malleability than their native counterparts, migrant workers might be more easily driven into non-standard employment contracts and likely to increase the tendency of employers to consider such contracts. These considerations motivate our second hypothesis:

Hypothesis 2: Immigration should more strongly positively affect external flexibility (fixed-term or agency work and involuntary part-time work) than it does internal flexibility (overtime and balancing-time accounts).

These hypotheses do not preclude other, more nuanced possibilities. Atkinson (1984) suggests that internal and external flexibility might be imperfect substitutes (c.f. Lillie 2012). If so, immigration's hypothesized effects for

external flexibility ought to be dampened by existing internal flexibility, and vice versa. We explore this possibility below. However simple our main expectations, evidence for them is hard to find, given the lack of data capturing variation in immigration exposure that matches data on employment flexibility where such flexibility is most directly set — the individual establishment.

3. Evidence from establishment surveys in Europe

We test the above expectations by analyzing establishment-level data in European countries using the Establishment Survey on Working Time and Work–Life Balance (ESWT) (European Foundation for the Improvement of Living and Working Conditions and TNS Infratest Sozialforschung (Munich) 2007). The ESWT survey was carried out in 2004–2005 in 15 ‘old’ and six ‘new’ member states for a total of 21 EU countries, though matching to the OECD immigration measure narrows the sample to 16 countries (Belgium, Denmark, Greece, Spain, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom, Czech Republic, Hungary and Poland). Our data comprise a representative sample of private establishments with 10 or more employees from all sectors, excluding agriculture (NACE A), fishing (NACE B), private households (NACE P) and extra-territorial organizations (NACE Q).³ Interviews were conducted with human-resource managers or employee representatives in some 9,600 establishments, ranging from some 350 (e.g. Luxembourg) to 1,100 cases (e.g. United Kingdom). The data allow only a focus on variation across establishments at one time point. Despite this limitation, the ESWT dataset provides substantial leverage to test immigration’s effects on flexible work, because it focuses on the level at which flexibility is most directly set — the establishment rather than the sector or country — and because it covers countries with widely varying economic and political institutions, ideas and interests.

Dependent Variables: External and Internal Flexibility

The ESWT survey covers a range of items relevant to flexibility of working time and contracts. Our measure of *external flexibility* focuses on contract flexibility. We consider the incidence of two forms of non-standard work contracts: fixed-term or temporary agency contracts, and employer-mandated, or ‘involuntary’, part-time contracts. *Fixed-term or temporary agency contracts* is a binary measure of whether an establishment has fixed-term or temporary agency contracts (1 = establishments with either fixed-term or temporary employees, or employees from a temporary work agency; 0 = establishments without such employees).⁴ *Involuntary part-time contracts* is a binary measure of whether an establishment has part-time employees (based on national definitions of part time) to meet the needs of the employer — as opposed to other reasons, such as employee preference.⁵ Such

involuntary part timers are non-standard workers but likely also more peripheral workers, distinct from part-time employees who prefer part-time work to belonging to the core workforce (see Kalleberg 2001: 483). We also add these two measures to form a composite of *external flexibility*, as follows: 0 = neither fixed-term or agency contracts nor involuntary contracts; 1 = either fixed-term or agency contracts or involuntary part-time contracts; 2 = presence of *both* fixed-term or temporary agency contracts and involuntary part-time work contracts. In the ESWT sample, fixed-term or agency work and involuntary part-time contracts are weakly correlated (coefficient of correlation = 0.07, p -value = 0.008). The average score for fixed-term or agency work is 0.7 — quite dispersed (standard deviation (SD), 0.46) with Greek enterprises having the lowest incidence (0.41) and Czech enterprises the highest (0.93). The mean for incidence of involuntary part time is 0.12, more dispersed (SD, 0.32) and with the lowest average for Portugal (0.02) and Poland the highest (0.32).

With respect to *internal flexibility*, we focus on working-time flexibility that allows varying labour volume through internal means. We consider two such measures: the incidence of a *balancing-time account* which allows employees to work longer in a given day or week and to compensate this later by working less on other days or weeks; and the incidence of *paid overtime* work. We measure these as binary variables, as follows: 1 = presence of balancing-time accounts (paid overtime); 0 = no balancing-time accounts (no paid overtime). As with external flexibility, we also report a composite measure of *internal flexibility* created from the two binary working-time flexibility measures, as follows: 0 = neither balancing-time accounts nor paid overtime; 1 = presence of either; 2 = presence of both. In our ESWT sample, balancing-time accounts and paid overtime correlate negatively (correlation -0.14), likely because balancing-time accounts allow employees to accumulate extra hours and be compensated later by time off rather than paid overtime compensation. And the sample's means, hence average incidence, for balancing time and for paid overtime are 0.31 and 0.31, respectively (SD, 0.46 and 0.46, respectively), with Greek enterprises having the lowest proportion of enterprises with balancing-time accounts (0.15) and Finnish the highest (0.58), and with Belgian enterprises the lowest incidence of paid overtime (0.09) and Italy the highest (0.59).⁶

As a final measure of flexibility, we also report two composites of the incidence of *combined flexibility*. *Combined flexibility categorical* is a simple additive composite of the two components of *external flexibility* and of *internal flexibility* and hence ranges from 0 to 4. *Combined flexibility binary* measures the presence of any one of the four components (1 = either balancing-time accounts, paid overtime, involuntary part-time or fixed-term or temporary agency contracts; 0 = none of these four). 23 per cent of the full sample enterprises have neither internal nor external flexibility; 47 per cent has one; and 30 per cent have both. All these component and composite measures harbour substantial variation in flexible working conditions that provide leverage to judge both hypotheses 1 and 2.

Independent Variable: Foreign-Born Share of Employment

Our measure of immigration is *foreign-born share* of employment, based on measures of total employees, foreign-born employees and native employees in each of the sample establishments' sector of operation, all available only for one year, roughly 2003. The data come from OECD STAN Database (for employment in all sectors) and from OECD International Migration Database (for native and foreign-born employees) (all accessed in October 2010). The ESWT survey categorizes the surveyed establishments in 13 one-digit NACE sectors. The OECD provides data on the above globalization variable, categorized by International Standard Industrial Classification (ISIC) code that can be matched one-to-one with the NACE categorization after simple concordance for most though not all of the ESWT sample countries. Non-OECD European countries are excluded as a result. *Foreign-born share* is the total foreign-born employees as a share of total sector employment.

Controls

To test the impact of immigration on flexibility, we also control for factors that prior research has shown to significantly shape both. Establishment *size* is a categorical variable of total employees, ranging from 1 (10–19 employees) to 10 (500 or more employees). Larger establishments should have more flexibility, as they tend to have specialized departments and legal expertise to implement flexible work systems. *Female share*, the share of female employees in the workforce, is measured as a categorical variable with seven brackets ranging from 1 (none at all) to 7 (all). We expect female proportion to be positively associated with external flexibility and negatively with internal flexibility, reflecting how women disproportionately work part-time hours for reasons of work-life balance. *Skilled workers*, a high proportion of employees in skilled jobs requiring an apprenticeship, a university degree or other specific professional training, is a categorical variable measured such as *female share*. Skill level ought to negatively correlate with external flexibility but positively with internal flexibility, given how modern manufacturing processes (i.e. just-in-time production, quality management) depend more on skilled workers and greater managerial freedom in the use of that labour force. *Employment loss* (0 = increase or stable; 1 = decrease) should negatively affect flexibility given how downturns adversely affect overtime and the peripheral workforce as managers are forced to streamline their organization.

Worker representation is a dummy variable for incidence of formal workplace worker representation, including works councils or unions. We expect such representation to increase flexibility, given that unions and works councils tend to embrace flexibility to protect employment, wages or standard weekly hours (Burgoon and Raess 2009). *Old East Europe* is a dummy for East European establishments existing prior to 1989, capturing differences in productivity and correlating with higher flexibility to offset lagging

productivity. *Difficulty finding workers* is a dummy variable based on a question about difficulty finding skilled or unskilled employees, a factor that might influence as much as reflect globalization and that should increase flexibility, especially internal flexibility for existing workers. *Parents on leave*, a dummy based on whether some workers have taken parental leave, captures the profile of those possibly wanting to re-enter the labour market on a part-time basis; the need for temporary employees to replace those on leave; and the direct pressure on flexibility of incumbent workers. *Older workers* is a categorical variable of the share of employees older than 50 measured on a scale from 1 (none) to 7 (all), to capture workers less capable and/or willing to work flexibly, but also in more precarious employment due to the spectre of skill redundancy. We finally control for interview type, since the ESWT surveys were usually carried out with management only, but sometimes with management and employee representatives together (about one-third of the sample). Appendix 1 provides all summary statistics.

Estimation Approach

We test our hypotheses with probit models of per country-establishment employment flexibility, in particular: binary components of *fixed-term or agency work*, *involuntary part-time work*, *balancing-time accounts*, *paid overtime*; and binary composite of all four features, *combined flexibility*. We also report ordered probit models for categorical composites of *external flexibility*, *internal flexibility* and *combined flexibility*. We report estimations with the full sample and controls, though also considered a range of alternative specifications discussed below. To absorb unmeasured, country-specific differences beyond the substantive parameters and address heteroscedasticity, all estimates include country dummies. And we include sample weights, given strong reasons to suspect that substantive variables are insufficient to address sampling bias.⁷ All baseline models estimate Huber–White *robust-cluster* ‘sandwich’ standard errors, clustered over industries, to address unit-level heteroscedasticity and correlation (Moulton 1990).

4. Results

Table 1 summarizes the results relevant to testing hypotheses 1 and 2. The first three columns show the estimates of how foreign-born share affect the incidence of *external flexibility* measures: *fixed-term or agency work* (column 1); *involuntary part-time work* (column 2); and the categorical composite of both, *external flexibility* (column 3). The middle three columns summarize results from the same specifications for the incidence of *internal flexibility*: *balancing-time accounts* (column 4); *paid overtime* (column 5); and the categorical composite of both, *internal flexibility* (column 6). The last two columns summarize results for *combined flexibility*.

TABLE 1
Probit Estimates of External and Internal Flexibility

	External flexibility			Internal flexibility			Combined flexibility	
	Fixed-term or temporary work (1)	Involuntary part-time work (2)	Composite external flexibility (3)	Balancing-time accounts (4)	Paid overtime (5)	Composite internal flexibility (6)	Combined flexibility categorical (7)	Combined flexibility binary (8)
Foreign born	1.860*** (0.715)	4.174** (1.655)	3.396*** (0.901)	0.223 (1.021)	-1.551 (0.994)	-0.764 (0.918)	1.629*** (0.542)	1.863*** (0.575)
Size	0.183*** (0.020)	0.062*** (0.012)	0.127*** (0.010)	-0.021 (0.016)	0.035** (0.015)	0.010 (0.009)	0.088*** (0.008)	0.129*** (0.022)
Female share	0.045*** (0.013)	0.154*** (0.026)	0.093*** (0.016)	0.017 (0.015)	-0.135*** (0.020)	-0.077*** (0.014)	0.006 (0.015)	-0.011 (0.025)
Skilled workers	-0.059 (0.061)	-0.174*** (0.058)	-0.109*** (0.039)	0.132** (0.066)	-0.060 (0.083)	0.050 (0.050)	-0.037 (0.045)	-0.069 (0.060)
Employment loss	-0.095*** (0.028)	0.001 (0.039)	-0.065*** (0.028)	-0.046*** (0.016)	-0.069*** (0.015)	-0.072*** (0.013)	-0.091*** (0.024)	-0.080* (0.046)
Worker representation	0.159*** (0.054)	0.006 (0.141)	0.126 (0.079)	0.044 (0.054)	0.041 (0.074)	0.053 (0.040)	0.119** (0.059)	0.205*** (0.074)
Old East Europe	-0.378*** (0.102)	-0.113 (0.122)	-0.335*** (0.123)	0.095 (0.136)	-0.016 (0.103)	0.067 (0.140)	-0.174* (0.091)	-0.238* (0.133)
Difficulty finding workers	0.159*** (0.048)	0.054 (0.051)	0.129*** (0.048)	-0.001 (0.035)	0.227*** (0.063)	0.140*** (0.035)	0.177*** (0.042)	0.181*** (0.038)
Parents on leave	0.137*** (0.037)	0.007 (0.085)	0.105*** (0.050)	0.123*** (0.040)	0.045 (0.044)	0.109*** (0.028)	0.142*** (0.045)	0.229*** (0.071)
Older workers	-0.013 (0.020)	0.045 (0.037)	0.011 (0.021)	0.034*** (0.013)	0.010 (0.015)	0.030*** (0.010)	0.027** (0.012)	0.028** (0.014)
Internal flexibility	0.065 (0.043)	0.050 (0.032)	0.062** (0.030)					
External flexibility				0.093*** (0.019)	0.009 (0.053)	0.063** (0.032)		
Log pseudo-likelihood	-5541.85	-3189.86	-7866.03	-5158.48	-5452.89	-8178.0	-11540.91	-3757.32
Total observations	9502	9502	9502	9502	9502	9502	9502	9502
Pseudo-R ²	0.12	0.13	0.08	0.07	0.11	0.04	0.04	0.08

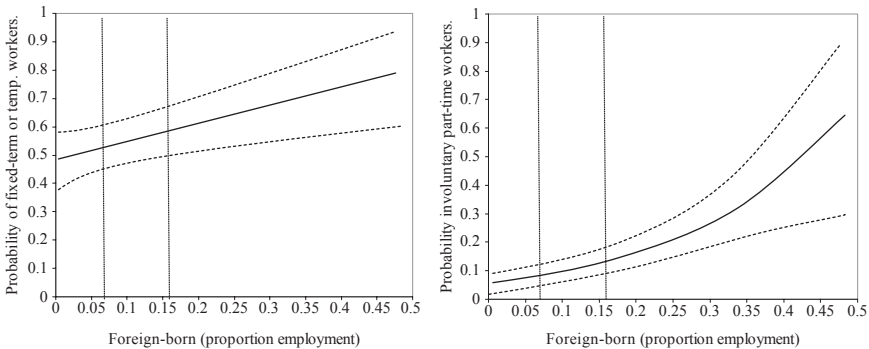
Columns (1), (2), (4), (5), (8): Probit coefficients.
 Columns (3), (6), (7): Ordered probit coefficients.
 All models: Robust standard errors (in parentheses), clustered over industry. Cuts, country dummies and interview-type dummy not shown.
 * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

The controls perform in line with expectation. Larger establishments and those having difficulty finding workers, parents on leave, older workers and worker representation all tend to have higher external and internal flexibility. Establishments from East Europe and facing employment reductions tend to have reduced such flexibility. Establishments with higher female shares tend to have more external but less internal flexibility, while the reverse holds for higher skilled workers share. Internal and external flexibility correlate positively with one another, suggesting that they are possible complements, not substitutes. Country dummies are highly jointly significant. The models generally perform modestly in the aggregate, however, and do so even if one throws all measures from the survey into alternative estimations.

The main results provide mixed support for hypothesis 1 and clear support for hypothesis 2. The first three columns reveal immigration to significantly increase the measures of *external flexibility*. Although the positive effects of *foreign-born share* are statistically significant at standard levels for both *fixed-term or agency workers* and *involuntary part-time workers*, the substantive effect of the latter is twice that of the former. Furthermore, additive composite of the two components, *composite external flexibility*, is also highly significantly spurred by *foreign-born share* of employees.

Figure 1 clarifies the substantive meaning of these statistically significant effects. The left-hand panel calculates the increase in predicted probabilities of enterprises having *fixed-term or temporary agency workers* as one moves from the first through the 99th percentile of the sample distribution in foreign-born employment share — holding all other parameters at their medians (based on model 1). The right-hand panel, in turn, summarizes the predicted probability of having *involuntary part-time workers* across the same distribution of *foreign-born share* (based on model 2). Both panels also include the distributions for the 95 per cent confidence interval and show (with the vertical line) the sample median and 90th percentile in immigration.

FIGURE 1
Immigration and External Flexibility.



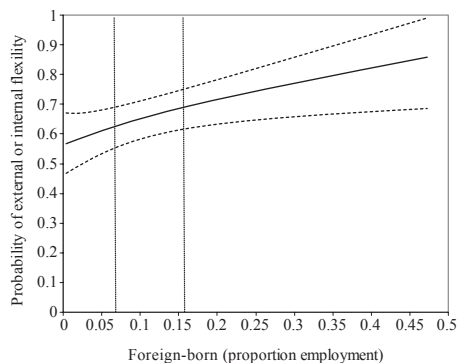
should keep in mind that the sample distributions are different, with 0.7 of the sample establishments actually reporting *fixed-term or agency workers* and only 0.12 of the establishments reporting *involuntary part-time*. *Foreign-born share*, hence, more significantly increases the latter than it does the former. Moving from the 50th to the 90th percentile in *foreign-born share* predicts a 7 percentage-point rise in *fixed-term or agency workers* (from 54 to 60 per cent chance), but a 50 percentage points rise in the chance of having *involuntary part-time workers* (from 6 to 56 per cent).

Columns 4 through 6, however, make it very clear that *foreign-born shares* do not affect the measures of *internal flexibility*. For both *balancing-time accounts* and *paid overtime* the immigration measure has no discernible effects. And the result is the same with respect to the additive composite measure, *composite internal flexibility* (column 6). The final two columns show, however, that the effects for *external flexibility* tend to dominate those for *internal flexibility*, as both measures of the incidence of *combined flexibility* are significantly and substantively increased by higher *foreign-born shares*. Figure 2 clarifies the substantive meaning of this effect, where moving from the 50th to the 90th percentile in *foreign-born share* predicts a rise of 23 percentage points in the chance that an enterprise has at least one of the four kinds of working-time flexibility (from 62 to a 85 per cent chance).

These results provide a mixed picture, hence, for hypothesis 1: *foreign-born share* has strong spurring implications for some of, but not all, the measured manifestations of flexible working conditions. However, the patterns are clearly in line with hypothesis 2: *foreign-born share* clearly has a stronger influence on the faces of *flexibility* connected to non-standard working contracts than for the working-time practices of core workers.

To further explore these patterns, we considered whether internal and external flexibility are imperfect substitutes. As we already saw in the above specifications, the two kinds of flexibility are positively related to one another. But we also considered whether migration has less positive effects

FIGURE 2
Immigration and Total Flexibility.



for external flexibility, where internal flexibility is higher (or any other interaction between migration and internal or external flexibility). We find that the interactions are significantly negative only for involuntary part time, suggesting that internal and external flexibility tend not to be imperfect substitutes (results available upon request). Such patterns go against the findings of Atkinson (1984) and are more in line with the view of Lillie (2012) that employers may use external flexibility to pressure core workers.

Our results are robust to alternative specifications. They are robust to other constellations of controls, for instance excluding *skilled*, *old* or other reported controls, and to alternate coding of controls, including the use of dummies for variables such as *size*, *female* or *older workers* shares. We also considered but do not report other controls, either because they are more likely effects of globalization or flexibility than causes of such, or because they pose multi-collinearity problems. For instance, controlling for sector wages or industry dummies, while generating multi-collinearity problems, do not change the signs and significance of the main results. Controlling for standard weekly hours doesn't change the results either. Excluding any country or extreme values of the key explanatory variables do not change the reported results. Alternate estimation of standard errors (e.g. clustering over countries) yields very similar results. Alternative estimators, including multi-level random-coefficient random-intercept models, corroborate the reported results. Finally, the results are robust to alternative measures of the dependent variables, including binary measures of internal and external flexibility, and measures of external flexibility with incidence and proportion of part time and of internal flexibility comprising general measures of incidence and proportion of overtime.

5. Conclusion

This article explores whether workplace exposure to immigration influences the incidence of employment flexibility in European economies. Our analysis of establishment-level flexibility in 16 countries suggests 'yes', but in ways that vary across aspects of flexibility. Establishments with higher foreign-born shares of workers are more likely to introduce fixed-term, temporary agency and employer-mandated part-time work contracts. But they are no more likely than establishments with few or no foreign-born employees to introduce paid overtime or balancing-time accounts for core workers. These patterns comport only in part with popular wisdom about how economic globalization as a whole unleashes pressures that alter negotiations over flexibility in workplaces toward less employee-friendly conditions. Immigration may mean more flexibility as a generalization, but that generalization masks immigration's influence on external but not internal flexibility.

Further study should consider the robustness of the results to broader samples of enterprises and countries, to over-time developments, and to more fine-grained measures of immigration and flexibility. We also need further

study of the economic insecurities or other reasons why immigration might have the effects we identify, including exploration of whether the effects of immigration are functions of composition or other effects. Further research should also consider how immigration's effects for flexibility might be mediated by institutional conditions at the level of the enterprise, industry or country — building on modest research in this direction (Alsos and Eldring 2008; Burgoon and Raess 2009).

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Notes

1. King and Rueda (2008) focus on fixed-term and part-time work contracts as strongly correlated among advanced industrial countries, where high temporary employment obviates the need for part-time employment.
2. Unfortunately, our data do not allow us to test, here, whether this or the composition effect is more important.
3. The reported results exclude public enterprises; because public establishments are subject to different exogenous conditions influencing contracting and working time arrangements than applies to private establishments. Still, all the reported results have been replicated with public enterprises as well.
4. This measure combines one question on incidence of 'fixed-term or temporary workers' and one on incidence of 'temporary agency workers'. We combine these to avoid double counting: affirmative answers to the former may concern temporary workers from temporary agencies that are counted again with the latter measure. Unfortunately, the ESWT survey includes no question on the proportion of fixed-term and temporary workers.
5. The questionnaire asks whether part time was introduced mainly to meet (a) the needs of the establishment (b) the wishes of the employees or (c) both. Survey responses (a) build our measure of employer-mandated part time, which is

reasonable proxy for involuntary part time because it excludes the possibility that such employment conforms to employee preference (i.e. survey responses (b) or (c)). In other words, it is likely that most employer-mandated part-time posts will be filled by plenty of workers not preferring to work part time.

6. All four components for external and internal flexibility capture variation that, upon being aggregated to the national averages, strongly positively correlate with other national measures of fixed-term, part-time, balancing-time and overtime work in other data.
7. For instance, the establishment-weight parameter significantly interacts with the immigration measure. And the substantive parameters in the dataset cannot capture all the reasons why some enterprises are under or over sampled in the ESWT survey (see DuMouchel and Duncan 1983; Winship and Radbill 1994).

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Appendix 1: Summary Statistics

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
<i>Fixed-term or agency work</i>	9502	0.7005	0.4580	0	1
<i>Involuntary part-time work</i>	9502	0.1156	0.3198	0	1
<i>Composite external flexibility</i>	9502	0.8161	0.5709	0	2
<i>Balancing-time accounts</i>	9502	0.3054	0.4606	0	1
<i>Paid overtime</i>	9502	0.3137	0.4640	0	1
<i>Composite internal flexibility</i>	9502	0.6192	0.6044	0	2
<i>Combined flexibility categorical</i>	9502	1.4353	0.8453	0	4
<i>Combined flexibility binary</i>	9502	0.8734	0.3326	0	1
<i>Foreign born (13 industries x 16 countries)</i>	208	0.0868	0.0807	0.0047	0.7442
<i>Size</i>	9502	3.2404	2.6230	1	10
<i>Female share</i>	9502	3.2294	1.3945	1	7
<i>Skilled workers</i>	9502	0.3556	0.4787	0	1
<i>Employment loss</i>	9502	1.8545	0.7792	1	3
<i>Worker representation</i>	9502	0.4250	0.4944	0	1
<i>Old East Europe</i>	9502	0.0564	0.2308	0	1
<i>Difficulty finding workers</i>	9502	0.4147	0.4927	0	1
<i>Parents on leave</i>	9502	0.6052	0.4888	0	1
<i>Older workers</i>	9502	2.4050	0.9256	1	7
<i>Interview type</i>	9502	0.2010	0.4008	0	1