Düsseldorf Institute
for Competition Economics

DISCUSSION PAPER

No 328

The China Shock, Employment Protection, and European Jobs

Hedieh Aghelmaleki,
Ronald Bachmann,
Joel Stiebale

December 2019

HEINRICH HEINE
UNIVERSITÄT DÜSSELDORF

d|u|p düsseldorf university press

IMPRINT

DICE DISCUSSION PAPER

Published by

düsseldorf university press (dup) on behalf of
Heinrich-Heine-Universität Düsseldorf, Faculty of Economics,
Düsseldorf Institute for Competition Economics (DICE), Universitätsstraße 1,
40225 Düsseldorf, Germany
www.dice.hhu.de

Editor:

Prof. Dr. Hans-Theo Normann
Düsseldorf Institute for Competition Economics (DICE)
Phone: +49(0) 211-81-15125, e-mail: normann@dice.hhu.de

DICE DISCUSSION PAPER

ISSN 2190-9938 (online) – ISBN 978-3-86304-327-8

The China Shock, Employment Protection, and European Jobs

Hedieh Aghelmaleki* Ronald Bachmann† Joel Stiebale ‡§

December 2019

Abstract

We investigate the effects of Chinese import competition on transitions into and out of employment using comparable worker-level data for 14 European countries. Our results indicate that, on average, Chinese imports are associated with an increased probability that employed workers become unemployed and with a reduction in worker flows from unemployment to employment. In countries with high levels of employment protection, incumbent workers are shielded against the risk of job loss due to Chinese competition, but unemployed workers' prospects seem to be particularly negatively affected in these countries. We also provide evidence that the effects of increased Chinese imports differ by worker groups and the tasks performed on the job.

JEL codes: *F14, F16, J23, J63, J64*
Keywords: *Trade adjustments, China, import competition, worker flows, employment transitions, employment protection*

*Düsseldorf Institute for Competition Economics (DICE)/Heinrich-Heine-Universität Düsseldorf, Universitätsstraße 1, 40225 Düsseldorf, Germany. Email: aghelmaleki@dice.hhu.de.

†RWI, DICE/Heinrich-Heine-Universität Düsseldorf, and IZA. RWI - Leibniz Institute for Economic Research, Hohenzollernstr. 1-3, 45128 Essen, Germany. Email: bachmann@rwi-essen.de.

‡DICE/Heinrich-Heine-Universität Düsseldorf, GEP/University of Nottingham and Vienna University of Economics and Business. Email: stiebale@dice.hhu.de.

§We are grateful to Daniel Baumgarten, Rahel Felder, Hanna Frings, Michael Kvasnicka, Sandra Schaffner and Bernhard Schmidpeter, as well as to conference and workshop participants at the EALE and the ETSG Annual Conferences, the Institute for the World Economy Kiel and at RWI for helpful comments. We gratefully acknowledge financial support of the Leibniz Association.

1 Introduction

Free trade has come under increasing scrutiny from both politicians and economists in recent years, focusing particularly on the potentially adverse effects for workers in highly industrialised countries. In this context, the effects of China's accession to the WTO in 2001 and the accompanying reduction in tariffs and quotas have attracted a lot of attention as the share of Chinese exports to EU countries relative to world manufacturing exports rose from around 2% in 1998 to more than 7% in 2007.[1] Several empirical studies on individual countries have analyzed labour-market responses and distributional consequences of exposure to Chinese trade, with mixed results.[2] An important issue that has hardly been considered in this literature is how the labour-market effects of China's exports on industrialised countries depend on labour-market institutions.

In this paper, we therefore analyse the effects of the large increase in Chinese exports in the early 2000s on European workers. Taking an explicit cross-country perspective allows us to take into account the effects of one of the most important aspects of labour-market institutions, employment protection legislation (EPL). In doing so, we aim at answering the following research questions. First, what were the overall effects of imports from China on European workers' job security and unemployment exit rates? Second, how were the consequences of this shock affected by the prevailing institutional framework in European labour markets, particularly by EPL? And third, which types of workers were most affected, and which types of workers benefited most from higher EPL?

Our analysis is related to several strands of the literature. First, there is a number of studies investigating the effects of imports from China to specific industrialised countries. For example, Bernard, Jensen, and Schott (2006) show that increased exposure to import competition from China leads to lower probability of plant survival and to a sharp decrease in plant employment and output growth in the US. Further, recent studies for the US report larger declines in manufacturing employment and earnings of workers that were most affected by Chinese imports, with the analysis taking place at the regional level (Autor, Dorn, and Hanson, 2013), the plant level (Pierce and Schott, 2016), and – most closely related to our study – the worker level (Autor, Dorn, Hanson, and Song, 2014). Looking at 12 European countries over the period 1996-2007, Bloom, Draca, and Van Reenen (2016) find that higher levels of Chinese import competition caused a fall in employment and the share of unskilled workers at the industry level. For Germany, Dauth, Findeisen, and Suedekum (2014) find that rising imports from China and Eastern Europe had a mild adverse effect on employment at the regional level, while, in the aggregate, losses were more than offset by gains from export exposure.

[1] Authors' calculations based on Comtrade data for all EU countries except Malta.
Similarly, Autor, Dorn, and Hanson (2016) report that China's share of world manufacturing exports increased from almost 2% to 18.8% between 1991 and 2013.

[2] See Autor, Dorn, and Hanson (2016) and Muendler (2017) for recent overviews of the literature.

Second, worker flows, especially job losses and hirings, have been extensively analysed in the literature. There are several reasons for this: Job loss (or the fear of job loss) has been shown to have important negative consequences for long-term earnings (e.g., Jacobson, LaLonde, and Sullivan, 1993, for a seminal article), job satisfaction (Origo and Pagani, 2009), mental health (Reichert and Tauchmann, 2017) and overall worker well-being (Böckerman, Ilmakunnas, and Johansson, 2011). Low hiring rates imply long unemployment duration which can have major effects on human capital depreciation (Schmieder, von Wachter, and Bender, 2016) and negative signaling effects to prospective employees (Kroft, Lange, and Notowidigdo, 2013), both leading to negative duration dependence, and low life satisfaction (Ochsen and Welsch, 2011). At an aggregate level, Elsby, Hobijn, and Şahin (2013) show for OECD countries that unemployment inflows and outflows jointly determine the dynamics of the unemployment rate. They also argue that the relative importance of the two flows for the unemployment rate depends on the institutional context of the countries analysed.

Third, there is a large literature on the role of EPL for worker flows. From a theoretical point of view, higher EPL reduces worker outflows from employment since higher costs for employers to dismiss workers make firing less attractive for a given level of productivity. Because employers are forward-looking, higher EPL also decreases vacancy creation and therefore inflows to employment. Hence, EPL lowers labour turnover but has ambiguous effects on unemployment (Mortensen and Pissarides, 1999).

There exists empirical evidence in line with this theory: Higher EPL is associated with lower aggregate labour market flows, and there is no clear association between EPL and the unemployment rate (Martin and Scarpetta, 2012). More recently, Bassanini and Garnero (2013) have investigated the impact of dismissal regulations on worker flows using cross-country and time-series variation for OECD countries. Their findings point out that job protection regulations tend to reduce the rate of within-industry job-to-job transitions. However they find no significant effect on industry switching or transitions to non-employment. Similarly, Haltiwanger, Scarpetta, and Schweiger (2014) find that more restrictive labour market regulations are associated with smaller firm-level job flows and employment adjustments, in particular in those industries and firm size classes where technological and market-driven factors require labour adjustments more regularly. The welfare effects of lower labour market flows (caused by higher EPL) are not clear-cut, however, as discussed above.

Finally, this paper is also related to a large literature on the effects of international competition induced by trade liberalization more generally (e.g., Pavcnik, 2002; Trefler, 2004; Amiti and Konings, 2007; De Loecker, Goldberg, Khandelwal, and Pavcnik, 2016).[3]

Our contribution to the literature is threefold. First, we provide comparable evidence on the

[3]There is also a large literature on the labour-market effects of offshoring (see, for instance, Grossman and Rossi-Hansberg, 2008; Antras, Fort, and Tintelnot, 2017) and foreign direct investment (e.g., Bachmann, Baumgarten, and Stiebale, 2014). In contrast, this paper focuses on the effects of international competition from China rather than offshoring from high to low-wage countries or foreign direct investment.

labour market effects of China's WTO accession for a large number of European countries, whereas the previous literature has mainly focused on individual countries.[4] The focus on a large set of industrialized countries is of great importance to be able to make a statement about the potential costs and benefits of international trade exposure for the workers from a set of countries making up the majority of the European Union. Second, we explicity analyse job losses and job findings, which allows us to investigate important aspects of worker welfare as described above. Third, we analyse how the effects of imports from a low-wage country vary with cross-country differences in labour-market institutions of importing countries. This allows us to shed light on the importance of EPL by analysing how a common economic shock within industries can lead to different labour market adjustments across countries, a question that is highly relevant from an economic policy point of view.

To answer our research questions, we exploit comparable micro data across 14 European countries from Eurostat's European Union Labour Force Survey (EU-LFS) which contains information on employment status, occupation and socioeconomic characteristics at the worker level. Linking these micro data to the China shock is not straightforward because the industry variable in the EU-LFS data is available at the 1-digit level only, which is too broad to assign the trade shock from China's accession to the WTO in a meaningful way. We therefore use country-specific information about the assignment of occupations to industries, which allows us to combine our worker-level data with trade flows at the industry-level from the UN comtrade data base and to construct a measure of trade exposure that varies across occupations, countries and time. We then relate the probability of employment to variation in the exposure to Chinese imports within occupations and countries. To account for possible endogeneity of Chinese imports, we apply an instrumental variable (IV) strategy in which we exploit cross-occupation variation in import shares before China's entry into the WTO and time-series variation in overall Chinese exports.[5]

Our results indicate that exposure to Chinese imports causes with higher flows from employment to unemployment and reduced flows of unemployed workers to employment. Further, we find that worker flows from unemployment to employment are significantly more affected in countries with high levels of EPL.[6] Thus, our results indicate that a high level of EPL might prevent (re-)entry of individuals into employment as the labour market reacts to the China shock. We also provide evidence of heterogeneous effects, i.e. low-skilled workers and workers in occupations with high routine intensity suffer most from Chinese imports, but these effects are partially alleviated by a higher level of EPL.

[4] Bloom, Draca, and Van Reenen (2016) is a notable exception. However, they focus on adjustments at the firm-level rather than the impact on individual workers. Chan (2017) analyses how the effects of Chinese imports differ across US states with different labour market characteristics such as union density and minimum wages.

[5] Our results are robust to using alternative instruments such as the import exposure of industries in the US.

[6] Unfortunately, the EU-LFS data do not contain information on the occupation of the previous job if a worker is employed at the time of the interview – this information is only collected for unemployed persons. We are therefore not able to analyse direct job-to-job transitions.

Our results are consistent with contributions in the international trade literature which argue that increased exposure to foreign competition induces domestic firms to downsize and leads to a reallocation of resources across firms (e.g., Melitz, 2003; Pavcnik, 2002). However, the reduction in domestic production might be partly offset by firms reallocating workers to different activities. For instance, Bloom, Romer, Terry, and Van Reenen (2013) develop a theory to show that Chinese competition can decrease the returns to old production activities and reduces the opportunity cost of new activities such as innovation if production factors are "trapped" inside firms due to market frictions. It is plausible that workers are more likely to be "trapped" inside firms in countries where EPL and thus firing costs are high (e.g., Shu and Steinwender, 2019). EPL will thus affect the speed at which firms can adjust their production process through hiring and firing and the level of reallocation of resources across firms (e.g., Aghion, Burgess, Redding, and Zilibotti, 2008). While workers' risk of becoming unemployed might be higher when EPL is low, unemployed workers might benefit from reallocation induced by import competition, in particular when firing costs are low. During our sample period, China mainly had a comparative advantage in the production of products with low skill and technology intensity. It is likely that relatively unskilled workers and those performing routine tasks are most likely to be negatively affected by this reallocation process.

The rest of this paper is organized as follows. Section 2 provides a description of our main data sources and presents descriptive evidence. Our identification strategy and empirical model is introduced in section 3. Results of our empirical analysis are discussed in section 4 and section 5 concludes.

2 Data and descriptive evidence

In our empirical analysis, we use micro data on individual workers, in particular for their labour market status, transitions between labour market states, and socio-demographic characteristics, as well as data on Chinese imports at the country-sector level and on EPL at the national level. Micro data at the individual level come from the EU-LFS database, which includes all EU Member States as well as Norway, Iceland and Switzerland. For reasons of data availability with respect to both EU-LFS and the other data sources described below, our final sample of analysis consists of 14 European countries: Austria, Belgium, Czech Republic, Germany, Denmark, Spain, Finland, France, Greece, Hungary, Italy, Sweden, Slovak Republic and the United Kingdom.

The EU-LFS is based on national household surveys conducted by the national statistical agencies of the participating countries. This means that the data are of high quality and fully representative for the resident population (Eurostat, 2018). Furthermore, the underlying surveys apply harmonized concepts and definitions, e.g. for the economic sector (NACE) and the occupation (ISCO) of individual workers, which enables us to perform a cross-country comparison.

The EU-LFS data include information on a person's current and previous labour market status

which allows us to compute the stock of employed, unemployed and non-participating individuals, along with transition rates between every labour market state by year and country. In the data, an individual's current labour market status is defined according to the ILO standard.[7] By contrast, the labour market status in the previous year is based on self-perception of the interviewed person. Although these two definitions might not overlap perfectly, using both to identify labour market flows from one year to the next is preferable to alternative approaches, which would not allow for consistent measurement across countries (see Bachmann and Felder, 2018, for details).[8] The EU-LFS data have been used in a related context by a number of other studies, e.g. Angrist and Kugler (2003).

We display the labour market transition rates in the countries analysed in Figure 1. In general, the transition rates from employment to unemployment (EU), shown by the dashed lines, vary from 0% to 6%, and the transition rates from unemployment to employment (UE), depicted by the solid lines, are in the range of 10% to 60%. The transition rates behave very differently across the countries in our sample. For example, some countries exhibit falling employment to unemployment transition rates over time (such as France and Spain), a few others display fairly constant transition rates (e.g., Finland, Italy, Sweden, and the UK), and the rest show mean-preserving fluctuations in transition rates from one year to the next. For worker flow rates from unemployment to employment, we still observe heterogeneity across countries, but for most countries the rates are fairly constant over the time period analysed.

Employment protection legislation (EPL) refers to the rules governing the hiring and firing of workers, which are summarized by EPL indicators constructed by the OECD (OECD, 2013). These indicators measure the requirements with respect to notification, negotiation and authorisation before an employment relationship is terminated by the employer, as well as severance pay, and the definition and costs of unfair dismissal. The more difficult and/or costly the requirements make the hiring or firing of a worker, the higher the value of the EPL indicator, which ranges from one to five. The OECD provides two main EPL indicators, one for regular workers, including provisions for collective dismissals, and one for temporary workers. As there are more regular workers than temporary workers in the countries we analyse, we select the EPL indicator which applies to regular workers for our analyses.

Figure 2 illustrates trends in the strictness of employment protection of regular contracts for European countries observed in our sample between 1998 and 2007. The levels of EPL for regular workers increased slightly in three countries (namely, Belgium, France, and the UK), decreased in five countries (Austria, the Czech Republic, Finland, Slovakia, and Sweden), and remained

[7] This means that a person is defined as employed if he or she performed some work for wage/salary or for profit or family gain, or – if temporarily not at work – had a formal attachment to his or her job or was with an enterprise; and as unemployed if he or she was without work, currently available for work, and seeking work (ILO, 1988).

[8] As we discuss in the Appendix, and document in Table A1, dropping observations with contradictory employment status based on alternative definitions does not affect our results notably.

unchanged in six countries (Denmark, Germany, Greece, Hungary, Italy, and Spain).

Information on trade flows is obtained from the UN Comtrade (United Nations International Trade Statistics) database. The database contains annual bilateral imports and exports by product category for more than 170 countries. Trade values are available in various aggregations. We use data classified using 4-digit SITC (standard international trade classification) Rev.3 codes which we match and aggregate to 3-digit industry level codes at the NACE classification using a correspondence table by the UN. A detailed description of the database can be found in Autor, Dorn, and Hanson (2013). The main focus of our empirical analysis is on manufacturing sectors (which account for more than 95% of trade flows in goods), although we did not drop sectors related to agriculture, mining and fuel products (all together account for less than 5%). Data on domestic production is obtained from the OECD STAN database, in which production (or gross output) at current prices corresponds to the value of goods and services produced in a certain industry/occupation in country c and year t. Descriptive statistics for our main variables of interest are displayed in Table 1.

Figure 3 shows the significant rise of imports originating from China as a share of domestic production for the EU countries in our sample between 2000 and 2007. This increase varies considerably across countries. For example, the share of China's imports in domestic production increased notably in the Czech Republic in 2007 compared to 2000, while it remained quite low and unchanged for Denmark and the UK during this period.

3 Methodology

The aim of the empirical analysis is to identify the effects of Chinese imports on worker flows in European countries. For this purpose, we need a measure of import exposure that can be matched to individuals. One challenge in the empirical analysis is that imports are measured at the industry level but worker-level information in the EU-LFS only contains sectoral information at the 1-digit level, which is far too broad to construct a measure of import exposure. However, EU-LFS contains information about an individual's occupation at the 3-digit level. Further, we obtained information about the distribution of occupations across industries, both at the 3-digit level, from Eurostat's tailor-made extraction procedure[9]. We are therefore able to follow Ebenstein, Harrison, McMillan, and Phillips (2014) and Baumgarten, Geishecker, and Görg (2013) in assigning the industry-level variables using the distribution of occupations across industries. Our occupation-specific variables, i.e. import exposure, as well as the industry-level control variables contained in vector W below, are constructed as:

[9]See `https://ec.europa.eu/eurostat/documents/1978984/6037342/EULFS-Database-UserGuide.pdf`; the service is available through the Eurostat user support at `https://ec.europa.eu/eurostat/help/support`.

$$Y_{oct} = \sum_{j=1}^{J} \frac{L_{ojct}}{L_{oct}} Y_{jct} \tag{1}$$

where Y_{oct} is a sectoral/occupation-specific variable such as import exposure for occupation o in country c at time t. L is the level of employment and industries are denoted by j. The distribution of industries across occupations (L_{ojct}/L_{oct}) thus allows us to map industry-specific variables (Y_{jct}) into occupation-specific variables (Y_{oct}). We use this procedure also to define our measure of exposure to Chinese imports, IMP_{oct}^{Ch} as the value of industry/occupation o's imports from China in country c and year t relative to domestic production ($DomProd_{oct}$).

To analyse the effects of Chinese imports on worker flows, we relate the probability of making a transition from employment to unemployment, and from unemployment to employment, to our measure of import exposure as follows:

$$Pr(U_{ioct}|E_{ioc,t-1}) = F\left(IMP_{oc,t-1}, EPL_{c,t-1}, IMP_{oc,t-1} \times EPL_{c,t-1}, X_{i,t-1}, W_{oc,t-1}, C_{c,t-1}, \alpha_c, \delta_{t-1}\right) \tag{2}$$

$$Pr(E_{ioct}|U_{ioc,t-1}) = F\left(IMP_{oc,t-1}, EPL_{c,t-1}, IMP_{oc,t-1} \times EPL_{c,t-1}, X_{i,t-1}, W_{oc,t-1}, C_{c,t-1}, \alpha_c, \delta_{t-1}\right) \tag{3}$$

E_{ioct} is an indicator variable which takes on value one if individual i working in occupation o in country c in period $t-1$ becomes unemployed in time period t; flows from unemployment to employment (U_{ioct}) are defined analogously. $IMP_{oc,t-1}$ measures the level of import exposure for an occupation — scaled by domestic production — where the level of imports is assigned to occupations in each country using equation (1). EPL is a country-specific measure of employment protection. We are particularly interested in the effects of import exposure and how it varies with the level of employment protection, captured by the interaction term $IMP_{oc,t-1} \times EPL_{c,t-1}$.

In addition, we include a large number of control variables. X denotes individual characteristics, i.e. sex, marital status, age (with the categories young: 15-29 years old, middle-aged: 30-54, and elderly: 55-64), and education (with the categories of education level low: ISCED 0-2, medium: ISCED 3-4, and high: ISCED 5-6); moreover, to account for cross-sectoral differences in production technology or competition, we control for occupation/industry-country specific control variables (W), i.e. sectoral production, labour productivity, the average wage, and capital intensity; C is a vector of country-specific variables, i.e. GDP per capita (in log terms) and the annual growth rate of real GDP. α_c and δ_t are country and year fixed effects which control for macroeconomic changes common to all countries and permanent cross-country differences in institutions. In some specifications, we also control for occupation fixed effects.[10] We experiment with different functional

[10] As documented in the Appendix, our results are robust to controlling for country-year fixed effects. Unfortunately,

forms for $F(.)$ by estimating Logit, Probit and linear probability models. As the results turn out to be very similar, we only report the results from the Probit model.

Although we introduce a large set of control variables, including country, occupation and year fixed effects, one might be concerned about remaining unobserved factors which lead to an increased inflow of Chinese imports, and simultaneously affect subsequent labour-market outcomes. As a result, Chinese imports might be endogenous to occupation-country-level employment outcomes. We address this issue by conducting an IV approach based on lagged import shares similar to Bloom, Draca, and Van Reenen (2016).[11] Specifically, we use $\left(IMP_{o,1998} \times \frac{IMP_{t-1}}{IMP_{1998}}\right)$ as an instrument for $IMP_{oc,t-1}$ where IMP_{t-1} are Chinese imports to *all* European countries across industries at time period $t-1$ and $IMP_{o,1998}$ denotes import exposure of occupation o, again to all European countries, in the base period, the year 1998.

The idea behind the instrument is to capture time-series variation in Chinese supply shocks. These supply shocks are likely to have a higher impact on industries in which China has a comparative advantage (see Bloom, Draca, and Van Reenen, 2016) which is captured by the initial conditions weight $IMP_{o,1998}$. The instrument is not country-specific to avoid some endogeneity concerns which arise when using initial conditions as instruments. This is likely to be a strong instrument as it has been shown that over the 1997 to 2005 period, more than three quarters of the aggregate growth of Chinese imports was from the expansion of existing products rather than from adding new products (Amiti and Freund, 2010). The IV specifications are implemented as a control function approach where residuals from a first stage regression are inserted into second stage Probit models.

A remaining concern for the instrument described above is that the initial level of Chinese imports may be correlated with unobservable characteristics at the occupation level which determine subsequent labour-market outcomes. We believe that this is unlikely to be the case since the initial level of Chinese imports is likely to reflect past comparative advantage of China rather than European labour market conditions. Nonetheless, as a robustness check, we use an alternative IV, the exposure to Chinese imports at the occupational level in the US ($IMP^{US}_{o,t-1}$). Since this measure is time-varying, it allows us to control for occupation fixed effects.

4 Results

In this section, we present the results of our empirical analysis. We start by estimating the conditional transition probability into and out of unemployment as described by equations 2 and 3, using

we cannot control for occupation or occupation-year fixed effects in our baseline specifications as our instrumental variable only varies by occupation.

[11] In contrast to Bloom, Draca, and Van Reenen (2016), our import exposure variable and the corresponding instrument are specified in levels rather than differences over time since we are unable to follow individuals over a long time period.

both a regular probit model and a control function approach. In the second step of our analysis, we investigate the role of EPL in detail. In a third step, we examine heterogeneous effects on different worker groups. Finally, we conduct a battery of robustness tests in order to check whether our results are robust to including additional control variables, another instrumental variable, and alternative specifications.

4.1 The impact of the China shock on labour market transitions

We start with the results related to our first research question, i.e. to what extent higher imports from China affect workers' employment security, proxied by the transition rate from employment to unemployment, and workers' job finding probability, measured by the transition rate from unemployment to employment. Table 2 presents the core results of our econometric analysis for our main variables of interest, where Panel A contains the results for the transition probability from employment to unemployment and Panel B the results for the transition probability in the reverse direction.[12]

The coefficients on the relative imports variable suggest that higher exposure to Chinese imports are correlated with a higher transition rate from employment to unemployment. A potential concern about these results is that our import variable might be endogenous to employment outcomes, thus raising concerns about a potential bias in the coefficients. To address this concern, we instrument our imports variable with lagged import shares multiplied with the overall growth in Chinese imports as explained in Section 3. The first-stage results reported at the bottom of the panel indicate that our instrument is a strong predictor of relative imports (i.e., the F-test statistic is equal to 203.09). Turning to the second stage, the results of the control function (CF) approach reported in Column (2) show that the coefficient remains significant and even increases compared to the baseline specification reported in Column (1).

As for the transition rate from unemployment to employment (Panel B), exposure to imports from China is strongly negatively correlated with the unemployment outflow rate. This can be interpreted as higher exposure to Chinese imports reducing the job-finding rate of the unemployed and therefore increasing the duration of unemployment.

Again, we use a control function approach in order to take potential endogeneity into account. As in the case of the transition rate from unemployment to employment, the instrument is strong (F-Statistic: 390). Sign and significance remain robust to the use of instruments and the coefficient only changes slightly.

The sample-average marginal effects of the variable relative imports, corresponding to coefficients in Column (1) of Panels A and B, imply that a 1 percentage point (pp) increase in relative imports from China is associated with an increase in the probability of making a transition from

[12] Further control variables as explained in Section 3 are included but not displayed. A full set of results is displayed in Table A3.

employment to unemployment by 0.19 pp and a decrease in the probability of making a transition from unemployment to employment by 2.4 pp. These are similar to the average marginal effects that we estimate from the IV-Probit models in Column (2), namely 0.28 pp for the propensity to become unemployed in Panel A, and 2.9 pp for the probability of becoming employed in Panel B. The size of these marginal effects is equivalent to about 6% to 10% of the mean transition probabilities per year.[13] The results indicate that Chinese competition has quantitatively important effects, particularly for the job prospects of employed and unemployed workers.

4.2 The role of EPL

Turning to the second research question, i.e. which role EPL plays for the labour market adjustment to the China shock, we start by looking at the coefficient on EPL only. For the transition rate from employment to unemployment (Panel A in Table 2), the negative and significant coefficient suggests that stricter dismissal regulations (associated with higher EPL) go together with a lower transition probability from employment to unemployment. This is in line with theoretical predictions as higher adjustment costs can be expected to lead to lower worker flows. For transitions from unemployment to employment, we find no significant correlation with the level of EPL.

In order to investigate whether EPL has an influence on the labour market effects of Chinese imports, we examine the interaction between employment protection regulations and imports from China on the transition rates between employment and unemployment. Looking at the transition rate from employment to unemployment first, the results of the Probit model do not show a significant coefficient for the interaction of EPL and Chinese imports (column 3 in Panel A of Table 2). However, the interaction term becomes statistically significant in the control function approach. The instruments are again strong, with an F-Statistic for the interaction of about 118 in the first stage and a value of the Kleinbergen-Paap Wald F-Statistic of about 47. The negative coefficient on the interaction term suggests that Chinese imports affect the transition rate from employment to unemployment to a different extent in countries with different levels of EPL.[14]

In order to quantify the importance of the level of EPL for the size of the import effects in more detail, Figures 4 and 5 show average marginal effects of a 1 pp increase in relative imports for a range of different values of EPL and different initial values of imports. As can be seen in Figure 4, for small values of EPL below the mean (which equals 2.45), an increase in relative imports raises the probability of transiting from employment to unemployment substantially. For instance, for a level of EPL equal to 1.9, a 1 pp increase in import exposure increases the probability of transition to unemployment by about 1 pp for initial values of import exposure between the 25th and the

[13] As documented in Table 1, yearly transition probabilities are equal to 3% for transitions from unemployment to employment and 27% for transitions from unemployment to employment.

[14] Note that in non-linear models like the Probit model, a negative coefficient for the interaction term does not necessarily imply a lower marginal effect (see, for instance, Greene, 2010). However, as we discuss below, marginal effects of Chinese imports on transitions to unemployment are indeed lower when EPL is high.

90th percentile. The effect is even twice as large when the value of EPL equals 1.4 and the initial level of Chinese competition is high. In contrast, for levels of EPL above the mean, the effect on the probability of making a transition is close to zero. Therefore, EPL seems to shield workers from the risk of becoming unemployed as a result of Chinese competition.

In order to analyse whether the above results are driven by the way EPL enters the regression, we construct a dummy variable which is equal to one if the value of EPL is above 2.46 (the mean of EPL in our sample), and equal to zero otherwise. Using this instead of the original EPL variable yields qualitatively similar results, i.e. the coefficients are still negative, but mostly insignificant.

As for the transition rate from unemployment to employment, the interaction term between EPL and Chinese imports in the Probit regression displays a significantly negative coefficient (column 3 in Panel B of Table 2). Figure 5 shows the marginal effects of the variable relative imports for different values of EPL, for the case of the conditional probability of an unemployed worker becoming employed. From the graph we can note that at lower levels of EPL, the effect of higher Chinese imports on the transition rate to employment is smaller than at higher values of EPL when the initial level of import penetration is not too high. For instance, for a value of EPL of 1.4, an increase in Chinese import exposure by 1 pp is associated with a decrease in the probability of a transition out of unemployment by about 2.2 pp. When the level of EPL increases to 4.4, the estimated effect increases to more than 3 pp for low initial values of Chinese imports. One plausible interpretation for this result is that unemployed workers' employment prospects are particularly adversely affected when labour market rigidities prevent restructuring and reallocation processes after a trade shock.

This implies that in countries with higher levels of EPL, imports from China are more negatively correlated with the transition rate from unemployment to employment than in countries with lower levels of EPL. While the interaction is not statistically significant in the control function approach, separate coefficients for countries below and above the mean value of EPL in columns 5 and 6 clearly indicate that the negative effects of Chinese competition are more pronounced when EPL is high. Therefore, EPL seems to aggravate the negative impact of Chinese competition on the job prospects of unemployed workers.

Taken together, these results imply that countries with low employment protection adjusted to the China shock both through the firing and the hiring margin, whereas countries with high employment protection mainly adjusted through the hiring margin. The level of EPL therefore plays an important role for the reallocation of employment as a response to Chinese imports. This has important policy implications which we discuss in the conclusion.

4.3 Were different worker groups affected differently?

Chinese import exposure differed strongly across industries, which in turn are characterised by a differing composition of their workforce. As a consequence, the China shock is likely to have generated heterogeneous effects amongst European workers. In order to analyse this heterogeneity – our third research question –, we use the binary version of our EPL variable introduced in the preceding section to compare low versus high EPL regimes, and run regressions that include the three-way interaction of EPL × Chinese imports × worker characteristics. In doing so, we focus on workers' age, education, and the tasks performed on the job.

The results for workers belonging to different age groups are presented in Table 3. Older workers are on average less likely to make a transition from employment to unemployment when import penetration and EPL is low, indicated by the negative coefficient for $Age55-64$ (Panel A). However, there is evidence that this group is most strongly affected by Chinese imports as the interaction term between $Age55-64$ and IMP is positive, and significant in the control function approach. A potential explanation is that these workers are less able to adapt to the reorganization of production processes that firms implement when faced with competition from China. The corresponding sample-average marginal effects of an increase in Chinese imports are depicted in Table A4 in the Appendix. For instance, a one pp increase in the Chinese imports ratio is associated with an increase in the probability to become unemployed of 0.66 pp for older workers when EPL is low. The marginal effect is less than half of the size for workers aged between 30 and 54 and is even smaller and statistically insignificant for workers younger than 30 years. The marginal effects are smaller for all age groups when EPL is high. Coefficients and marginal effects for transitions from unemployment to employment are depicted in Panel B of Table 3 and Panel B of Table A4 in the Appendix. The results indicate that mostly unemployed workers between age 30 and 54 are less likely to re-enter the labour force when Chinese imports increase. This negative effects is somewhat amplified when EPL is high, although the results are quite imprecisely estimated.

We now turn to the question whether individuals with different skill levels are affected differently by increased imports from China. We classify individuals into three skill groups: low-skilled (individuals with primary or lower secondary education), medium-skilled (individuals with upper and post-secondary education and/or a completed apprenticeship), and high-skilled (individuals with tertiary education). It becomes apparent that the lower the skill level, the higher is the likelihood to make a transition from employment to unemployment (Table 4, Panel A). The difference between high-skilled workers and workers with lower skill increases with import competition when EPL is low as indicated by the positive interaction terms Chinese imports × low-skilled and Chinese imports × medium-skilled. The corresponding sample-average marginal effects (see Table A5 in the Appendix) suggest that a 1 pp increase in Chinese imports is associated with a 0.7 pp increase in the probability of unemployment for low-skilled workers when EPL is low (significant at the one percent level). For high- and medium skilled workers the corresponding marginal effects are -0.32

(statistically insignificant) and 0.27 (significant at the 5% level). However, the results from the control function approach suggest that low- and medium-skilled workers benefit more from high EPL when imports increase as indicated by the negative triple interaction terms. For instance, when EPL is high, the average marginal effect of a 1 pp increase in Chinese imports for low-skilled workers decreases to approximately 0.1 pp and is statistically indistinguishable from zero. This could be due to EPL playing a more important role for industries and occupations with a high share of low-skilled workers.

Looking at the transitions from unemployment to employment, results in Panel B of Table 4 indicate that low- and medium-skilled workers are less likely to make such a transition, i.e. their job-finding rate out of unemployment is lower. Low-skilled workers are also affected more strongly by Chinese imports in their transitions from unemployment to employment than other skill groups, indicated by the negative interaction term between *low-skilled* and *IMP*. However, this difference is less pronounced when employment protection is high as the triple interaction term is positive. The corresponding marginal effects (Panel B of Table A5 in the Appendix) suggest that the probability that unemployed re-enter the labour force decreases with Chinese imports for low-skilled workers but (weakly significantly) increases for high-skilled workers when EPL is low. A potential explanation is that firms facing import competition differentiate their production from Chinese competitors towards activities that require higher skills.[15] The heterogeneity in responses across skill groups of unemployed individuals is, however, reduced when EPL is high.

Finally, we analyse whether Chinese imports affect the propensity of becoming (un)employed differently depending on the job tasks performed by workers. In order to obtain information on the task content of occupations, we follow the strategy of Hardy, Keister, and Lewandowski (2018) and use the Occupational Information Network (O*NET) database and merge it with our EU-LFS data through the occupation code.[16] To compute our measure of task routineness of an occupation, we follow an approach similar to Goos, Manning, and Salomons (2014) and Hardy, Keister, and Lewandowski (2018), among others: We first standardize the values of task items in the first year and create the DOT task measures of Autor, Levy, and Murnane (2003) (i.e., Routine Cognitive, Routine Manual, Non-routine Cognitive Analytic, and Non-routine Cognitive Interpersonal). After that, we standardize these task content measures again and define the Routine Task Intensity (RTI) index as $RTI = log(\frac{RC+RM}{2}) - log(\frac{NRCA+NRCI}{2})$.

Table 5 displays the results. As can be seen in Panel A, we find, first of all, that the coefficients on variables reflecting medium and high levels of RTI are positive and significant, implying that routine intensity is associated with a higher probability of making a transition from employment to unemployment. This is consistent with findings from the literature that workers in jobs with high routine intensity face worse employment outcomes than workers with low routine intensity (Cortes,

[15] This is consistent with the finding by Bloom, Draca, and Van Reenen (2016) that Chinese import competition is associated with higher innovation in European firms.

[16] Data and codes are prepared following Institute for Structural Research, 2018.

2016; Goos, Manning, and Salomons, 2014). This effect is even enhanced through Chinese imports, although this is only statistically significant in case of the Probit model but not the control function approach. Furthermore, when Chinese imports grow, workers in jobs with higher RTI are less likely to become unemployed than workers in jobs with low RTI when EPL is high. Therefore, EPL seems to play a protective role in this case.

Turning to the results for the transition rate from unemployment to employment, we find that higher RTI in the previous job is associated with a higher probability of making such a transition. This is in line with the previous literature which found a higher churning rate (i.e. higher transition probabilities both from employment to unemployment and from unemployment to employment) for workers who perform jobs with higher RTI (Bachmann, Cim, and Green, 2019). This effect seems to be reversed through higher imports from China when EPL is low, indicating that workers in occupations with high RTI are most likely to be negatively affected by Chinese imports. This is probably due to Chinese imports replacing products which are made using routine production technologies. Moreover, the estimation results in Panel B suggest that when EPL is low, workers previously employed in job with low RTI are more likely to re-enter employment when Chinese competition rises.[17] However, the three-way interaction terms suggest that when EPL is high and Chinese imports rise, the likelihood of exiting unemployment to employment is higher for individuals who were previously in jobs with medium or high RTI.

4.4 Robustness checks

We conduct a series of robustness checks to assess the sensitivity of our previous estimates using additional control variables and alternative specifications. First, as also noted by Bassanini and Garnero (2013), the effect of employment protection legislation is expected to mainly hit the flows of regular workers with permanent contracts. Hence, one would preferably narrow the sample by excluding those that are under temporary contracts. Unfortunately, the EU-LFS data do not provide information on the type of contract in the previous year, i.e. before a potential transition. It is therefore not possible to analyse outflow rates from jobs differentiated by contract type. Instead, as a robustness test, we include the share of workers with temporary contracts at the occupation level interacted with our relative import variable as an additional control. As the results in Columns (1) and (2) of Panels A and B in Table 6 show, the coefficient on the interaction term between the share of temporary workers and imports is negative and significant in Panel A and only weakly significant in Panel B, but the coefficients on our main variables of interest and their significance level are qualitatively similar to those obtained in the baseline specifications.

[17] The corresponding average marginal effects are displayed in Table A6 in the Appendix. Note that the effects for high-RTI individuals is rather large as a one pp increase in the Chinese imports ratio is associated with a increase in re-employment probability of about 6.6 pp, i.e. more than 20% of the unconditional transition probability displayed in Table 1. However, this effect is also rather imprecisely estimated.

Second, one might be concerned that our results are driven by European exports to China which could be correlated with Chinese imports to European countries. For this purpose, we construct a measure of export exposure similar to our import measure at the occupation level. As this is weighted by domestic production, we include the latter as separate control variable as well. Results documented in columns (3) and (4) of Table 6 show that the coefficients on the variable exports is negative and significant, implying that higher exports to China reduce the probability of transitions into and out of unemployment. However, as the coefficients for imports show, our previous results are robust to inclusion of this additional control.

Our instrumental variable approach controls for potential endogeneity of Chinese imports to workers' labour market outcomes. However, as noted by Bloom, Draca, and Van Reenen (2016), one could still argue that the initial level of Chinese imports might also be correlated with unobserved industry characteristics that affect subsequent employment outcome patterns, since our IV strategy does not allow to include occupation fixed effects. In order to address this issue, we perform two types of robustness tests.

First, we re-estimate our (potentially endogenous) Probit specifications in Table 2 (Columns (1) and (3) of Panels A and B) and include a full set of three-digit occupation dummies to capture time-invariant differences between occupations. Estimation results are reported in Columns (1) and (2) of Panels A and B in Table 7. The results are qualitatively similar to those obtained in the baseline specification.

Second, we use imports to the US, $IMP^{US}_{o,t-1}$, as an alternative instrument for our import measure. This is similar in spirit to Autor, Dorn, and Hanson (2013), who use import exposure in other countries with comparable characteristics. In contrast to the first alternative IV strategy, this specification allows for the inclusion of occupation fixed effects. The first-stage results, at the bottom of each panel, show that the instrument is strong and has a statistically significant relationship with import exposure. The second-stage results of this alternative instrument are qualitatively similar to the initial conditions instrument (Table 7, Columns (3) and (4) of Panels A and B). More precisely, the coefficients on the interaction terms remain negative and with similar significance levels, but they are larger in these IV specifications compared to the previous ones.

As mentioned in the data section, the definition of employment status in EU-LFS can be based on two variables which indicate different values in a few cases. However, as we discuss in more detail in the Appendix and document in Table A1, our results are robust to excluding observations with ambiguous employment status. In Table A1, we also document the results of regressions which are based on a sample split based of the mean level of EPL instead of interaction terms. The coefficients are again consistent with larger effects of Chinese imports on transitions to unemployment in countries where EPL is low and larger effect on transitions to employment in countries with high levels of EPL.

In our main specification, we use control variables at the country-year level instead of country-

year fixed effects to exploit a higher of variation in Chinese imports. However, as documented in Table A3, our results are robust to replacing time-varying controls at the country level with country-year fixed effects. All in all, our results are therefore robust to a number of alternative specifications.

5 Conclusion

In this paper, we analyse the effects of a large increase in Chinese exports on European workers following the accession of China to the WTO. Using comparable micro data across 14 European countries allows us to estimate heterogeneous effects across countries with different labour-market institutions. We try to answer three research questions. First, what were the effects on European workers' job security, i.e. outflows from employment to unemployment, and unemployment exit rates to employment? Second, how were the consequences of this shock affected by different levels of employment protection legislation (EPL)? And third, given the important increase in Chinese imports, which types of workers were most affected, and which types of workers benefited most from higher EPL?

Our results indicate that Chinese exports strongly affected workers' job security as well as the job-finding rates of the unemployed in the EU. In particular, we find that the increased exposure to Chinese imports was associated with higher worker flows from employment to unemployment, and with a reduced probability that unemployed workers become employed. Second, we find that countries with high levels of EPL display a stronger reduction of worker flows from unemployment to employment as Chinese imports increased. Thus, our results indicate that a high level of EPL prevents (re-)entry of individuals into employment. Third, our results indicate important differences between worker groups, especially with respect to age, skill, and job tasks.

The results of our analysis have important implications for welfare considerations with respect to the effects of international trade on individual workers, as well as for economic policy. Increased inflows into unemployment as well as reduced outflows from unemployment imply the loss of job- or industry-specific human capital, as well as higher costs of searching for a new job. Furthermore, this seems to affect some worker groups more strongly than others. Our results thus complement the studies that have investigated the labour-market effects of the China shock on specific national labour markets (e.g. Autor, Dorn, and Hanson, 2013; Dauth, Findeisen, and Suedekum, 2014).

Finally, the level of employment protection plays an important role in this context. Higher employment protection seems helpful in shielding workers from job loss, i.e. in protecting insiders, as import competition rises. In countries with high levels of employment protection, labour-market adjustment mainly works through the hiring margin, i.e. firms hire less workers instead of laying off incumbent ones. This has the positive effect of providing higher job security to employed workers. However, it also has a number of negative effects. First, it is likely to increase the

segregation of national labour markets, i.e. to exacerbate the dual structure of the labour market which characterises a number of European countries (Dolado, 2016). Second, adjustment along the hiring margin is likely to be much slower than adjustment along the firing margin. While good for incumbent workers, this means that relatively unproductive jobs are safeguarded, i.e. "creative destruction" is prevented, at least in the short run. In the longer run, this could imply lower productivity growth – thus reducing the positive productivity effects found by Bloom, Draca, and Van Reenen (2016) – and eventually lower employment in the affected sectors.

One open question in this context is the role of direct job-to-job transitions, which we could not investigate because our cross-country data set does not include retrospective information on the occupation or sector of an employed person. Investigating the role of direct job-to-job transitions for the adjustment to the China shock using national data sets is therefore clearly warranted.

References

Aghion, P., R. Burgess, S. J. Redding, and F. Zilibotti (2008): "The unequal effects of liberalization: Evidence from dismantling the License Raj in India," *American Economic Review*, 98(4), 1397–1412.

Amiti, M., and C. Freund (2010): "The anatomy of China's export growth," in *China's Growing Role in World Trade*, ed. by R. C. Feenstra, and S.-J. Wei, chap. 1, pp. 35–56. University of Chicago Press.

Amiti, M., and J. Konings (2007): "Trade liberalization, intermediate inputs, and productivity: Evidence from Indonesia," *American Economic Review*, 97(5), 1611–1638.

Angrist, J. D., and A. D. Kugler (2003): "Protective or counter-productive? Labour market institutions and the effect of immigration on EU natives," *The Economic Journal*, 113(488), F302–F331.

Antras, P., T. C. Fort, and F. Tintelnot (2017): "The margins of global sourcing: Theory and evidence from US firms," *American Economic Review*, 107(9), 2514–64.

Autor, D. H., D. Dorn, and G. H. Hanson (2013): "The China syndrome: Local labor market effects of import competition in the United States," *American Economic Review*, 103(6), 2121–68.

——— (2016): "The China shock: Learning from labor-market adjustment to large changes in trade," *Annual Review of Economics*, 8, 205–240.

Autor, D. H., D. Dorn, G. H. Hanson, and J. Song (2014): "Trade adjustment: Worker-level evidence," *The Quarterly Journal of Economics*, 129(4), 1799–1860.

Autor, D. H., F. Levy, and R. J. Murnane (2003): "The skill content of recent technological change: An empirical exploration," *The Quarterly Journal of Economics*, 118(4), 1279–1333.

Bachmann, R., D. Baumgarten, and J. Stiebale (2014): "Foreign direct investment, heterogeneous workers and employment security: Evidence from Germany," *Canadian Journal of Economics*, 47(3), 720–757.

Bachmann, R., M. Cim, and C. Green (2019): "Long-run patterns of labour market polarisation: Evidence from German micro data," *British Journal of Industrial Relations*, 57(2), 350–376.

Bachmann, R., and R. Felder (2018): "Labour market transitions, shocks and institutions in turbulent times: A cross-country analysis," IZA Discussion Paper 11443, IZA.

Bassanini, A., and A. Garnero (2013): "Dismissal protection and worker flows in OECD countries: Evidence from cross-country/cross-industry data," *Labour Economics*, 21, 25–41.

Baumgarten, D., I. Geishecker, and H. Görg (2013): "Offshoring, tasks, and the skill-wage pattern," *European Economic Review*, 61, 132–152.

Bernard, A. B., J. B. Jensen, and P. K. Schott (2006): "Survival of the best fit: Exposure to low-wage countries and the (uneven) growth of US manufacturing plants," *Journal of International Economics*, 68(1), 219–237.

Bloom, N., M. Draca, and J. Van Reenen (2016): "Trade induced technical change? The impact of Chinese imports on innovation, IT and productivity," *The Review of Economic Studies*, 83(1), 87–117.

Bloom, N., P. M. Romer, S. J. Terry, and J. Van Reenen (2013): "A trapped-factors model of innovation," *American Economic Review*, 103(3), 208–13.

Böckerman, P., P. Ilmakunnas, and E. Johansson (2011): "Job security and employee well-being: Evidence from matched survey and register data," *Labour Economics*, 18(4), 547–554.

Chan, J. (2017): "Labour market characteristics and surviving import shocks," *The World Economy*, 42(5), 1288–1315.

Cortes, M. (2016): "Where have the middle-wage workers gone? A study of polarization using panel data," *Journal of Labor Economics*, 34(1), 63–15.

Dauth, W., S. Findeisen, and J. Suedekum (2014): "The rise of the East and the Far East: German labor markets and trade integration," *Journal of the European Economic Association*, 12(6), 1643–1675.

De Loecker, J., P. K. Goldberg, A. K. Khandelwal, and N. Pavcnik (2016): "Prices, markups and trade reform," *Econometrica*, 84(2), 445–501.

Dolado, J. J. (2016): "EU dual labour markets: Consequences and potential reforms," *Economics without Borders. Economic Research for European Policy Challenges (Cambridge: Cambridge University Press, 2016)*.

Ebenstein, A., A. Harrison, M. McMillan, and S. Phillips (2014): "Estimating the impact of trade and offshoring on American workers using the current population surveys," *Review of Economics and Statistics*, 96(4), 581–595.

Elsby, M. W., B. Hobijn, and A. Şahin (2013): "Unemployment dynamics in the OECD," *Review of Economics and Statistics*, 95(2), 530–548.

Eurostat (2018): "Statistics explained - EU labour force survey," `http://ec.europa.eu/eurostat/statistics-explained/index.php/EU-labour_force_survey`, [Online; accessed 8-August-2018].

Goos, M., A. Manning, and A. Salomons (2014): "Explaining job polarization: Routine-biased technological change and offshoring," *American Economic Review*, 104(8), 2509–26.

Greene, W. (2010): "Testing hypotheses about interaction terms in nonlinear models," *Economics Letters*, 107(2), 291–296.

Grossman, G. M., and E. Rossi-Hansberg (2008): "Trading tasks: A simple theory of offshoring," *American Economic Review*, 98(5), 1978–97.

Haltiwanger, J., S. Scarpetta, and H. Schweiger (2014): "Cross country differences in job reallocation: the role of industry, firm size and regulations," *Labour Economics*, 26, 11–25.

Hardy, W., R. Keister, and P. Lewandowski (2018): "Educational upgrading, structural change and the task composition of jobs in Europe," *Economics of Transition*, 26(2), 201–231.

ILO (1988): *Current International Recommendations on Labour Statistics, 1988 Edition*. International Labour Organisation, Geneva.

Institute for Structural Research (2018): "Data and codes for O*NET," `www.ibs.org.pl/resources`, [Online; accessed 30-September-2018].

Jacobson, L. S., R. J. LaLonde, and D. G. Sullivan (1993): "Earnings losses of displaced workers," *The American Economic Review*, 83(4), 685–709.

Kroft, K., F. Lange, and M. J. Notowidigdo (2013): "Duration dependence and labor market conditions: Evidence from a field experiment," *The Quarterly Journal of Economics*, 128(3), 1123–1167.

Martin, J. P., and S. Scarpetta (2012): "Assessing the role of labour market policies and institutional settings on unemployment: A cross-country study," *De Economist*, 2(169), 89–116.

Melitz, M. J. (2003): "The impact of trade on intra-industry reallocations and aggregate industry productivity," *Econometrica*, 71(6), 1695–1725.

Mortensen, D. T., and C. A. Pissarides (1999): "New developments in models of search in the labor market," in *Handbook of Labor Economics, Ed. 1*, ed. by O. Ashenfelter, and D. Card, chap. 39, pp. 2567–2627. Elsevier.

Muendler, M.-A. (2017): "Trade, technology, and prosperity: An account of evidence from a labor-market perspective," Discussion paper, WTO Staff Working Paper.

Ochsen, C., and H. Welsch (2011): "The social costs of unemployment: accounting for unemployment duration," *Applied Economics*, 43(27), 3999–4005.

OECD (2013): "Protecting jobs, enhancing flexibility: A new look at employment protection legislation," in *OECD Employment Outlook*, chap. 2.

Origo, F., and L. Pagani (2009): "Flexicurity and job satisfaction in Europe: The importance of perceived and actual job stability for well-being at work," *Labour economics*, 16(5), 547–555.

Pavcnik, N. (2002): "Trade liberalization, exit, and productivity improvements: Evidence from Chilean plants," *The Review of Economic Studies*, 69(1), 245–276.

Pierce, J. R., and P. K. Schott (2016): "The surprisingly swift decline of US manufacturing employment," *American Economic Review*, 106(7), 1632–62.

Reichert, A. R., and H. Tauchmann (2017): "Workforce reduction, subjective job insecurity, and mental health," *Journal of Economic Behavior & Organization*, 133, 187–212.

Schmieder, J. F., T. von Wachter, and S. Bender (2016): "The effect of unemployment benefits and nonemployment durations on wages," *American Economic Review*, 106(3), 739–77.

Shu, P., and C. Steinwender (2019): "The impact of trade liberalization on firm productivity and innovation," *Innovation Policy and the Economy*, 19, 39–68.

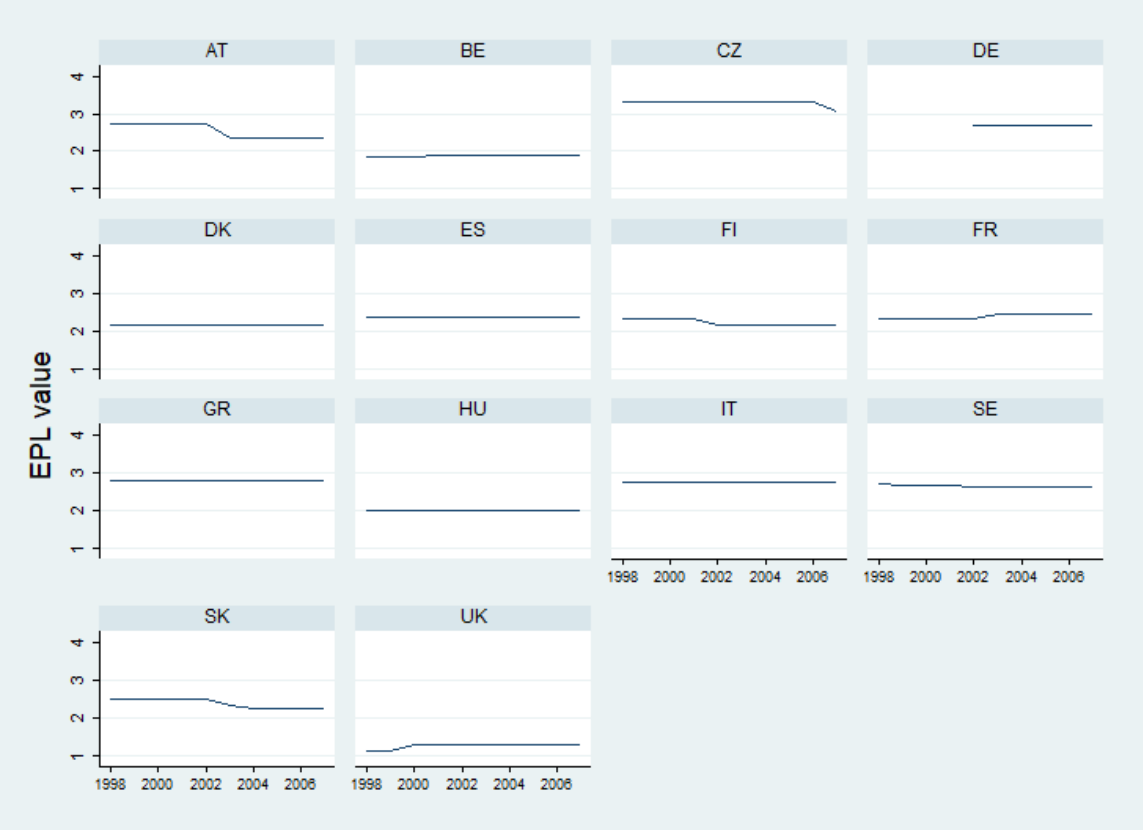
Trefler, D. (2004): "The long and short of the Canada-US free trade agreement," *American Economic Review*, 94(4), 870–895.

Appendix A

Figure 1: Transition rates from employment to unemployment (EU) and from unemployment to employment (UE), in (%) by country, 1998-2007

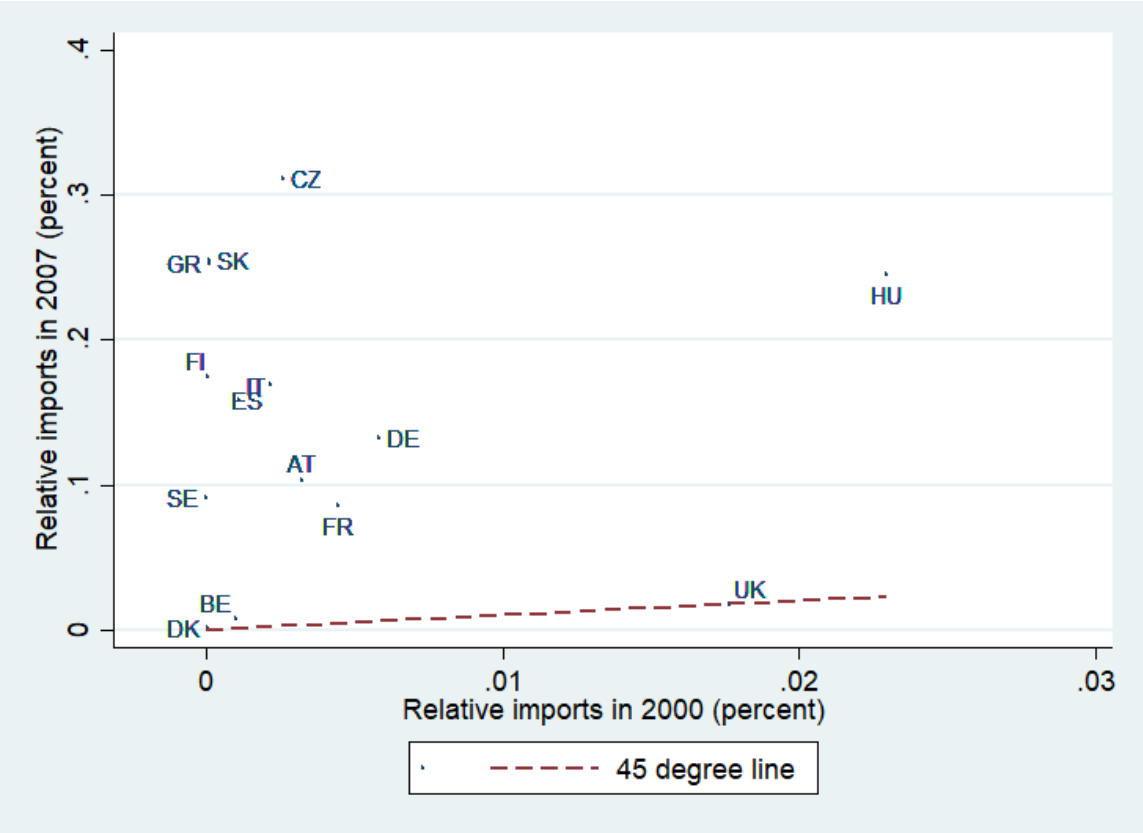
Notes: The left axis shows the scale for the EU rate, the right axis the scale for the UE rate.
Source: EU-LFS, own calculation.

Figure 2: EPL index by country – individual and collective dismissals (regular contracts), 1998-2007



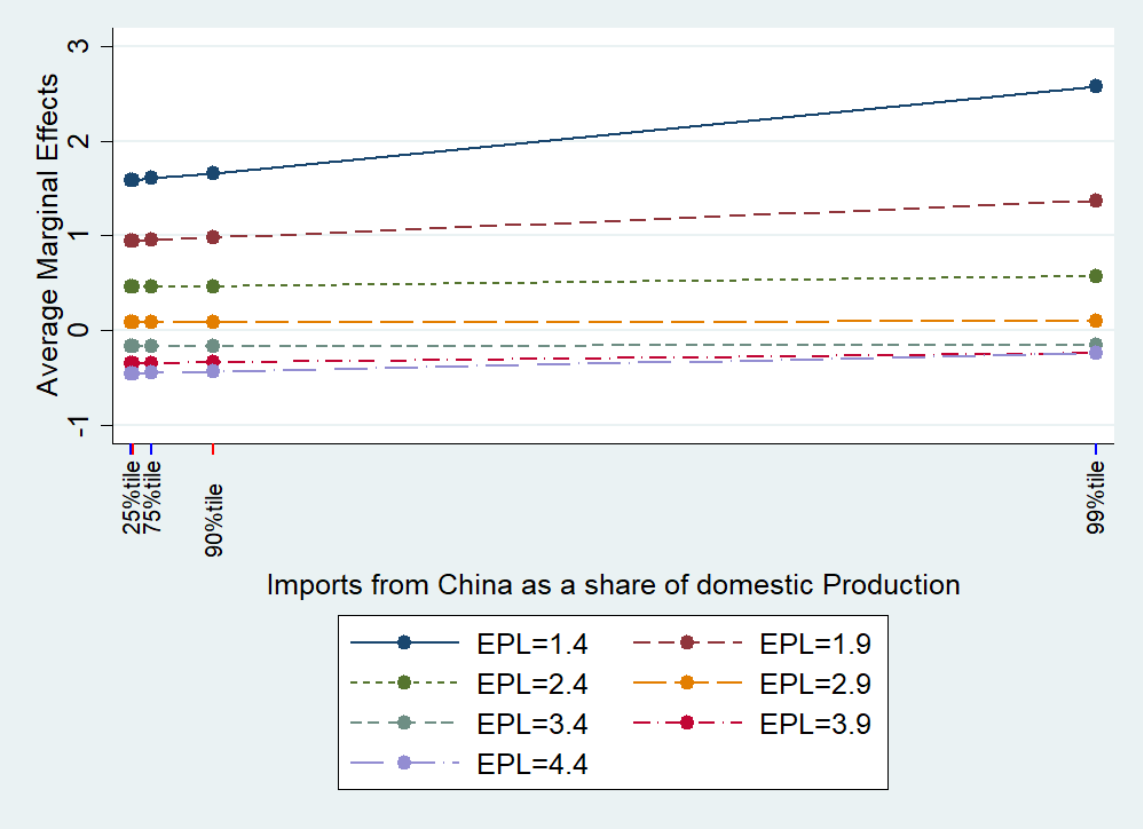
Source: OECD Indicators of Employment Protection, `https://stats.oecd.org/`.

Figure 3: Imports from China as a share of domestic production, 2000 and 2007



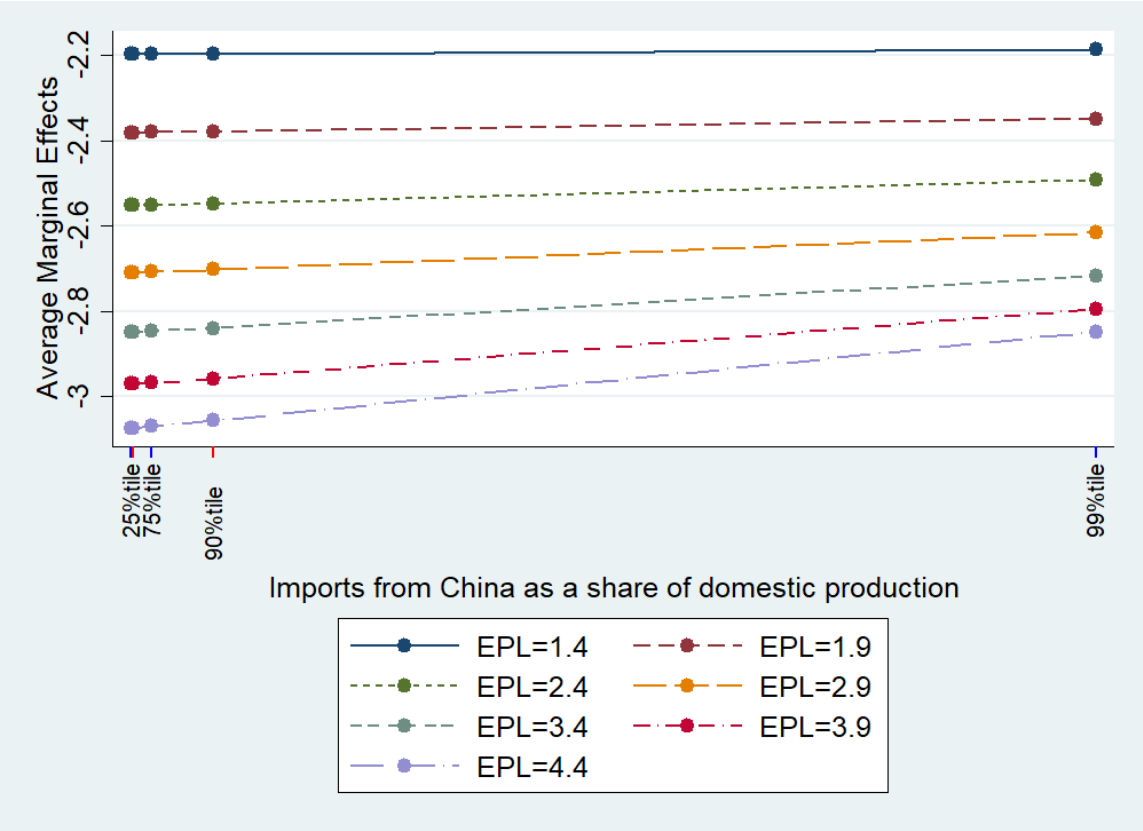
Source: Comtrade, Eurostat, EU-LFS, own calculation.

Figure 4: Average Marginal Effects of relative import on probability of transition to Unemployment



Note: Marginal effects are in percentage points. Average levels of imports and EPL are 0.0009 and 2.45, respectively.
Source: EU-LFS, own calculation.

Figure 5: Average Marginal Effects of relative import on probability of transition to Employment



Note: Marginal effects are in percentage points. Average levels of imports and EPL are 0.001 and 2.51, respectively.
Source: EU-LFS, own calculation.

Table 1: **Data description and summary statistics**

Variables	**E→U** Sample	**U→E** Sample	Data source
Sex:Male	0.570	0.546	EU-LFS
	(0.495)	(0.497)	
Marital Status:Married	0.601	0.435	EU-LFS
	(0.490)	(0.496)	
Age:15-29	0.196	0.326	EU-LFS
	(0.397)	(0.469)	
Age:30-54	0.695	0.584	EU-LFS
	(0.460)	(0.493)	
Age:55-64	0.109	0.089	EU-LFS
	(0.311)	(0.285)	
Skill:Low	0.256	0.400	EU-LFS
	(0.436)	(0.490)	
Skill:Medium	0.557	0.494	EU-LFS
	(0.497)	(0.500)	
Skill:High	0.187	0.106	EU-LFS
	(0.390)	(0.308)	
Employment Protection Legislation (EPL)	2.455	2.516	OECD.Stat
	(0.511)	(0.408)	
Real GDP growth (GDP-GR)	2.776	2.843	IMF
	(2.029)	(2.180)	
log GDP per capita, current prices (US dollars)	10.14	10.06	IMF
	(0.524)	(0.544)	
log Labour Productivity$_{1998}$ [a]	11.31	11.14	OECD STAN, Eurostat, EU-LFS
	(1.388)	(1.493)	
log Capital Intensity$_{1998}$ [b]	9.009	8.777	OECD STAN, Eurostat, EU-LFS
	(2.039)	(2.072)	
log Sectoral Domestic Production$_{1998}$ (current prices)	24.11	24.05	OECD STAN, Eurostat, EU-LFS
	(1.438)	(1.505)	
log Wage$_{1998}$	7.990	7.830	EU-KLEMS, Eurostat, EU-LFS
	(1.787)	(1.821)	

[a] Labour productivity is computed as value added (volumes) / total number of employees.
[b] Capital intensity is defined as gross capital formation (volumes) /total employment.

Table 1: **Data description and summary statistics, continued**

Variables	**E→U** Sample	**U→E** Sample	Data source
Chinese imports (in absolute terms, IMP^{Ch}_{oct})	3.84e+07	4.15e+07	Comtrade, Eurostat, EU-LFS
	(1.03e+08)	(1.29e+08)	
Lag of Chinese imports (in absolute terms, $IMP^{Ch}_{oc,t-1}$)	2.95e+07	3.17e+07	Comtrade, Eurostat, EU-LFS
	(8.51e+07)	(1.07e+08)	
Domestic production ($DomProd_{oct}$)	8.53e+10	8.28e+10	OECD STAN, Eurostat, EU-LFS
	(7.33e+10)	(7.38e+10)	
Lag of domestic production ($DomProd_{oc,t-1}$)	7.79e+10	7.60e+10	OECD STAN, Eurostat, EU-LFS
	(6.69e+10)	(6.77e+10)	
Relative Chinese imports (i.e., $\frac{IMP^{Ch}_{oct}}{DomProd_{oct}}$)	0 .001	0.001	
	(0.004)	(0.005)	
Lag of relative Chinese imports (i.e., $\frac{IMP^{Ch}_{oc,t-1}}{DomProd_{oc,t-1}}$)	0 .0009	0.001	
	(0.004)	(0.004)	
$IMP_{o,98}$	5.89e+08	6.14e+08	Comtrade, Eurostat, EU-LFS
	(9.79e+08)	(1.20e+09)	
$\frac{IMP_{t-1}}{IMP_{98}}$	3.185	3.152	Comtrade, Eurostat, EU-LFS
	(1.536)	(1.503)	
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$	1.90e+09	1.97e+09	
	(3.76e+09)	(4.65e+09)	
Unemployment Rate	0.103	0.114	EU-LFS
	(0.032)	(0.030)	
Employment Rate	0.761	0.742	EU-LFS
	(0.075)	(0.075)	
Transition rate from employment to unemployment	0.030		EU-LFS
	(0.009)		
Transition rate from unemployment to employment		0.273	EU-LFS
		(0.072)	

DATA: Regression sample, authors' calculations for the time period 1998-2007.

Table 2: **Probability of becoming (un)employed in response to changes in relative imports from China**

Panel A: Prob (**E**→**U** Transition)

	Probit	CF	Probit	CF	Probit	CF
EPL	-0.205***	-0.205***	-0.200***	-0.188***		
	(0.068)	(0.068)	(0.068)	(0.068)		
IMP	2.787***	4.099**	9.227**	33.64***	3.236***	5.244***
	(0.810)	(2.055)	(4.617)	(6.574)	(0.851)	(1.892)
EPL × IMP			-2.517	-11.03***		
			(1.829)	(2.540)		
EPL⩾Mean=1					-0.042*	-0.041
					(0.025)	(0.025)
EPL⩾Mean=1 × IMP					-1.068	-1.846
					(1.460)	(2.102)
Observations	3,331,966	3,331,966	3,331,966	3,331,966	3,331,966	3,331,966
First-stage results, dependent variable: IMP						
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$		7.04e-13***		8.01e-13***		
		(5.09e-14)		(1.28e-13)		
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$				-3.58e-14		
				(3.34e-14)		
R-Squared		0.577		0.578		
F-test of excluded instruments		203.09		163.08		
First-stage results, dependent variable: IMP ×EPL						
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$				1.96e-13		
				(2.08e-13)		
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$				6.27e-13***		
				(7.56e-14)		
R-Squared				0.603		
F-test of excluded instruments				118.51		
Kleibergen-Paap Wald rk F-Statistic				47.13		

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Control variables: Age, marital status, education, GDP growth, per capita GDP. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table 2: **Probability of becoming (un)employed in response to changes in relative imports from China, continued**

Panel B: Prob (**U**→**E** Transition)

	Probit	CF	Probit	CF	Probit	CF
EPL	-0.145	-0.146	-0.133	-0.143		
	(0.133)	(0.133)	(0.134)	(0.133)		
IMP	-6.604***	-7.508***	7.234	-4.740	-3.868***	-3.579
	(1.267)	(2.625)	(6.772)	(9.474)	(1.492)	(3.091)
EPL× IMP			-5.440**	-1.062		
			(2.689)	(3.619)		
EPL⩾Mean=1					-0.070	-0.070
					(0.045)	(0.046)
EPL⩾Mean=1 × IMP					-6.490***	-6.432***
					(1.912)	(2.690)
Observations	297,930	297,930	297,930	297,930	297,930	297,930
First-stage results, dependent variable: IMP						
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$		7.72e-13***		1.27e-12***		
		(3.91e-14)		(1.53e-13)		
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$				-1.87e-13***		
				(4.39e-14)		
R-Squared		0.643		0.647		
F-test of excluded instruments		390.49		441.21		
First-stage results, dependent variable: IMP ×EPL						
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$				1.00e-12***		
				(2.27e-13)		
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$				3.89e-13***		
				(6.57e-14)		
R-Squared				0.666		
F-test of excluded instruments				259.62		
Kleibergen-Paap Wald rk F-Statistic				72.81		

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Control variables: Age, marital status, education, GDP growth, per capita GDP. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table 3: **Probability of becoming (un)employed by age group**

Panel A: Prob (**E**→**U** Transition)

	Probit	CF
IMP	1.418	2.543
	(1.210)	(2.899)
EPL⩾Mean=1	-0.034	-0.035
	(0.026)	(0.026)
EPL⩾Mean=1 × IMP	-2.024	-0.845
	(2.395)	(4.248)
Age 30-54	-0.171***	-0.171***
	(0.009)	(0.01)
Age 55-64	-0.232***	-0.238***
	(0.018)	(0.018)
Age 30-54 × IMP	2.534**	2.872
	(1.098)	(1.981)
Age 55-64 × IMP	0.224	9.795**
	(1.860)	(4.065)
EPL⩾Mean=1 × Age 30-54	-0.018	-0.017
	(0.012)	(0.012)
EPL⩾Mean=1 × Age 55-64	0.056***	0.062***
	(0.019)	(0.02)
EPL⩾Mean=1 × Age 30-54 × IMP	0.872	-1.149
	(2.667)	(4.329)
EPL⩾Mean=1× Age 55-64 × IMP	4.990	-3.946
	(3.989)	(5.662)
Observations	3,331,966	3,331,966

Panel B: Prob (**U**→**E** Transition)

	Probit	CF
IMP	-2.677	1.283
	(2.103)	(4.311)
EPL⩾Mean=1	-0.087*	-0.084*
	(0.05)	(0.049)
EPL⩾Mean=1 × IMP	-5.613**	-4.311
	(2.355)	(4.649)
Age 30-54	-0.463***	-0.457***
	(0.019)	(0.019)
Age 55-64	-0.996***	-0.985***
	(0.034)	(0.035)
Age 30-54 × IMP	-2.004	-6.512*
	(2.291)	(3.648)
Age 55-64 × IMP	1.965	-8.017
	(3.232)	(8.297)
EPL⩾Mean=1 × Age 30-54	0.012	0.011
	(0.019)	(0.02)
EPL⩾Mean=1 × Age 55-64	0.133***	0.129***
	(0.032)	(0.033)
EPL⩾Mean=1 × Age 30-54 × IMP	-1.13	-3.17
	(3.385)	(5.396)
EPL⩾Mean=1 × Age 55-64 × IMP	-1.885	-0.148
	(9.317)	(10.88)
Observations	297,930	297,930

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Baseline category: Age 15-29. Control variables: Gender, marital status, education, GDP growth, per capita GDP. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table 4: **Probability of becoming (un)employed by skill group**

Panel A: Prob (**E**→**U** Transition)

	Probit	CF
IMP	-10.34	-7.192
	(7.546)	(16.61)
EPL⩾Mean=1	-0.102***	-0.122***
	(0.032)	(0.033)
EPL⩾Mean=1 × IMP	6.698	63.14***
	(9.031)	(18.63)
Low-skilled	0.348***	0.345***
	(0.016)	(0.018)
Medium-skilled	0.157***	0.158***
	(0.013)	(0.015)
Low-skilled × IMP	14.04*	15.47
	(7.526)	(16.68)
Medium-skilled × IMP	13.73*	11.66
	(7.569)	(16.09)
EPL⩾Mean=1 × Low-skilled	0.053**	0.079***
	(0.023)	(0.024)
EPL⩾Mean=1× Medium-skilled	0.068***	0.091***
	(0.02)	(0.021)
EPL⩾Mean=1× Low-skilled × IMP	-9.091	-70.16***
	(9.328)	(20.21)
EPL⩾Mean=1 × Medium-skilled× IMP	-7.219	-63.53***
	(9.084)	(19.05)
Observations	3,331,966	3,331,966

Panel B: Prob (**U**→**E** Transition)

	Probit	CF
IMP	6.496	16.77*
	(4.305)	(9.160)
EPL⩾Mean=1	-0.022	-0.019
	(0.05)	(0.05)
EPL⩾Mean=1 × IMP	-27.16***	-24.38
	(9.644)	(15.54)
Low-skilled	-0.328***	-0.316***
	(0.022)	(0.022)
Medium-skilled	-0.129***	-0.128***
	(0.021)	(0.021)
Low-skilled × IMP	-15.63***	-32.16***
	(5.351)	(10.63)
Medium-skilled × IMP	-8.402*	-16.32
	(4.944)	(10.19)
EPL⩾Mean=1 × Low-skilled	-0.013	-0.02
	(0.029)	(0.03)
EPL⩾Mean=1 × Medium-skilled	-0.061**	-0.058**
	(0.026)	(0.026)
EPL⩾Mean=1 × Low-skilled × IMP	24.46**	27.74*
	(9.722)	(16.67)
EPL⩾Mean=1 × Medium-skilled × IMP	20.04*	15.52
	(10.67)	(16.27)
Observations	297,930	297,930

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Baseline category: ISCED 5-6. Control variables: Age, gender, marital status, GDP growth, per capita GDP. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table 5: **Probability of becoming (un)employed by task content**

Panel A: Prob (**E**→**U** Transition)

	Probit	CF
IMP	-63.48***	-12.69
	(11.07)	(36.44)
EPL⩾Mean=1	-0.188***	-0.207***
	(0.035)	(0.037)
EPL⩾Mean=1×IMP	67.48***	175.0***
	(13.42)	(33.54)
MediumRTI	0.096***	0.139***
	(0.023)	(0.026)
HighRTI	0.159***	0.173***
	(0.021)	(0.025)
MediumRTI× IMP	59.30***	-40.39
	(11.01)	(36.73)
HighRTI × IMP	66.91***	19.35
	(11.08)	(36.22)
EPL⩾Mean=1 × MediumRTI	0.161***	0.201***
	(0.03)	(0.035)
EPL⩾Mean=1 × HighRTI	0.182***	0.209***
	(0.027)	(0.03)
EPL⩾Mean=1 × MediumRTI × IMP	-102.3***	-275.1***
	(19.49)	(44.84)
EPL⩾Mean=1 × HighRTI × IMP	-70.37***	-180.9***
	(13.52)	(33.58)
Observations	3,270,842	3,270,842

Panel B: Prob (**U**→**E** Transition)

	Probit	CF
IMP	31.39	197.3*
	(23.60)	(111.0)
EPL⩾Mean=1	-0.062	0.028
	(0.064)	(0.079)
EPL⩾Mean=1 × IMP	-76.68*	-410.6***
	(40.55)	(137.1)
MediumRTI	0.183***	0.246***
	(0.04)	(0.059)
HighRTI	0.0963**	0.141**
	(0.041)	(0.059)
MediumRTI× IMP	-41.96*	-241.5**
	(24.01)	(110.9)
HighRTI × IMP	-34.53	-199.1*
	(23.68)	(111.0)
EPL⩾Mean=1 ×MediumRTI	-0.012	-0.111
	(0.052)	(0.072)
EPL⩾Mean=1 × HighRTI	-0.011	-0.102
	(0.053)	(0.072)
EPL⩾Mean=1 × MediumRTI × IMP	62.14	405.8***
	(42.20)	(139.6)
EPL⩾Mean=1 × HighRTI × IMP	71.11*	404.6***
	(40.63)	(137.1)
Observations	295,004	295,004

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Control variables: Age, gender, marital status, education, GDP growth, per capita GDP. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table 6: **Regression including the share of workers with fixed-term contracts and exports from EU to China**

Panel A: Prob (**E**→**U** Transition)

	Probit	CF	Probit	CF
EPL	-0.200***	-0.188***	-0.206***	-0.191***
	(0.068)	(0.068)	(0.071)	(0.071)
IMP	10.03*	36.07***	9.933**	30.51***
	(5.142)	(6.720)	(4.715)	(6.515)
EPL × IMP	-2.586	-11.09***	-2.556	-9.423***
	(1.882)	(2.537)	(1.828)	(2.490)
FTC × IMP	-0.057	-0.217**		
	(0.061)	(0.109)		
DomProd			-2.37e-13	-2.90e-13
			(2.21e-13)	(2.20e-13)
EXP			-21.94***	-24.95***
			(6.574)	(6.578)
Observations	3,331,966	3,331,966	3,124,860	3,124,860

Panel B: Prob (**U**→**E** Transition)

	Probit	CF	Probit	CF
EPL	-0.132	-0.142	-0.211	-0.219
	(0.134)	(0.133)	(0.137)	(0.137)
IMP	9.223	-0.016	6.532	-2.204
	(7.370)	(10.14)	(6.742)	(9.357)
EPL× IMP	-5.532**	-1.007	-5.072	-1.474
	(2.654)	(3.786)	(2.664)	(3.638)
FTC × IMP	-0.160	-0.471*		
	(0.132)	(0.278)		
DomProd			7.31e-13***	7.33e-13***
			(2.53e-13)	(2.41e-13)
EXP			-21.46*	-21.70**
			(11.64)	(10.47)
Observations	297,930	297,930	280,382	280,382

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). EXP represents Chinese imports as a fraction of domestic production (i.e., $\frac{EXP_{t-1}}{DomProd_{t-1}}$). FTC: Fixed-term contract. The regressions also include full sets of country and year dummies. Control variables: Age, gender, marital status, education, GDP growth, per capita GDP. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table 7: **Inclusion of occupation fixed effects - alternative instrument**

Panel A: Prob (**E**→**U** Transition)

	Probit	Probit	CF	CF
EPL	-0.232***	-0.225***	-0.205***	-0.187***
	(0.054)	(0.054)	(0.068)	(0.068)
IMP	2.356**	15.29***	8.080**	39.33***
	(1.042)	(4.554)	(3.194)	(7.710)
EPL × IMP		-5.559***		-11.75***
		(1.699)		(3.020)
Observations	3,941,299	3,941,299	3,328,205	3,328,205
First-stage results, dependent variable: IMP				
$IMP^{US}_{0,t-1}$			1.77e-12***	1.72e-12***
			(2.63e-13)	(4.19e-13)
$IMP^{US}_{0,t-1} \times EPL$				1.88e-14
				(1.24e-13)
R-Squared			0.468	0.468
F-test of excluded instruments			47.99	24.10
First-stage results, dependent variable: IMP ×EPL				
$IMP^{US}_{0,t-1}$				-1.01e-13
				(8.40e-13)
$IMP^{US}_{0,t-1} \times EPL$				1.80e-12***
				(4.17e-13)
R-Squared				0.487
F-test of excluded instruments				23.76
Kleibergen-Paap Wald rk F-Statistic				22.42

Panel B: Prob (**U**→**E** Transition)

	Probit	Probit	CF	CF
EPL	-0.061	-0.062	-0.143	-0.129
	(0.105)	(0.105)	(0.133)	(0.134)
IMP	-2.141*	-2.812	-5.934*	9.178
	(1.133)	(4.903)	(3.528)	(10.55)
EPL× IMP		0.293		-5.746
		(1.902)		(4.382)
Observations	373,735	373,735	297,706	297,706
First-stage results, dependent variable: IMP				
$IMP^{US}_{0,t-1}$			2.03e-12***	2.40e-12***
			(2.88e-13)	(5.53e-13)
$IMP^{US}_{0,t-1} \times EPL$				-1.41e-13
				(1.66e-13)
R-Squared			0.519	0.519
F-test of excluded instruments			49.57	24.50
First-stage results, dependent variable: IMP ×EPL				
$IMP^{US}_{0,t-1}$				7.03e-13
				(1.04e-12)
$IMP^{US}_{0,t-1} \times EPL$				1.75e-12***
				(4.86e-13)
R-Squared				0.536
F-test of excluded instruments				24.39
Kleibergen-Paap Wald rk F-Statistic				21.55

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Columns (1) and (2) include full sets of occupation dummies. Control variables: Age, gender, marital status, education, GDP growth, per capita GDP. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Appendix A Appendix

A.1 Labour Market Status in the EU-LFS

In order to compute labour market transitions, we need information on respondents' labour status at the time of the interview and one year prior. We derive this information from the two variables of MAINSTAT and WSTAT1Y (current and last year labour market status, respectively) of EU-LFS data. However, as the variable MAINSTAT is not available for all countries, we also use the information on the variable ILOSTAT. Unfortunately, MAINSTAT and ILOSTAT are not always comparable and there are some cases in which individuals are defined as "employed" according to ILOSTAT, but "unemployed"/ "inactive" based on MAINSTAT.

In our analysis, we define these observations with unclear employment status to be employed (since we have also non-missing information on their current occupation, individuals' professional status, labour status during reference week, etc.), yet, to examine whether or not our estimated coefficient are sensitive to this choice of the estimation sample, we re-run our baseline regressions using a restricted sample in which we exclude the observations for which the definitions of ILOSTAT and MAINSTAT contradict each other. As presented in Table A1 below, our results remain unaltered and are therefore robust to this type of potential misclassification.

Table A1: **Probability of becoming (un)employed in a restricted sample**

Panel A: Prob (**E**→**U** Transition)

	Probit	IV-Probit	Probit	IV-Probit	EPL⩾Mean[Probit]	EPL<Mean[Probit]
EPL	-0.200***	-0.200***	-0.195***	-0.178***		
	(0.069)	(0.069)	(0.069)	(0.069)		
IMP	2.843***	4.112**	9.080**	33.50***	1.061 [1.138]	7.644***[3.671***]
	(0.807)	(1.991)	(4.611)	(9.736)	2.724[1.576]	(1.974)[0.849]
EPL × IMP			-2.439	-10.994***		
			(1.826)	(3.773)		
Observations	2,948,482	2,948,482	2,948,482	2,948,482	1,745,980	1,202,502
First-stage results, dependent variable: IMP						
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$		6.98e-13***		8.11e-13***		
		(4.92e-14)		(1.31e-13)		
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$				-4.18e-14		
				(3.41e-14)		
R-Squared		0.589		0.590		
F-test of excluded instruments		201.29		161.99		
First-stage results, dependent variable: IMP ×EPL						
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$				2.31e-13		
				(2.08e-13)		
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$				6.08e-13***		
				(7.15e-14)		
R-Squared				0.615		
F-test of excluded instruments				117.51		
Kleibergen-Paap Wald rk F-Statistic				46.96		

Panel B: Prob (**U**→**E** Transition)

	Probit	IV-Probit	Probit	IV-Probit	EPL⩾Mean[Probit]	EPL<Mean[Probit]
EPL	-0.172	-0.172	-0.159	-0.169		
	(0.138)	(0.138)	(0.138)	(0.138)		
IMP	-5.729***	-6.288**	8.711	-1.727	-7.378**[-8.677***]	-4.208 [-3.609**]
	(1.270)	(2.585)	(6.362)	(9.257)	(2.978)[1.857]	(2.785) [1.448]
EPL× IMP			-5.68**	-1.734		
			(2.534)	(3.791)		
Observations	273,776	273,776	273,776	273,776	164,198	109,578
First-stage results, dependent variable: IMP						
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$		7.77e-13***		1.29e-12***		
		(3.97e-14)		(1.55e-13)		
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$				-1.89e-13***		
				(4.41e-14)		
R-Squared		0.649		0.654		
F-test of excluded instruments		384.39		441.29		
First-stage results, dependent variable: IMP ×EPL						
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}}$				1.01e-12***		
				(2.27e-13)		
$IMP_{o,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$				3.86e-13***		
				(6.50e-14)		
R-Squared				0.671		
F-test of excluded instruments				258.75		
Kleibergen-Paap Wald rk F-Statistic				72.61		

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Control variables: Age, marital status, education, GDP growth, per capita GDP. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table A2: **Probability of becoming (un)employed in response to changes in relative imports from China - Full set of results**

Panel A: Prob (**E**→**U** Transition)

	Probit	CF	Probit	CF
EPL	-0.205***	-0.205***	-0.200***	-0.188***
	(0.0683)	(0.0683)	(0.0684)	(0.0680)
IMP	2.787***	4.099**	9.227**	33.64***
	(0.810)	(2.055)	(4.617)	(6.574)
EPL × IMP			-2.517	-11.03***
			(1.829)	(2.540)
Male	-0.0167	-0.0164	-0.0167	-0.0163
	(0.0118)	(0.0119)	(0.0118)	(0.0119)
Married=1	-0.187***	-0.188***	-0.187***	-0.188***
	(0.00526)	(0.00527)	(0.00526)	(0.00527)
Age 30-54	-0.178***	-0.178***	-0.178***	-0.178***
	(0.00622)	(0.00622)	(0.00622)	(0.00622)
Age 55-64	-0.196***	-0.196***	-0.196***	-0.196***
	(0.0134)	(0.0134)	(0.0134)	(0.0133)
ISCED 3-4	-0.180***	-0.180***	-0.180***	-0.180***
	(0.00943)	(0.00932)	(0.00942)	(0.00928)
ISCED 5-6	-0.378***	-0.378***	-0.378***	-0.377***
	(0.0159)	(0.0158)	(0.0159)	(0.0158)
GDP_GR	-0.00243	-0.00252	-0.00214	-0.00127
	(0.00466)	(0.00466)	(0.00468)	(0.00468)
log(GDP_PC)	-0.412***	-0.415***	-0.415***	-0.427***
	(0.0719)	(0.0715)	(0.0719)	(0.0712)
log(LabourPROD_{98})	-0.0590***	-0.0593***	-0.0593***	-0.0598***
	(0.0143)	(0.0144)	(0.0143)	(0.0142)
log(CAPintens_{98})	-0.0525***	-0.0517***	-0.0526***	-0.0512***
	(0.00659)	(0.00699)	(0.00658)	(0.00697)
log(PROD_{98})	0.0493***	0.0529***	0.0493***	0.0556***
	(0.0170)	(0.0179)	(0.0170)	(0.0178)
log(WAGE_{98})	-0.0192**	-0.0192**	-0.0192**	-0.0189**
	(0.00803)	(0.00807)	(0.00804)	(0.00810)
Constant	3.298***	3.238***	3.317***	3.249***
	(0.881)	(0.897)	(0.880)	(0.890)
Observations	3,331,966	3,331,966	3,331,966	3,331,966

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Baseline categories: age: Age 15-29; education: ISCED 0-2. Authors' calculations for the time period 1998-2007.

Table A2: **Probability of becoming (un)employed in response to changes in relative imports from China - Full set of results, continued**

Panel A: Prob (**U**→**E** Transition)

	Probit	CF	Probit	CF
EPL	-0.145	-0.146	-0.133	-0.143
	(0.133)	(0.133)	(0.134)	(0.133)
IMP	-6.604***	-7.508***	7.234	-4.740
	(1.267)	(2.625)	(6.772)	(9.474)
EPL × IMP			-5.440**	-1.062
			(2.689)	(3.619)
Male	0.0364**	0.0362**	0.0366**	0.0362**
	(0.0152)	(0.0151)	(0.0152)	(0.0151)
Married=1	0.0420***	0.0422***	0.0421***	0.0422***
	(0.00961)	(0.00959)	(0.00961)	(0.00959)
Age 30-54	-0.459***	-0.459***	-0.458***	-0.459***
	(0.0154)	(0.0154)	(0.0154)	(0.0154)
Age 55-64	-0.918***	-0.918***	-0.918***	-0.918***
	(0.0277)	(0.0277)	(0.0277)	(0.0277)
ISCED 3-4	0.174***	0.174***	0.174***	0.174***
	(0.0101)	(0.0100)	(0.0101)	(0.0100)
ISCED 5-6	0.338***	0.338***	0.338***	0.338***
	(0.0159)	(0.0159)	(0.0159)	(0.0159)
GDP_GR	0.0107	0.0108	0.0112	0.0108
	(0.00794)	(0.00791)	(0.00794)	(0.00788)
log(GDP_PC)	0.369***	0.371***	0.361***	0.369***
	(0.107)	(0.106)	(0.107)	(0.105)
log(LabourPROD_{98})	0.0588**	0.0595**	0.0584**	0.0593**
	(0.0236)	(0.0237)	(0.0237)	(0.0237)
log(CAPintens_{98})	0.0418***	0.0411***	0.0415***	0.0411***
	(0.00721)	(0.00754)	(0.00718)	(0.00749)
log(PROD_{98})	-0.00561	-0.00881	-0.00559	-0.00841
	(0.0165)	(0.0170)	(0.0165)	(0.0170)
log(WAGE_{98})	-0.0105*	-0.0106*	-0.0104*	-0.0106*
	(0.00566)	(0.00559)	(0.00564)	(0.00558)
Constant	-4.023***	-3.964***	-3.965***	-3.962***
	(1.203)	(1.242)	(1.204)	(1.234)
Observations	297,930	297,930	297,930	297,930

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country and year dummies. Baseline categories: age: Age 15-29; education: ISCED 0-2. Authors' calculations for the time period 1998-2007.

Table A3: **Probability of becoming (un)employed in response to changes in relative imports from China: controlling for country-year fixed effects**

Panel A: Prob (**E→U** Transition)

	Probit	CF	Probit	CF
IMP	11.17**	37.96***	3.519***	6.486***
	(4.913)	(6.685)	(0.966)	(1.860)
EPL × IMP	-3.277*	-12.65***		
	(1.930)	(2.582)		
EPL⩾Mean=1 × IMP			-1.791	-3.806*
			(1.639)	(2.211)
Observations	3,211,631	3,211,631	3,211,631	3,211,631
First stage results, dependent variable: IMP				
$IMP_{0,98} \times \frac{IMP_t-1}{IMP_{98}}$		8.44e-13***		9.19e-13***
		(1.29e-13)		(8.76e-14)
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$		-4.88e-14		
		(3.40e-14)		
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL \geqslant Mean = 1$				-2.89e-13***
				(6.74e-14)
F-test of excluded instruments		170.58		98.71
First stage results, dependent variable: IMP ×EPL or IMP ×EPL⩾Mean=1				
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}}$		2.41e-13		-1.69e-14***
		(2.07e-13)		(6.56e-15)
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$		6.19e-13***		
		(7.56e-14)		
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL \geqslant Mean = 1$				6.51e-13***
				(4.44e-14)
F-test of excluded instruments		122.54		94.86
Kleibergen-Paap Wald rk F statistic		49.38		58.14

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country-year dummies. Control variables: Age, marital status, education. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table (A3) **Probability of becoming (un)employed in response to changes in relative imports from China: controlling for country-year fixed effects, continued**

Panel B: Prob (**U→E** Transition)

	Probit	CF	Probit	CF
IMP	2.427	-19.17**	-4.435***	-5.752**
	(6.768)	(8.483)	(1.437)	(2.864)
EPL× IMP	-3.351	4.621		
	(2.721)	(3.361)		
EPL⩾Mean=1 × IMP			-3.959**	-1.851
			(1.992)	(2.545)
Observations	293,228	293,228	293,228	293,228
First stage results, dependent variable: IMP				
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}}$		1.33e-12***		1.09e-12***
		(1.51e-13)		(9.83e-14)
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$		-2.04e-13***		
		(4.34e-14)		
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL \geqslant Mean = 1$				-4.25e-13***
				(8.88e-14)
F-test of excluded instruments		447.45		198.79
First stage results, dependent variable: IMP ×EPL or IMP ×EPL⩾Mean=1				
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}}$		1.08e-12***		-8.57e-15
		(2.22e-13)		(5.49e-15)
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL$		3.66e-13***		
		(6.45e-14)		
$IMP_{0,98} \times \frac{IMP_{t-1}}{IMP_{98}} \times EPL \geqslant Mean = 1$				6.79e-13***
				(3.31e-14)
F-test of excluded instruments		269.07		193.65
Kleibergen-Paap Wald rk F statistic		77.29		64.60

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE) in parentheses. SEs are clustered at the occupation-year level. IMP represents Chinese imports as a fraction of domestic production (i.e., $\frac{IMP_{t-1}}{DomProd_{t-1}}$). The regressions also include full sets of country-year dummies. Control variables: Age, marital status, education. Sectoral labour productivity, domestic production, capital intensity, and wages (in 1998) are used as additional controls. Authors' calculations for the time period 1998-2007.

Table A4: **Average marginal effects of Chinese imports on the probability of becoming (un)employed by age group and level of EPL**

Panel A: Prob (**E**→**U** Transition)		
	low EPL	high EPL
Age 15-29	0.206	0.130
	(0.235)	(0.313)
Age 30-54	0.327***	0.187
	(0.107)	(0.147)
Age 55-64	0.667***	0.425*
	(0.193)	(0.245)
Panel B: Prob (**U**→**E** Transition)		
	low EPL	high EPL
Age 15-29	0.457	-1.096
	(1.537)	(1.731)
Age 30-54	-1.872*	-4.454***
	(1.078)	(1.066)
Age 55-64	-1.896	-3.237
	(2.197)	(2.369)

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE), calculated by the delta method in parentheses. Table shows sample-average marginal effects of an increase in the Chinese import ratio. These are based on the coefficients in Table 3.

Table A5: **Average marginal effects of Chinese imports on the probability of becoming (un)employed by education group and level of EPL**

Panel A: Prob (**E**→**U** Transition)

	low EPL	high EPL
Low-skilled	0.706***	0.099
	(0.249)	(0.200)
Medium-skilled	0.274**	0.234
	(0.111)	(0.186)
High-skilled	-0.320	2.264***
	(0.736)	(0.574)

Panel B: Prob (**U**→**E** Transition)

	low EPL	high EPL
Low-skilled	-5.280***	-4.093***
	(1.328)	(0.960)
Medium-skilled	0.159	-2.949**
	(1.212)	(1.239)
High-skilled	5.916*	-2.692
	(3.215)	(4.066)

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE), calculated by the delta method in parentheses. Table shows sample-average marginal effects of an increase in the Chinese import ratio. These are based on the coefficients in Table 4.

Table A6: **Average marginal effects of Chinese imports on the probability of becoming (un)employed by routine task intensity and level of EPL**

Panel A: Prob (**E**→**U** Transition)

	low EPL	high EPL
LowRTI	-0.654	7.270***
	(1.861)	(0.313)
MediumRTI	-3.373***	-8.910***
	(0.934)	(2.181)
HighRTI	0.485***	0.056
	(0.116)	(0.180)

Panel B: Prob (**U**→**E** Transition)

	low EPL	high EPL
LowRTI	66.198*	-68.973**
	(35.896)	(27.892)
MediumRTI	-15.456***	16.977*
	(4.059)	(9.697)
HighRTI	-0.636	-2.678***
	(1.096)	(0.933)

Notes:* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors (SE), calculated by the delta method in parentheses. Table shows sample-average marginal effects of an increase in the Chinese import ratio. These are based on the coefficients in Table 5.

PREVIOUS DISCUSSION PAPERS

328 Aghelmaleki, Hedieh, Bachmann, Ronald and Stiebale, Joel, The China Shock, Employment Protection, and European Jobs, December 2019.

327 Link, Thomas, Optimal Timing of Calling In Large-Denomination Banknotes under Natural Rate Uncertainty, November 2019.

326 Heiss, Florian, Hetzenecker, Stephan and Osterhaus, Maximilian, Nonparametric Estimation of the Random Coefficients Model: An Elastic Net Approach, September 2019.

325 Horst, Maximilian and Neyer, Ulrike, The Impact of Quantitative Easing on Bank Loan Supply and Monetary Policy Implementation in the Euro Area, September 2019.

324 Neyer, Ulrike and Stempel, Daniel, Macroeconomic Effects of Gender Discrimination, September 2019.

323 Stiebale, Joel and Szücs, Florian, Mergers and Market Power: Evidence from Rivals' Responses in European Markets, September 2019.

322 Henkel, Marcel, Seidel, Tobias and Suedekum, Jens, Fiscal Transfers in the Spatial Economy, September 2019.

321 Korff, Alex and Steffen, Nico, Economic Preferences and Trade Outcomes, August 2019.

320 Kohler, Wilhelm and Wrona, Jens, Trade in Tasks: Revisiting the Wage and Employment Effects of Offshoring, July 2019.

319 Cobb-Clark, Deborah A., Dahmann, Sarah C., Kamhöfer, Daniel A. and Schildberg-Hörisch, Hannah, Self-Control: Determinants, Life Outcomes and Intergenerational Implications, July 2019.

318 Jeitschko, Thomas D., Withers, John A., Dynamic Regulation Revisited: Signal Dampening, Experimentation and the Ratchet Effect, July 2019.

317 Jeitschko, Thomas D., Kim, Soo Jin and Yankelevich, Aleksandr, Zero-Rating and Vertical Content Foreclosure, July 2019.

316 Kamhöfer, Daniel A. und Westphal, Matthias, Fertility Effects of College Education: Evidence from the German Educational Expansion, July 2019.

315 Bodnar, Olivia, Fremerey, Melinda, Normann, Hans-Theo and Schad, Jannika, The Effects of Private Damage Claims on Cartel Stability: Experimental Evidence, June 2019.

314 Baumann, Florian and Rasch, Alexander, Injunctions Against False Advertising, June 2019.

313 Hunold, Matthias and Muthers, Johannes, Spatial Competition and Price Discrimination with Capacity Constraints, May 2019 (First Version June 2017 under the title "Capacity Constraints, Price Discrimination, Inefficient Competition and Subcontracting").
Forthcoming in: International Journal of Industrial Organization.

312 Creane, Anthony, Jeitschko, Thomas D. and Sim, Kyoungbo, Welfare Effects of Certification under Latent Adverse Selection, March 2019.

311 Bataille, Marc, Bodnar, Olivia, Alexander Steinmetz and Thorwarth, Susanne, Screening Instruments for Monitoring Market Power – The Return on Withholding Capacity Index (RWC), March 2019.
Published in: Energy Economics, 81 (2019), pp. 227-237.

310 Dertwinkel-Kalt, Markus and Köster, Mats, Salience and Skewness Preferences, March 2019.
Forthcoming in: Journal of the European Economic Association.

309 Hunold, Matthias and Schlütter, Frank, Vertical Financial Interest and Corporate Influence, February 2019.

308 Sabatino, Lorien and Sapi, Geza, Online Privacy and Market Structure: Theory and Evidence, February 2019.

307 Izhak, Olena, Extra Costs of Integrity: Pharmacy Markups and Generic Substitution in Finland, January 2019.

306 Herr, Annika and Normann, Hans-Theo, How Much Priority Bonus Should be Given to Registered Organ Donors? An Experimental Analysis, December 2018.
Published in: Journal of Economic Behavior and Organization, 158 (2019), pp.367-378.

305 Egger, Hartmut and Fischer, Christian, Increasing Resistance to Globalization: The Role of Trade in Tasks, December 2018.

304 Dertwinkel-Kalt, Markus, Köster, Mats and Peiseler, Florian, Attention-Driven Demand for Bonus Contracts, October 2018.
Published in: European Economic Review, 115 (2019), pp.1-24.

303 Bachmann, Ronald and Bechara, Peggy, The Importance of Two-Sided Heterogeneity for the Cyclicality of Labour Market Dynamics, October 2018.
Forthcoming in: The Manchester School.

302 Hunold, Matthias, Hüschelrath, Kai, Laitenberger, Ulrich and Muthers, Johannes, Competition, Collusion and Spatial Sales Patterns – Theory and Evidence, September 2018.

301 Neyer, Ulrike and Sterzel, André, Preferential Treatment of Government Bonds in Liquidity Regulation – Implications for Bank Behaviour and Financial Stability, September 2018.

300 Hunold, Matthias, Kesler, Reinhold and Laitenberger, Ulrich, Hotel Rankings of Online Travel Agents, Channel Pricing and Consumer Protection, September 2018 (First Version February 2017).
Forthcoming in: Marketing Science.

299 Odenkirchen, Johannes, Pricing Behavior in Partial Cartels, September 2018.

298 Mori, Tomoya and Wrona, Jens, Inter-city Trade, September 2018.

297 Rasch, Alexander, Thöne, Miriam and Wenzel, Tobias, Drip Pricing and its Regulation: Experimental Evidence, August 2018.

296 Fourberg, Niklas, Let's Lock Them in: Collusion under Consumer Switching Costs, August 2018.

295 Peiseler, Florian, Rasch, Alexander and Shekhar, Shiva, Private Information, Price Discrimination, and Collusion, August 2018.

294 Altmann, Steffen, Falk, Armin, Heidhues, Paul, Jayaraman, Rajshri and Teirlinck, Marrit, Defaults and Donations: Evidence from a Field Experiment, July 2018.
Forthcoming in: Review of Economics and Statistics.

293 Stiebale, Joel and Vencappa, Dev, Import Competition and Vertical Integration: Evidence from India, July 2018.

292 Bachmann, Ronald, Cim, Merve and Green, Colin, Long-run Patterns of Labour Market Polarisation: Evidence from German Micro Data, May 2018.
Published in: British Journal of Industrial Relations, 57 (2019), pp. 350-376.

291 Chen, Si and Schildberg-Hörisch, Hannah, Looking at the Bright Side: The Motivation Value of Overconfidence, May 2018.
Forthcoming in: European Economic Review.

290 Knauth, Florian and Wrona, Jens, There and Back Again: A Simple Theory of Planned Return Migration, May 2018.

289 Fonseca, Miguel A., Li, Yan and Normann, Hans-Theo, Why Factors Facilitating Collusion May Not Predict Cartel Occurrence – Experimental Evidence, May 2018.
Published in: Southern Economic Journal, 85 (2018), pp. 255-275.

288 Benesch, Christine, Loretz, Simon, Stadelmann, David and Thomas, Tobias, Media Coverage and Immigration Worries: Econometric Evidence, April 2018.
Published in: Journal of Economic Behavior & Organization, 160 (2019), pp. 52-67.

287 Dewenter, Ralf, Linder, Melissa and Thomas, Tobias, Can Media Drive the Electorate? The Impact of Media Coverage on Party Affiliation and Voting Intentions, April 2018.
Published in: European Journal of Political Economy, 58 (2019), pp. 245-261.

286 Jeitschko, Thomas D., Kim, Soo Jin and Yankelevich, Aleksandr, A Cautionary Note on Using Hotelling Models in Platform Markets, April 2018.

285 Baye, Irina, Reiz, Tim and Sapi, Geza, Customer Recognition and Mobile Geo-Targeting, March 2018.

284 Schaefer, Maximilian, Sapi, Geza and Lorincz, Szabolcs, The Effect of Big Data on Recommendation Quality. The Example of Internet Search, March 2018.

283 Fischer, Christian and Normann, Hans-Theo, Collusion and Bargaining in Asymmetric Cournot Duopoly – An Experiment, October 2018 (First Version March 2018).
Published in: European Economic Review, 111 (2019), pp.360-379.

282 Friese, Maria, Heimeshoff, Ulrich and Klein, Gordon, Property Rights and Transaction Costs – The Role of Ownership and Organization in German Public Service Provision, February 2018.

281 Hunold, Matthias and Shekhar, Shiva, Supply Chain Innovations and Partial Ownership, February 2018.

280 Rickert, Dennis, Schain, Jan Philip and Stiebale, Joel, Local Market Structure and Consumer Prices: Evidence from a Retail Merger, January 2018.

279 Dertwinkel-Kalt, Markus and Wenzel, Tobias, Focusing and Framing of Risky Alternatives, December 2017.
Published in: Journal of Economic Behavior & Organization, 159 (2019), pp.289-304.

278 Hunold, Matthias, Kesler, Reinhold, Laitenberger, Ulrich and Schlütter, Frank, Evaluation of Best Price Clauses in Online Hotel Booking, December 2017 (First Version October 2016).
Published in: International Journal of Industrial Organization, 61 (2019), pp. 542-571.

277 Haucap, Justus, Thomas, Tobias and Wohlrabe, Klaus, Publication Performance vs. Influence: On the Questionable Value of Quality Weighted Publication Rankings, December 2017.

276 Haucap, Justus, The Rule of Law and the Emergence of Market Exchange: A New Institutional Economic Perspective, December 2017.
Published in: von Alemann, U., D. Briesen & L. Q. Khanh (eds.), The State of Law: Comparative Perspectives on the Rule of Law, Düsseldorf University Press: Düsseldorf 2017, pp. 143-172.

275 Neyer, Ulrike and Sterzel, André, Capital Requirements for Government Bonds – Implications for Bank Behaviour and Financial Stability, December 2017.

274 Deckers, Thomas, Falk, Armin, Kosse, Fabian, Pinger, Pia and Schildberg-Hörisch, Hannah, Socio-Economic Status and Inequalities in Children's IQ and Economic Preferences, November 2017.
Forthcoming in: Journal of Political Economy.

273 Defever, Fabrice, Fischer, Christian and Suedekum, Jens, Supplier Search and Re-matching in Global Sourcing – Theory and Evidence from China, November 2017.
Published in: Antras, P., W. Kohler and E. Yalcin (eds.), Developments in Global Sourcing, MIT Press: Cambridge (Mass.) 2018, pp. 243-267.

272 Thomas, Tobias, Heß, Moritz and Wagner, Gert G., Reluctant to Reform? A Note on Risk-Loving Politicians and Bureaucrats, October 2017.
Published in: Review of Economics, 68 (2017), pp. 167-179.

271 Caprice, Stéphane and Shekhar, Shiva, Negative Consumer Value and Loss Leading, October 2017.

270 Emch, Eric, Jeitschko, Thomas D. and Zhou, Arthur, What Past U.S. Agency Actions Say About Complexity in Merger Remedies, With an Application to Generic Drug Divestitures, October 2017.
Published in: Competition: The Journal of the Antitrust, UCL and Privacy Section of the California Lawyers Association, 27 (2017/18), pp. 87-104.

269 Goeddeke, Anna, Haucap, Justus, Herr, Annika and Wey, Christian, Flexibility in Wage Setting Under the Threat of Relocation, September 2017.
Published in: Labour: Review of Labour Economics and Industrial Relations, 32 (2018), pp. 1-22.

268 Haucap, Justus, Merger Effects on Innovation: A Rationale for Stricter Merger Control?, September 2017.
Published in: Concurrences: Competition Law Review, 4 (2017), pp.16-21.

267 Brunner, Daniel, Heiss, Florian, Romahn, André and Weiser, Constantin, Reliable Estimation of Random Coefficient Logit Demand Models, September 2017.

266 Kosse, Fabian, Deckers, Thomas, Schildberg-Hörisch, Hannah and Falk, Armin, The Formation of Prosociality: Causal Evidence on the Role of Social Environment, July 2017.
Forthcoming in: Journal of Political Economy.

265 Friehe, Tim and Schildberg-Hörisch, Hannah, Predicting Norm Enforcement: The Individual and Joint Predictive Power of Economic Preferences, Personality, and Self-Control, July 2017.
Published in: European Journal of Law and Economics, 45 (2018), pp. 127-146

264 Friehe, Tim and Schildberg-Hörisch, Hannah, Self-Control and Crime Revisited: Disentangling the Effect of Self-Control on Risk Taking and Antisocial Behavior, July 2017.
Published in: European Journal of Law and Economics, 45 (2018), pp. 127-146.

263 Golsteyn, Bart and Schildberg-Hörisch, Hannah, Challenges in Research on Preferences and Personality Traits: Measurement, Stability, and Inference, July 2017.
Published in: Journal of Economic Psychology, 60 (2017), pp. 1-6.

262 Lange, Mirjam R.J., Tariff Diversity and Competition Policy – Drivers for Broadband Adoption in the European Union, July 2017.
Published in: Journal of Regulatory Economics, 52 (2017), pp. 285-312.

261 Reisinger, Markus and Thomes, Tim Paul, Manufacturer Collusion: Strategic Implications of the Channel Structure, July 2017.
Published in: Journal of Economics & Management Strategy, 26 (2017), pp. 923-954.

260 Shekhar, Shiva and Wey, Christian, Uncertain Merger Synergies, Passive Partial Ownership, and Merger Control, July 2017.

259 Link, Thomas and Neyer, Ulrike, Friction-Induced Interbank Rate Volatility under Alternative Interest Corridor Systems, July 2017.

258 Diermeier, Matthias, Goecke, Henry, Niehues, Judith and Thomas, Tobias, Impact of Inequality-Related Media Coverage on the Concerns of the Citizens, July 2017.

257 Stiebale, Joel and Wößner, Nicole, M&As, Investment and Financing Constraints, July 2017.
Forthcoming in: International Journal of the Economics of Business.

256 Wellmann, Nicolas, OTT-Messaging and Mobile Telecommunication: A Joint Market? – An Empirical Approach, July 2017.
Forthcoming in: Telecommunications Policy under the title “Are OTT Messaging and Mobile Telecommunication an Interrelated Market? An Empirical Analysis“.

255 Ciani, Andrea and Imbruno, Michele, Microeconomic Mechanisms Behind Export Spillovers from FDI: Evidence from Bulgaria, June 2017.
Published in: Review of World Economics, 153 (2017), pp. 704-734.

254 Hunold, Matthias and Muthers, Johannes, Spatial Competition with Capacity Constraints and Subcontracting, October 2018 (First Version June 2017 under the title “Capacity Constraints, Price Discrimination, Inefficient Competition and Subcontracting”).

253 Dertwinkel-Kalt, Markus and Köster, Mats, Salient Compromises in the Newsvendor Game, June 2017.
Published in: Journal of Economic Behavior & Organization, 141 (2017), pp. 301-315.

252 Siekmann, Manuel, Characteristics, Causes, and Price Effects: Empirical Evidence of Intraday Edgeworth Cycles, May, 2017.

251 Benndorf, Volker, Moellers, Claudia and Normann, Hans-Theo, Experienced vs. Inexperienced Participants in the Lab: Do they Behave Differently?, May 2017.
Published in: Journal of the Economic Science Association, 3 (2017), pp.12-25.

250 Hunold, Matthias, Backward Ownership, Uniform Pricing and Entry Deterrence, May 2017.

249 Kreickemeier, Udo and Wrona, Jens, Industrialisation and the Big Push in a Global Economy, May 2017.

248 Dertwinkel-Kalt, Markus and Köster, Mats, Local Thinking and Skewness Preferences, April 2017.

247 Shekhar, Shiva, Homing Choice and Platform Pricing Strategy, March 2017.

246 Manasakis, Constantine, Mitrokostas, Evangelos and Petrakis, Emmanuel, Strategic Corporate Social Responsibility by a Multinational Firm, March 2017.
Published in: Review of International Economics, 26 (2018), pp. 709-720.

245 Ciani, Andrea, Income Inequality and the Quality of Imports, March 2017.

244 Bonnet, Céline and Schain, Jan Philip, An Empirical Analysis of Mergers: Efficiency Gains and Impact on Consumer Prices, February 2017.

243 Benndorf, Volker and Martinez-Martinez, Ismael, Perturbed Best Response Dynamics in a Hawk-Dove Game, January 2017.
Published in: Economics Letters, 153 (2017), pp. 61-64.

242 Dauth, Wolfgang, Findeisen, Sebastian and Suedekum, Jens, Trade and Manufacturing Jobs in Germany, January 2017.
Published in: American Economic Review, Papers & Proceedings, 107 (2017), pp. 337-342.

Older discussion papers can be found online at:
http://ideas.repec.org/s/zbw/dicedp.html

Heinrich-Heine-University of Düsseldorf

Department of Economics

Universitätsstraße 1 _ 40225 Düsseldorf
www.dice.hhu.de

ISSN 2190-9938 (online)
ISBN 978-3-86304-327-8