Institute for Fiscal Studies

Aitor Irastorza-Fadrique
Peter Levell
Matthias Parey

Working paper
24/07

Household responses to trade shocks

Economic and Social Research Council

Household Responses to Trade Shocks*

Aitor Irastorza-Fadrique† Peter Levell‡ Matthias Parey§

March 21, 2024

Abstract

We study the impact of Chinese import competition in the 2000s on workers and their households in England and Wales. We document both the direct employment changes of individuals affected by trade exposure, as well as the employment response of individuals whose partner is exposed to trade. We find substantial differences by gender. Men respond to import competition by increasing labour force participation at older ages, and by moving into self-employment. This is true both in response to their own trade exposure, and as an 'added worker effect' when their partner is exposed to the shock. By contrast, we find no such response for women, who do not increase labour supply following shocks affecting their partners. Gender differences in employment responses reflect differing opportunities in the self-employed sector: male workers exposed to import competition disproportionately enter self-employed jobs in historically male-dominated occupations, as do men reacting to shocks affecting their partners.

JEL Classification: D10, F14, F16, F61, J12
Keywords: Import Competition, Families, Labour Supply, Added-Worker Effects, Gender

*We thank Wolfgang Dauth, Emma Duchini, Luke Heath Milsom, Nick Reynolds, Maddalena Ronchi, Maurizio Zanardi, as well as seminar participants at the European University Institute, University of Warwick, IZA, IFS, University of Essex, Collegio Carlo Alberto, TU Dortmund, University of Cagliari, CEP-LSE, UC Dublin, University of Galway, RES Conference in Glasgow, EEA in Barcelona, and ETSG in Surrey for helpful comments. This project was supported by the ESRC through the ESRC-funded Centre for Microeconomic Analysis of Public Policy at the Institute for Fiscal Studies (grant reference ES/M010147/1) and through the grant 'Productivity, wages and the labour market' (grant reference ES/W010453/1). Irastorza-Fadrique also acknowledges doctoral scholarship support from the University of Essex Social Sciences and the IFS. The permission of the Office for National Statistics (ONS) to use the Longitudinal Study (LS) is gratefully acknowledged, as is the help provided by the staff of the Centre for Longitudinal Study Information & User Support (CeLSIUS). CeLSIUS is funded by the ESRC under project ES/V003488/1. The authors alone are responsible for the interpretation of the data. This work contains statistical data from ONS which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates. Errors remain ours.

†Institute for Fiscal Studies (IFS). Email: aitor.irastorza-fadrique@ifs.org.uk
‡Institute for Fiscal Studies (IFS). Email: peter_l@ifs.org.uk
§School of Economics, University of Surrey. Email: m.parey@surrey.ac.uk

1 Introduction

A sizable body of empirical research has shown that trade shocks can have lasting effects on both individual workers and local labour markets. The impact of trade shocks on households, as opposed to individuals, has however received less attention. The responses of households are important for several reasons. The partners of those directly affected can increase labour supply or extend their working lives to compensate for adverse economic impacts. Shocks can also affect household formation or dissolution. Finally, household members can respond to shocks in different ways according to the margins that are available to them, which in turn may differ by gender.

In this paper, we use longitudinal, linked census data from England and Wales to study the responses of both workers *and* their partners to rising import competition with China in the 2000s, a salient case of a large trade shock (Autor et al., 2016). We document three key facts. First, employment responses to the trade shocks differ substantially across men and women with similar degrees of exposure. In particular, men are more likely to transition into self-employment and to extend their working lives at older ages. Second, we show that being employed in an exposed industry reduces the probability of divorce among young women, while having no effect on the marriage or divorce rates of young men. Third, we document added worker effects, with again asymmetric responses by gender. Men are more likely to increase labour supply in response to shocks affecting their female partners, while we do not find evidence for the converse. The latter is true irrespective of whether young children are present in the household.

We consider several reasons why responses by gender should differ both in response to their own and partners' exposure to rising import competition. The results point to men having greater access to opportunities in the self-employed sector, allowing them greater flexibility to increase their labour supply. We find that male-dominated occupations such as taxi drivers and plumbers account for a disproportionate share of the transitions of men initially employed in exposed industries, indicating that it is these jobs that provide men with an 'employment buffer'. Similarly, the increase in self-employment among men whose partners were exposed to rising import competition is entirely accounted for by historically male-dominated jobs. We find no evidence for other potential explanations including differences in men and women's initial hours and broad occupation, or effects on fertility that might affect women's labour market responses differently to men's.

We use data from the Longitudinal Study (LS) produced by the Office for National Statistics (ONS). The LS is uniquely suited for our purpose as it contains detailed information for all residents in the household on demographic characteristics and labour market activity. This includes information on workers' hours, industry and occupation as well as their employment and self-employment status, and for those not participat-

ing in the labour market, the reason for their inactivity. The UK is an interesting case for investigating the adjustment processes to trade shocks, given that it experienced the largest percentage decline in manufacturing employment among OECD countries during the 2000s, at the same time as a large increase in its trade deficit with China (Dorn & Levell, 2021). Our empirical analysis compares households with similar characteristics, but whose members differ in exposure to import competition based on narrowly defined industries: those working in industries where China's comparative advantage is strongest are the most exposed. We measure how outcomes changed from 2001 to 2011, subsequent to China's entry into the World Trade Organisation (WTO) in December 2001. Following Autor et al. (2014), we instrument for the exposure to import competition in each industry using the growth in Chinese exports to other developed economies. This strategy isolates the variation in Chinese imports to the UK due to changes in supply and trade-related conditions abroad, rather than domestic demand.

Our work contributes to several strands of the literature. The first is the literature on the labour market effects of trade shocks. A large body of research has studied the consequences of increased Chinese import competition at the local labour market, firm, and individual level (Autor et al., 2013; Utar, 2014; Balsvik et al., 2015; Bloom et al., 2016; Foliano & Riley, 2017; Dauth et al., 2021; Citino & Linarello, 2021; De Lyon & Pessoa, 2021). Several other studies have examined the effects of trade shocks based on other episodes, including the large import tariff reductions in emerging economies such as India and Brazil (Topalova, 2010; Dix-Carneiro & Kovak, 2017, 2019; Gaddis & Pieters, 2017). We contribute to this literature by studying the labour market responses of partners in the same household as exposed workers.

In doing so, our paper also relates to the more general empirical literature on added worker effects, which studies spousal labour supply responses to economic shocks affecting their partners. Prior work in this area has found mixed results and tended to focus on employment responses of women (e.g. Lundberg, 1985; Stephens, 2002; Attanasio et al., 2005; Goux et al., 2014; Blundell et al., 2016; Halla et al., 2020). We contribute to this literature by studying family labour supply responses in the context of a trade shock, which is likely to be informative about other large-scale structural changes. We also highlight the importance of gender differences in added worker effects, and in particular the responses of men to shocks affecting their female partners. In the same vein, our findings relate to recent papers investigating gender differences in responses to labour market shocks from mass-layoff events (Salvanes et al., 2024; Illing et al., 2024).

This paper also complements an empirical research agenda on the impacts of trade shocks on non-labour outcomes such as family formation and dissolution. Recent papers study how trade shocks affect marriage and divorce rates, as well as fertility in the US (Autor et al., 2019), Denmark (Keller & Utar, 2022), and Germany (Giuntella et al., 2022).

Colantone et al. (2019) study the impacts of import competition on workers' mental distress.

A final contribution we make is to the understanding of how labour market shocks affect transitions into self-employment and the importance of gender in determining these transitions. We show that self-employment acted as an 'employment buffer' for male workers in particular. While providing an alternative source of employment to displaced workers, self-employment, and in particular solo self-employment, is likely to be associated with economic insecurity for many former manufacturing employees (Boeri et al., 2020; Giupponi & Xu, 2020). This is perhaps analogous to the role played by the informal sector in developing countries, which has been found to similarly act as a buffer against the effects of trade shocks (Dix-Carneiro et al., 2024). This shows the importance of using data sources which, unlike employer-employee administrative datasets, cover the self-employed and those outside of the labour force.

The remainder of this paper proceeds as follows. In Section 2, we describe our data. Section 3 sets out our empirical research design. We present the main results in Section 4: 4.1 shows how direct exposure to import competition impacts the outcomes of workers, while 4.2 studies the responses of partners. Section 5 discusses several explanations for the observed gender differences in the responses. Section 6 concludes.

2 Data and Sample Description

2.1 The ONS Longitudinal Study Data

The main dataset we draw on is the Office for National Statistics (ONS) Longitudinal Study (LS, Office for National Statistics, 2019), a unique dataset that links census records for a one per cent sample of the population of England and Wales (people born on one of four selected dates in a calendar year). It includes census records for over 500,000 people usually resident in England and Wales from the 1971, 1981, 1991, 2001, and 2011 censuses.[1] The data contains core socio-demographic variables including the age, sex, marital status and locations of sampled individuals, as well as data on their employment, occupation, industry, and type of employment (e.g. whether they are employees or self-employed, whether they work part-time or full-time, etc). The LS also includes data on co-residents of study members. Although the census asks for detailed information about the nature of individuals' work, it does not include information about earnings or income. Life events data, including birth to sample mothers, which we use to study fertility effects,

[1] A 'usual resident' of the UK is anyone who, on census day, was in the UK and had stayed or intended to stay in the UK for 12 months or more, or had a permanent UK address and was outside the UK and intended to be outside the UK for less than 12 months.

are linked to LS members from administrative sources.

The LS has several advantages for our purposes. First, it is a panel, allowing us to track individuals across censuses held every 10 years. Most of our analysis concerns the impact of import competition on outcomes between the years 2001 and 2011. We also use data from 1981 and 1991 for placebo and robustness exercises. Second, the LS includes not only individuals who are employed but also those who are self-employed or out of the labour force. Those out of the labour force also report the reason they are not working (e.g. because they are studying, retired, sick or at home). Administrative data sources often do not include this information.[2] Third, it includes the survey responses of co-residents of study members. This is essential for our study, as it allows us to study family labour supply responses to shocks affecting an LS member. It also allows us to examine the correlation between exposure to trade shocks across spouses. Fourth, in contrast to many household-level surveys, participation in the census is a legal requirement and the ONS goes to considerable lengths to maximise its coverage (Office for National Statistics, 2015a). Both the 2001 and 2011 censuses have an estimated response rate of 94%. The LS also has low rates of attrition relative to other longitudinal datasets. 88% of LS members in the 2001 census were successfully matched to records in the 2011 census, after excluding those who were known to have died or emigrated (Lynch et al., 2015).

2.2 Other Data Sources

To construct measures of industries' exposure to import competition, we use data on trade flows from the United Nations Commodity Trade Statistics Database (UN Comtrade), which contains detailed statistics on trade in individual commodities. We obtain imports and exports for each of the three-digit industries in our analysis by mapping these individual commodity codes into the Classification of Product by Activity (CPA) codes, which are identical in their first four digits to the 1992 UK Standard Industrial Classification (SIC92) codes.[3] We deflate trade values into 2010 pound equivalents.[4]

As we describe in more detail below, we measure industries' import exposure as imports relative to total domestic sales. We use the Business Structure Database (BSD, Office

[2]For instance, the UK Annual Survey of Hours and Earnings (ASHE) used in De Lyon & Pessoa (2021) covers employees and thus cannot distinguish movements into self-employment from job loss, and unemployment from non-participation, and the administrative data used to study trade shocks in Germany (Dauth et al., 2021) do not cover the self-employed.

[3]Mappings from Harmonised System (HS) products codes to CPA industry codes are taken from the Eurostat Reference and Management of Nomenclatures (RAMON) Index of Correspondence Tables, available here: https://ec.europa.eu/eurostat/ramon/relations/index.cfm?TargetUrl=LST_REL.

[4]The data show a rapid and sustained increase in reported UK imports from China between 1999 and 2000. This most likely reflects a change in the treatment of imports from Hong Kong which originated in China that year (Baranga, 2018). For this reason, we include imports from Hong Kong in our measures of Chinese imports for the UK, but not in our measures of Chinese imports to other countries (which we use as an instrument for UK imports), as they are unaffected by this issue.

for National Statistics, 2021) to obtain information on the total amount of sales by industry. The BSD is administrative data covering plant-level information on employment, sales, geography, and main industry for almost all business organisations in the UK since 1997 (only very small businesses are not included in the register).[5] We sum sales across individual plants in the BSD to obtain total sales at the industry level.

2.3 Sample Description

We follow workers from 2001, the year China acceded to the WTO, and measure how outcomes change between 2001 and 2011. We focus on employees born between 1942 and 1983 and who were therefore aged between 18 and 59 in 2001. That means that by 2011, some individuals in our sample were above the state pension age, which during the period 2001-2011 was 65 for men and 60 for women. This allows us to study the extent to which individuals adjust the length of their working lives in response to a shock. To study heterogeneity in response to import shocks by household constellation and life-cycle stage, we split our sample into different subgroups by gender, age and couple status.

Table 1 shows descriptives for our sample at baseline in 2001. Our sample includes 83,627 male employees, with almost 24% working in manufacturing in 2001, and 85,170 female employees, 9% of whom were working in manufacturing. Columns (1) and (4), for men and women, respectively, include employees in all industries; columns (2) and (5) only include those employed in manufacturing industries, and columns (3) and (6) only include those employed in the top twenty industries most exposed to Chinese import competition (which are all in manufacturing, see Table A.1 for the list of included industries). Because our regressions will control for one-digit industry fixed effects, our empirical analysis effectively compares changes in outcomes for workers in more and less exposed manufacturing industries. The table shows that workers in the most exposed manufacturing industries are broadly similar to other manufacturing workers in terms of their baseline characteristics, although there are some differences, as we now discuss.

Panel A presents demographic characteristics on age and whether born abroad. The average age of workers is similar across different sectors. Workers in highly exposed industries were slightly more likely to be foreign-born than other manufacturing workers.

Panel B shows information on individuals' marital status and family situation. Men working in manufacturing industries were four percentage points more likely to have a partner and to be married than those working in non-manufacturing industries. However, both men and women in the most exposed manufacturing industries were similar to other manufacturing workers in terms of their partnering and whether they had children.

[5]The BSD is derived from the Inter-Departmental Business Register (IDBR), which is a live register of plant data collected by HM Revenue and Customs via VAT and Pay As You Earn (PAYE) records.

Table 1: Summary Statistics: Worker Characteristics in 2001.

	MEN			WOMEN		
	(1)	(2)	(3)	(4)	(5)	(6)
	All Industries	Manuf. Industries	High Exposed Industries	All Industries	Manuf. Industries	High Exposed Industries
Observations	83,627	19,970	4,578	85,170	7,889	2,521
(with partners)	(57,415)	(14,651)	(3,258)	(58,084)	(5,510)	(1,797)
	Panel A. Demographic Characteristics					
Age	38.44	39.53	38.91	38.61	38.60	39.34
Foreign-born	0.083	0.069	0.095	0.081	0.093	0.120
	Panel B. Marriage and Family Characteristics					
Single	0.346	0.297	0.312	0.299	0.311	0.286
Married	0.581	0.625	0.610	0.583	0.574	0.604
Widowed	0.004	0.005	–	0.014	0.013	0.015
Divorced	0.068	0.073	0.075	0.104	0.102	0.095
Has Partner	0.687	0.729	0.713	0.683	0.699	0.714
Has Children	0.426	0.439	0.433	0.432	0.358	0.374
Has Young Children	0.157	0.157	0.171	0.126	0.116	0.110
	Panel C. Labour Market Characteristics					
Part-time	0.062	0.019	0.029	0.409	0.212	0.200
Hours worked	42.19	42.37	41.95	31.56	35.59	35.84
Low-skill	0.243	0.144	0.144	0.605	0.404	0.340
Blue-collar	0.302	0.499	0.500	0.054	0.316	0.464
White-collar	0.455	0.356	0.355	0.341	0.279	0.196
	Panel D. Partner Characteristics					
Partner age	39.70	40.18	39.46	43.21	42.88	43.54
Partner hours worked	21.51	20.77	20.61	38.88	38.77	38.11
Partner manufacturing	0.103	0.177	0.195	0.232	0.425	0.444
Partner active	0.786	0.790	0.770	0.929	0.929	0.925
Partner employed	0.730	0.741	0.716	0.764	0.784	0.780
Partner self-employed	0.039	0.032	0.033	0.147	0.127	0.126
Partner unemployed	0.017	0.017	0.020	0.018	0.018	0.019
Partner inactive home	0.151	0.146	0.167	0.007	–	–

Notes: The table shows mean values for employees in the 2001 Longitudinal Study. Columns (1) and (4) (for the sample of men and women, respectively) include employees in all industries, columns (2) and (5) includes only those employed in manufacturing industries, and columns (3) and (6) only include those employed in the top 20 three-digit SIC92 industries most exposed to Chinese import competition (see Table A.1). Cells marked "–" are cases where average values have been suppressed because they were calculated with fewer than 10 individuals. Source is ONS Longitudinal Study.

Panel C shows that general patterns of employment differ across men and women. 41% of female employees worked part-time, while the fraction of male employees working part-time was just 6%. Within manufacturing, the fractions working part-time were substantially lower, at 21% for women and 2% for men. Men and women were also employed in different occupations, which we group into low-skill, blue-collar, and white-collar occupations.[6] In particular, 30% of men worked in blue-collar occupations compared to just 5% of women. Within highly-exposed industries, a more similar and larger proportion of workers of both sexes were employed in blue-collar occupations: 50% of men and 46% of women. However, men in highly trade-exposed industries were more likely to work in white-collar roles, while women in these industries were more likely to work in low-skill occupations. The proportions of men in different occupations in highly-exposed industries are almost identical to the proportions for manufacturing as a whole. Women in highly-exposed industries are however more likely to be in blue-collar occupations than women in other manufacturing industries.

Panel D summarises partner characteristics for those LS members with partners.[7] 21% of men's partners were not active participants in the labour market. Of these, about 71% reported being inactive because they were "looking after the home". Only 18% of men in manufacturing had a partner who was also employed in manufacturing, suggesting significant scope for intra-household insurance. By contrast, only 7% of female workers' partners were inactive and 23% worked in manufacturing (rising to 43% for partners of women who themselves worked in manufacturing). Those in the most exposed industries were very similar in terms of their partner's baseline characteristics to other manufacturing workers.

2.4 The 'China shock'

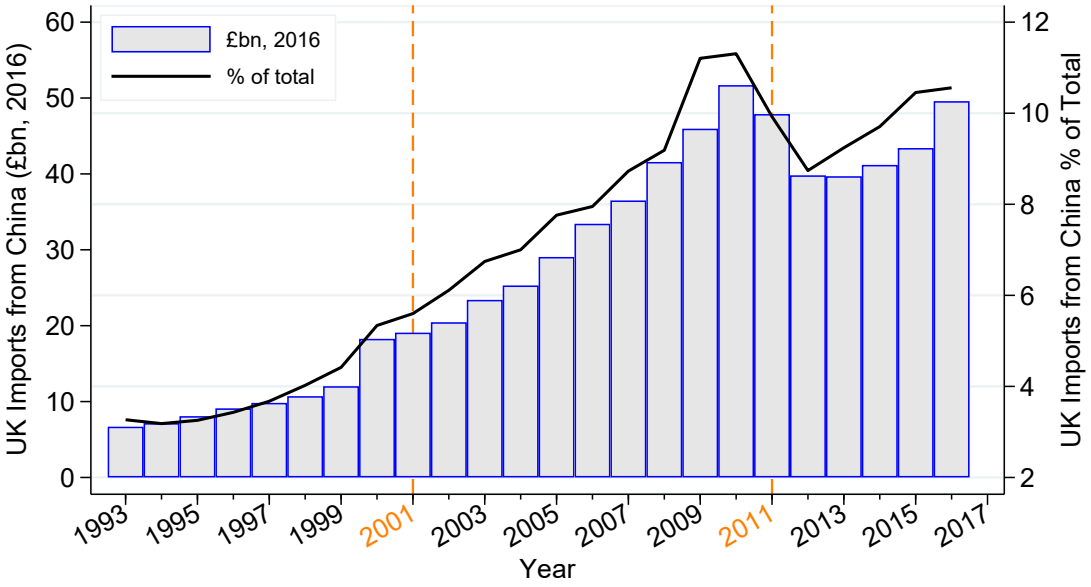
Our analysis exploits the rapid increase in Chinese exports surrounding China's entry into the WTO in December 2001. This increase has been attributed to several factors including lowered tariffs on imported inputs, the end of international import quotas under the Multi Fibre Arrangement (MFA), a reduction in trade uncertainty, as well as continued rapid Chinese productivity growth during this period (see, e.g. Pierce & Schott, 2016; Handley & Limao, 2017; Amiti et al., 2020).

[6] Based on UK Standard Occupational Classification SOC2000, we define blue-collar workers as those employed in "skilled trades occupations" and "process, plant and machine operatives". Low-skill workers are those employed in "administrative and secretarial occupations", "caring, leisure and other service occupations", "sales and customer service occupations" and "elementary occupations". Finally, white-collar workers are defined as those working in "managers, directors and senior officials", "professional occupations", and "associate professional and technical occupations".

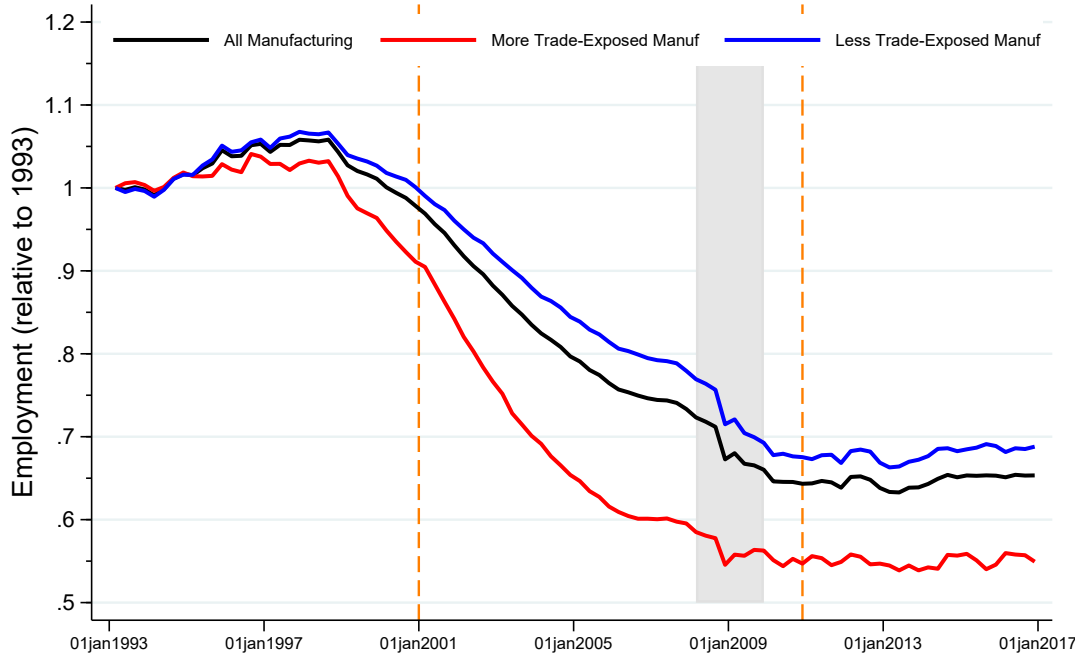
[7] This includes married and cohabiting couples where both partners are observed.

Figure 1: Import Competition and Manufacturing Decline in the UK (1993-2016)

(a) Import Competition between the UK and China (1993-2016)



(b) Manufacturing Employment: More vs Less Trade-Exposed (1993-2016)



Notes: Panel (a) shows the growth in imports from China between 1993 and 2016. The left y-axis shows the real value of UK imports from China in 2016 billion pound equivalents. The right y-axis shows UK imports from China as a fraction of total imports. The source is the United Nations Comtrade Database. Panel (b) shows the decline in manufacturing employment relative to 1993 employment levels, split by all manufacturing industries (black), manufacturing industries most exposed to import exposure (red), and manufacturing industries less exposed (blue). The most trade-exposed manufacturing industries are: Textiles, Wearing Apparel, Leather, Footwear, Office Machinery, Electrical Machinery, Radio & TV equipment, Other Transport Equipment, Furniture, and Games and Toys. The source is ONS – UK Total Employee Jobs by Industry, Quarterly Data.

Figure 1a shows the timing and scale of the rapid increase in Chinese imports to the UK. Most of this increase occurred in the 2000s. During this time, the share of the UK's total imports coming from China almost doubled, and the real value of imports from China increased from approximately £20 billion in 2001 to around £50 billion in 2011. Imports were concentrated in low-tech manufacturing (e.g. the manufacture of games and toys; luggage and handbags; footwear; leather), consistent with China's comparative advantage in labour-intensive activities during this period (Amiti & Freund, 2010).[8]

Figure 1b shows that this increase in imports was accompanied by a decline in manufacturing employment that occurred almost entirely within our period of analysis (2001-2011). This decline was focused on the most trade-exposed industries, whose employment declined by 45 percentage points between 1993 and 2011 compared to 32 percentage points for the least trade-exposed manufacturing industries. Figure 1b also shows that the faster decline in employment among the most trade-exposed industries that occurred during our sample period was not due to the Great Recession of 2008-09 (highlighted in grey), but rather occurred in the period before 2007 when import competition from China was rising steeply. The impact of the recession itself on manufacturing employment was similar across more and less-trade exposed manufacturing industries.

3 Empirical Approach

Our empirical strategy uses cross-industry variation, following Autor et al. (2014). We construct our measure of import exposure by industry as the growth in imports from China during 2001-2011 relative to that industry's total domestic sales (i.e. industry sales plus UK imports minus exports):

$$IE^{UK}_{j,2011-2001} = \frac{\Delta Imports^{China \rightarrow UK}_{j,2011-2001}}{Turnover_{j,2001} + Imports_{j,2001} - Exports_{j,2001}} \tag{1}$$

Individuals are then assigned different import exposures according to their industry of employment in 2001, using three-digit UK Standard Industrial Classification (SIC92). We compare own and partners' outcomes for workers with similar characteristics, but who are initially employed in industries with different levels of exposure to import competition. The baseline specification controls for age and sex, as well as fixed effects for initial occupation, local labour market and broad industry sector:

$$\Delta Y_{ij,t_1-t_0} = \alpha + \beta\, IE^{UK}_{j,t_1-t_0} + \delta X_{ij,t_0} + \gamma^{occ} + \gamma^{ind} + \gamma^{ttwa} + \epsilon_{ij,t_1-t_0} \tag{2}$$

[8] Appendix Table A.1 shows the 20 industries most affected by import competition between 2001-2011.

where i is for individual, j is for industry, and $t_1 = 2011$ and $t_0 = 2001$. $\Delta Y_{ij,t_1-t_0}$ is the change in outcome Y between 2001-2011 for individual i who was employed in industry j in 2001. This can denote outcomes attributed to workers directly affected by import competition and outcomes related to their partners. The coefficient β captures the effect of increased import competition. The vector X_{ij,t_0} contains baseline controls for individuals' sex, five-year age groups and their interaction with sex, and foreign-born status. We include two-digit occupation (γ^{occ}) and one-digit industry fixed effects (γ^{ind}) to account for industry and occupation-specific trends (e.g. those related to the automation of routine tasks). We also include local labour market fixed effects (γ^{ttwa}), which are defined as 2001 Travel to Work Areas (TTWAs); geographical units analogous to Commuting Zones (CZ) in the US.[9] We cluster standard errors at the level of three-digit industries, allowing for correlation in error terms among workers who are initially employed in the same narrow industry. To ease interpretation, we scale eq. (1) by the interquartile range of exposure across all manufacturing workers, such that the reported estimates of β can be interpreted as the effect of moving a worker from the 25th to the 75th percentile in the exposure distribution among manufacturing workers. For individuals initially employed in manufacturing, the average increase in import exposure from China between 2001-2011 was 3.96 percentage points, and the interquartile range was 5.87 (see Appendix Table A.4).

When studying how individuals respond to trade shocks affecting their household partners, we extend the specification in eq. (2) by controlling for partners' characteristics, namely the age, one-digit occupation, and one-digit industry fixed effects. A possible concern in this analysis is that partners may both be exposed to the same shocks (for example if they both work in the same industry), meaning that our results on partner's responses might capture the effects of correlated shocks rather than spillovers within the household. In the Appendix, we investigate the degree to which partners are differently affected by increased import competition. The exposure of partners in the same household tends to be low, with a correlation coefficient of just 0.22 across all workers (see Table A.5). We also show in the next section that our main results are robust to restricting the sample to cases where the partners of LS members are not employed in trade-exposed industries.

The growth in import exposure could in part reflect domestic demand or productivity shocks, which we could confound with the role of growing import competition. To address this, we follow the standard approach in the literature and employ an instrumental variable (IV) strategy aimed at isolating the role of factors driving Chinese export growth

[9]There are 186 TTWAs in England and Wales, generated such that at least 75% of the area's resident workforce work in the area and 75% of the people who work in the area also live in the area. Individuals are assigned to TTWAs using a time-consistent definition of TTWAs across censuses from Montresor (2019). We obtain similar results if we replace these TTWA level controls with fixed effects for the much larger 11 regions.

that is specific to China. We thus instrument for import exposure in eq. (1) with

$$\widetilde{IE}_{j,2011-2001} = \frac{\Delta Imports^{China \rightarrow Other}_{j,2011-2001}}{Turnover_{j,1997} + Imports_{j,1997} - Exports_{j,1997}} \tag{3}$$

where the numerator is the change in imports from China from 2001 to 2011 to other non-UK high-income countries.[10] Equation (3) uses sales, import and export levels from 1997, the earliest year in which we observe sales, to avoid the potential endogeneity of using 2001 imports and sales that may have already been influenced by Chinese import growth. In the Appendix, we show the first-stage regression, regressing the value in eq. (1) on the value in eq. (3). The results in Table A.2 and A.3 show that import growth for different industries in these other countries is highly predictive of UK import growth from China.[11] The identifying assumption is that common patterns in Chinese trade across developed countries are predominantly driven by supply and trade-related factors rather than correlated demand or technology shocks. In support of this assumption, Autor et al. (2014) obtain very similar results when measuring the change in import exposure using residuals from a gravity model of trade flows, suggesting that correlated import demand shocks across high-income countries play little role.[12]

We run several checks to confirm that our results do indeed reflect the effects of increased import competition rather than other factors. We adjust the specification to include more or fewer controls for industry and occupation characteristics, and to see how our results are affected if we remove occupation effects all together. The effect of these changes on our results is small. In addition, to verify our results do not reflect industry-specific trends that predate the rise of import competition from China, we repeat our main regression specifications for the decades 1981-1991 and 1991-2001, using workers' *future* (2001-2011) exposure to growing Chinese import competition (see Appendix B for these results). We find no evidence that workers employed in 1981 in industries that would later be exposed to Chinese import competition saw greater exits from manufacturing or a higher unemployment rate in 1991. The effects of future import competition on unemployment and manufacturing employment are slightly greater when we measure them for the 1991-2001 period but they remain small and statistically insignificant at 5%. This is not unexpected as the rapid growth in Chinese imports to the UK began towards the

[10] Australia, Canada, Denmark, France, Germany, Italy, Japan, Spain, Switzerland, and the US. As we show in the Appendix, our results are robust to using different sets of countries to construct the instrument.

[11] We report the first-stage *F*-statistic in each table we present in the following sections. For the first stages in our labour supply regressions, for example, we obtain *F*-statistics of about 30 for males and 35 for females.

[12] The gravity approach neutralises demand conditions in importing countries by using the change in China's exports relative to its exports within destination markets, helping to isolate supply and trade cost-driven changes in China's export performance, see further Autor et al. (2014).

end of this later period, around 1998-1999, as shown in Figure 1.

We also check whether the growth in immigration to the UK in the 2000s, particularly from Eastern Europe, could confound our results by examining the extent to which trade-exposed industries saw greater growth in the share of foreign-born workers. This appears not to be the case. We find that the correlation between import exposure and the growth in the share of foreign workers is essentially zero, both for all industries ($\rho = -0.018$) as well as for only manufacturing industries ($\rho = -0.040$). We discuss further robustness checks alongside our results in the next section.

4 Responses to Import Competition

4.1 Own Responses to Import Competition

Employment Outcomes

We start by studying how direct exposure to import competition impacts the employment outcomes of workers. Table 2 shows regression results for different labour market outcomes: employment in manufacturing, unemployment, employment in any industry (manufacturing or non-manufacturing), self-employment and being active in the labour force (columns (1)-(5), respectively).[13] By construction, the coefficients in columns (2)-(4) sum to those in column (5). The regressions are estimated by two-stage least squares (2SLS), using the variable described in eq. (3) as an instrument for the change in import exposure given in eq. (1). All regressions include the full set of controls discussed in Section 3. The table reports the mean of the dependent variable for each outcome to benchmark the magnitudes of the effects relative to general trends, as well as the relevant first-stage F-statistic.

Panel A shows the results for all (male and female) workers in our sample. Import exposure significantly decreases the probability of being employed in manufacturing and increases the probability of unemployment (columns (1)-(2)). In particular, increasing import exposure from the 25th percentile to the 75th percentile among manufacturing workers reduces the probability that a worker is employed in manufacturing in 2011 by 7.5 percentage points and increases the probability they are unemployed by 0.5 ppt (to provide a sense of scale for the latter effect, the unemployment rate in 2011 was 7.4%, (Office for National Statistics, 2013)). While the effect on manufacturing employment is considerable, we do not detect a statistically significant effect on the overall probability of employment (column (3)). This implies that workers initially employed in industries exposed to import competition mostly transferred to work in non-manufacturing sectors.

[13] The change in employment in non-manufacturing can be inferred using columns (1) and (3).

We study their occupation transitions in more detail below.

Panels B and C show how the effects of import exposure differ by gender. Men and women in exposed industries respond quite differently. The negative impact of import exposure on manufacturing employment is greater for men than women; with a one unit change in import exposure associated with a 7.4 ppt decline in male manufacturing employment, compared to a 5.8 percentage point decline in female manufacturing employment. For men, there is also a significant increase in unemployment, alongside an increase in economic activity (column (5)), while for women the point estimates in columns (2) and (5), although not statistically significant, suggest that import exposure leads to economic inactivity rather than unemployment.

An advantage of our data is that we can follow transitions into self-employment, unlike other administrative datasets that follow employees only. This turns out to be important. As the mean dependent variables in Table 2 show, there was a general increase in self-employment over this period, particularly among men. The share of our sample who are self-employed increased by 10.2 percentage points among men and 4.8 ppt among women. While a one-unit increase in import exposure decreases the likelihood that men are employees in 2011 by 1.1 ppt, it increases the likelihood they are self-employed by 0.9 ppt (columns (3)-(4)). These results indicate that for men, transitions to self-employment are an additional means of insurance against job loss caused by import competition. By contrast, we do not find evidence of such a buffer effect for women, who are no more likely to move into self-employment if exposed to the trade shock.

Self-employment includes both solo self-employment (i.e. own account workers without employees) and self-employment with employees (those who run businesses and hire workers). This distinction and the transitions across these self-employment outcomes matter for the interpretation of the effects. Those starting their own businesses and hiring their own employees are likely to be moving to a better position than those moving into solo-self-employment, which is often associated with economic insecurity (Giupponi & Xu, 2020). Appendix Table A.6 decomposes the impact of import exposure on self-employment by its type. Around two-thirds of the self-employment effect for men is accounted for by an increase in solo self-employment. There is a smaller but marginally significant effect of import exposure on the proportion of men who became self-employed with employees.[14]

[14] Appendix Table A.6 also shows that this effect on self-employment with employees is mainly driven by young men. In contrast, the increase in solo self-employment is mainly driven by older men.

Table 2: Import Exposure and Labour Market Responses by Gender

	(1) Δ manuf	(2) Δ unempl	(3) Δ empl	(4) Δ self-empl	(5) Δ active
	Panel A. All				
Import Exposure	-7.483***	0.480**	-0.736	0.296	0.039
	(2.243)	(0.235)	(0.604)	(0.282)	(0.399)
Mean Dep. Var.	-7.60	2.65	-28.35	7.50	-18.19
First-Stage *F*-stat	[32.12]	[32.12]	[32.12]	[32.12]	[32.12]
Observations	168,797	168,797	168,797	168,797	168,797
	Panel B. Men				
Import Exposure	-7.410***	0.802***	-1.116*	0.897**	0.583*
	(2.187)	(0.274)	(0.675)	(0.371)	(0.348)
Mean Dep. Var.	-10.14	3.24	-27.87	10.23	-14.39
First-Stage *F*-stat	[29.23]	[29.23]	[29.23]	[29.23]	[29.23]
Observations	83,627	83,627	83,627	83,627	83,627
	Panel C. Women				
Import Exposure	-5.801**	0.057	-0.117	-0.620	-0.681
	(2.314)	(0.309)	(0.721)	(0.388)	(0.542)
Mean Dep. Var.	-5.12	2.07	-28.82	4.81	-21.92
First-Stage *F*-stat	[35.25]	[35.25]	[35.25]	[35.25]	[35.25]
Observations	85,170	85,170	85,170	85,170	85,170

Notes: Table shows the effect of import exposure on individual labour market outcomes. Dependent variables in columns (1)-(5) are: being employed in manufacturing, being unemployed, employed, self-employed and active in the labour market (unemployed or in-work). The regressions in all columns are estimated using two-stage least squares (2SLS), with the variable described in eq. (3) as an instrument for the change in import exposure given in eq. (1). Controls are the worker's gender, five-year age groups interacted with gender, and a dummy for whether the worker was foreign-born. We also include a two-digit occupation, one-digit industry, and local labour market (defined as 2001 Travel to Work Areas) fixed effects. See Section 3 for more details. Standard errors are clustered at the (SIC92) three-digit industry level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Heterogeneity in effects by age

Table 3 reports the results split by both age and gender. We classify those aged 18-44 in 2001 as 'young', and those aged 45-59 as 'old'. The impact of import exposure on manufacturing employment is stronger for young workers than for old, among both men and women: A one-unit change in the import exposure measure decreases the probability a worker is employed in manufacturing by almost 9 ppt for young men (6.3 ppt for young women) relative to 5 ppt for old men (4.8 ppt for old women).

The table also reveals interesting differences in the labour market responses of men by age (panels A and B). Young male workers exposed to import competition are less likely

Table 3: Import Exposure and Labour Market Responses by Gender and Age

	(1) Δ manuf	(2) Δ unempl	(3) Δ empl	(4) Δ self-empl	(5) Δ active
	Panel A. Young Men				
Import Exposure	-8.946***	0.870**	-2.041***	0.766**	-0.405**
	(2.520)	(0.357)	(0.686)	(0.401)	(0.206)
Mean Dep. Var.	-7.64	3.45	-19.04	11.63	-3.96
First-Stage *F*-stat	[26.20]	[26.20]	[26.20]	[26.20]	[26.20]
Observations	56,472	56,472	56,472	56,472	56,472
	Panel B. Old Men				
Import Exposure	-5.018**	0.717**	0.564	1.018*	2.298**
	(2.087)	(0.313)	(0.972)	(0.593)	(0.895)
Mean Dep. Var.	-15.34	2.82	-46.23	7.32	-36.09
First-Stage *F*-stat	[35.32]	[35.32]	[35.32]	[35.32]	[35.32]
Observations	27,155	27,155	27,155	27,155	27,155
	Panel C. Young Women				
Import Exposure	-6.268***	0.317	-0.312	-0.685	-0.679
	(2.276)	(0.441)	(0.596)	(0.459)	(0.421)
Mean Dep. Var.	-4.68	2.47	-18.21	5.68	-10.05
First-Stage *F*-stat	[31.42]	[31.42]	[31.42]	[31.42]	[31.42]
Observations	56,800	56,800	56,800	56,800	56,800
	Panel D. Old Women				
Import Exposure	-4.843*	-0.425**	0.430	-0.526	-0.521
	(2.726)	(0.199)	(1.254)	(0.443)	(1.070)
Mean Dep. Var.	-5.99	1.28	-50.05	3.07	-45.69
First-Stage *F*-stat	[40.95]	[40.95]	[40.95]	[40.95]	[40.95]
Observations	28,370	28,370	28,370	28,370	28,370

Notes: Table shows the effect of import exposure on individual labour market outcomes. See notes of Table 2 for a list of the controls and details on the IV. Standard errors clustered at the three-digit industry level are reported in parentheses. The mean dependent variable and first-stage *F*-statistics are reported below the estimates. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

to be in work by 2011, ultimately leading to a decrease in economic activity (given that movements into self-employment and unemployment did not offset decreases in employment). The opposite is true for old male workers, who are *more* likely to be in work and economically active if initially employed in an exposed industry. To understand what lies behind these results, Appendix Table A.7 decomposes the effects of import exposure on economic inactivity according to different possible reasons: retirement, studying, looking after the home, sickness, and 'other' reasons. The key reason for higher rates of economic activity among old male workers is the reduced probability of retirement. A one-unit

increase in import exposure decreases the likelihood of retirement in 2011 by 3.5 percentage points.[15] This could be partially driven by the increase in self-employment, as older self-employed workers are more likely to remain in paid work than permanent employees (Crawford et al. (2021); Banks (2016)). Another reason to delay retirement might be to compensate for reduced earnings as they move to less well-paid occupations (as we discuss and show below in Table 4). Life-cycle models including Stock & Wise (1990), Scheiber (1992) and Merkurieva (2019) have also explored the use of delayed retirement to compensate for lower retirement savings due to job loss, but this phenomenon remains underexplored in the context of responses to import competition. We do not find any effect on retirement for women.

To sum up the results so far, many of the workers who leave manufacturing in response to higher import exposure find re-employment in non-manufacturing industries. In addition, we find that men, but not women, respond to import shocks by increasing labour force participation at older ages, and by moving into self-employment.

Summary of robustness results for employment effects

The Appendix presents a range of robustness checks for these results. We summarise them in Table C.1 and Table C.2. First, we show that our results are robust to using different country combinations when constructing our instruments for import exposure in eq. (3). Second, we include a richer set of industry- and occupation-specific controls. Industry-specific controls we add are the intensity of R&D stock over capital, ICT stock intensity over capital, computer stock intensity over capital, and the intensity of net capital stock over industry output (measured in the year 1997 and at the two-digit SIC92 industry level). Occupation-specific controls we include are the Routine Task Intensity (RTI, Autor et al. (2003)) and the offshorability index.[16] These additional controls do not affect our main results. We also show that our results do not change if we exclude occupation fixed effects entirely. Third, we repeat our main results replacing the TTWA fixed effects with fixed effects for 11 broad regions. The goal of this exercise is to show that our results are not sensitive to the definition of local labour markets that we use. We obtain similar results. Fourth, we assess the sensitivity of our results to another major contemporary trade shock, namely the accession to the European Union of several Eastern European

[15] A possible concern here is that different retirement behaviour could in part reflect industry-specific trends regardless of the shock, e.g. workers in textiles retiring later than workers in car manufacturing. To check this, we construct measures of mean retirement age by three-digit industry and gender during the period 1995-1998 from the Labour Force Survey (LFS) and add them as additional controls. Our results on retirement are very similar whether or not we include these controls.

[16] These measures are initially constructed at the four-digit US-SOC2010 occupational classification level from the US O*NET database. Official crosswalks are then used to map these measures into the corresponding four-digit UK-SOC2000 occupation categories.

countries in 2004.[17] Accounting for import competition with Eastern Europe does not alter our main findings. Finally, we study whether our results are affected if we control for workers' exposure to rising export demand from China. Controlling for UK exports to China also leaves our main results unchanged.[18]

Occupation transitions

A natural question is how import exposure affects the occupations they are employed in. Table 4 shows a movement of workers initially employed in import-competing industries to different, and on average worse-paid, occupations. The table presents results on how import competition affects the change in workers' employment in low-skill, blue-collar, and white-collar occupations. Trade-exposed workers are more likely to shift out of blue-collar occupations and move into low-skill occupations. These results are also consistent with findings that workers exposed to the China shock, conditional on employment, experienced lower earnings growth, as shown in the US (Autor et al., 2014), Denmark (Utar, 2018) and the UK (De Lyon & Pessoa, 2021).

Looking at heterogeneity by gender, Panel B shows that male workers affected by the trade shocks lose employment in blue-collar occupations and pick up jobs in low-skilled and white-collar occupations. Women in exposed industries see a net shift out of white-collar occupations and a net shift into low-skilled occupations (Panel C). In the Appendix, we extend the analysis to consider a more detailed occupational split, showing results for 1-digit occupations (Figure A.1). Male workers are more likely to lose employment in skilled trades occupations (e.g. TV, radio and audio engineers; musical instrument makers) and more likely to find jobs in elementary occupations (e.g. labourers in building and woodworking trades) as well as technical occupations (e.g. product, clothing and related designers). Women, by contrast, are more likely to lose employment in professional occupations (e.g. design and development engineers) and go into sales and customer service occupations (e.g. retail assistants).

[17] The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia.

[18] Autor et al. (2013) also find that incorporating changes in US exports to China did not affect their estimates. By contrast, Dauth et al. (2014) find that, in Germany, exports to the 'East' (China and Eastern Europe) helped to offset the negative employment effects. All of this is consistent with the fact that both the US and the UK saw large growth in their imports from China but only limited growth in their exports to China, while Germany saw large increases in both its imports from and exports to China and so a much smaller deterioration in its bilateral trade balance (Dorn & Levell (2021)).

Table 4: Import Exposure and Labour Reallocation

	(1) Δ low-skill	(2) Δ blue-collar	(3) Δ white-collar
	Panel A. All		
Import Exposure	1.465***	-2.056***	0.590
	(0.444)	(0.633)	(0.789)
First-stage *F*-stat	[31.00]	[31.00]	[31.00]
Observations	133,605	133,605	133,605
	Panel B. Men		
Import Exposure	1.172**	-2.708***	1.536*
	(0.468)	(0.811)	(0.851)
First-stage *F*-stat	[28.21]	[28.21]	[28.21]
Observations	68,875	68,875	68,875
	Panel C. Women		
Import Exposure	1.151*	0.594	-1.745**
	(0.611)	(0.531)	(0.816)
First-Stage *F*-stat	[33.78]	[33.78]	[33.78]
Observations	64,730	64,730	64,730

Notes: Table shows the effects of import exposure on flows into different occupational groups conditional on remaining in employment. blue-collar workers as those employed in "skilled trades occupations" and "process, plant and machine operatives". Low-skill workers are those employed in "administrative and secretarial occupations", "caring, leisure and other service occupations", "sales and customer service occupations" and "elementary occupations". Finally, white-collar workers are defined as those working in "managers, directors and senior officials", "professional occupations", and "associate professional and technical occupations". This follows from the UK Standard Occupational Classification SOC2000. See note of Table 2 for a list of the controls and details on the IV. Standard errors clustered at the three-digit industry level are reported in parentheses. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Source is ONS Longitudinal Study.

Partnering and Divorce

We next turn to consider the impacts of import exposure on partnering and divorce. Table 5 shows how import exposure affected marital status, with the results split once again by gender and age.

Column (1) shows the effects of import exposure on the probability that those who were unmarried in 2001 were married in 2011. We do not find evidence for the effects on the marriage rates of women who were initially unmarried, or on the marriage rates of young men. Among old men, singles in exposed industries are by contrast significantly less likely to get married.

The results in column (2) show that exposure to import competition leads to a reduc-

tion in the likelihood that married women under 45 get divorced.[19] In particular, a one-unit increase in exposure to import competition decreases the likelihood of divorce by 2 percentage points. In additional results (not shown in Table 5), we have found that this response is greater in the presence of children in the household, where the estimated coefficient increases to 2.64 (standard error 0.77). There is, by contrast, no effect of import exposure on the divorce rates of married men.

In column (3), we show results for the impact of import exposure on new partnering, that is, on the probability of finding and cohabiting with a different person in 2011

Table 5: Import Exposure and Family Status by Gender and Age

	(1) Δ married (if unmarried)	(2) Δ divorced (if married)	(3) Δ new partner (if couple)
	Panel A. Young Women (aged 18-44 in 2001)		
Import Exposure	-0.083	-2.041***	-1.201***
	(1.211)	(0.655)	(0.458)
Observations	28,716	28,126	30,698
	Panel B. Old Women (aged 45-59 in 2001)		
Import Exposure	1.906	-0.097	0.013
	(1.475)	(0.461)	(0.320)
Observations	6,878	21,498	19,647
	Panel C. Young Men (aged 18-44 in 2001)		
Import Exposure	0.428	0.216	0.651
	(1.122)	(0.693)	(0.553)
Observations	29,854	26,648	30,699
	Panel D. Old Men (aged 45-59 in 2001)		
Import Exposure	-3.218***	0.754	-0.856
	(1.237)	(0.768)	(0.618)
Observations	5,233	21,930	21,184

Notes: Table shows the effect of import exposure on individuals' family status. Column (1) shows the effects on marriage for a sample of initially unmarried people. Column (2) shows the effects on divorce for a sample of initially married individuals. Column (3) shows the effects on new partnering, that is, finding and cohabiting with a new person. Recall that we denote those aged 18-44 in 2001 as 'young' and those aged 45-59 as 'old'. We use age and other characteristics of the partner to assess whether partners of LS members observed in two different waves are likely to be the same individual or not. See note of Table 2 for a list of the controls and details on the IV. Standard errors clustered at the 3-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

[19] Note that in England and Wales overall in 2001, the median age of women at divorce is 37.7 years. The corresponding figure for males is 40.0 years (Office for National Statistics, 2015b).

(relative to 2001). We use characteristics of partners such as age and education to assess whether partners of LS members observed in 2001 and 2011 are likely to be the same individual or not (recall that, in our data, only LS members are followed over time, not their extended family or co-residents). Consistent with the lower divorce rates we found for young women, we find that exposure to import competition means that married young women are less likely to find and cohabit with a new partner. We do not find effects on re-partnering behaviour for men in couples.

It is instructive to compare these results on the partnering effects of import competition to those from other countries. Our results are notably different to those on the effects of the China trade shock in the US. Focusing on individuals aged 18-39, Autor et al. (2019) show that US areas more exposed to Chinese import competition saw significantly lower marriage rates, increased single-parenthood and lower fertility.[20] Our results on divorce and marriage are much more similar to papers that study the impact of import competition in other European countries. Studying the case of Denmark, Keller & Utar (2022) find that female workers in firms exposed to Chinese import competition were more likely to drop out of the labour force, get married and have children than other comparable workers, and that married women were less likely to get divorced. The effects were greater for women in their late 30s, who have fewer remaining fertile years. They argue their results are consistent with trade-induced income changes leading to a reduction in the opportunity costs of raising a family for women (a hypothesis we investigate for our setting in Section 5). In Germany, Giuntella et al. (2022) find a negative and marginally significant effect of exposure to import competition from Eastern Europe and China on women's divorce rates, and no evidence of effects on either men's or women's marriage rates.

4.2 Spillovers Within the Household: Partners' Responses

We have shown that men and women respond differently in their labour supply when their industry is affected by import competition. In this section, we study the extent to which there are differences in response to the partner exposure (added worker effects). We do that by looking at the responses of *partners* of those affected by import competition. We restrict attention to the sample of 'stable' couples, defined as households with LS members who have a partner in both waves (2001 and 2011), and whose partners' char-

[20] A notable difference in the research design of Autor et al. (2019) relative to ours is that they study outcomes at the level of local labour markets, whereas we study outcomes at the level of individual workers. Results from these two approaches may differ if there are significant spillovers within local labour markets, or strong effects on the marriage rates of new labour market entrants (who are excluded from our panel data regressions). To facilitate comparison with the results in Autor et al. (2019), we report impacts on average marriage and divorce rates of young people across travel-to-work areas in Appendix Table A.8. The results from this exercise are consistent with those from our panel data regressions: we find no impact of import exposure on marriage rates and a negative impact on women's divorce rates.

acteristics, the year of birth and gender, do not change. For ease of exposition, we focus on opposite-sex couples – including same-sex couples does not change our results.

The own and partner labour supply responses in response to import competition are shown for men in Table 6 and for women in Table 7. As discussed in Section 3, these regressions include controls for partner characteristics in addition to the ones used in the preceding section. The own-response effect sizes in these tables (columns (1)-(5)) differ from those in Table 2 and Table 3 mainly because those in stable couples respond to the shock differently to singles. Appendix Table A.9 shows the effects for stable couples alongside those for who were single in both waves: Men in couples who are exposed to import competition are just as likely to leave manufacturing as single men but are more likely to remain in work, less likely to be unemployed, and more likely to shift towards self-employment. Women in couples also behave differently to single women following the trade shock; the point estimates, although statistically insignificant, suggest that those in stable couples are more likely to leave the labour force and become inactive than single women, who are instead more likely to move into unemployment.

The final two columns of Table 6 and 7 investigate added worker effects, focusing on the extensive margin of responses (we discuss the intensive margin below). Table 6 shows that women (in stable couples) do not increase their labour market activity to compensate for rising import competition experienced by their partner (column (7)). Effects on the likelihood that female partners move into work are negative, small, and not significantly different from zero (column (6)). This is true for both young and old women, even though their male partners are more likely to be unemployed in 2011 if in an exposed industry in 2001. In the Appendix, we also investigate heterogeneity in responses across subsamples, including whether children are present in the household or not, and whether partners were initially active in the labour market, employed full-time or employed part-time. The results do not change when we restrict the sample to those with children or young children, remaining negative and statistically insignificant (Table A.12).

The results are very different when it comes to the responses of men in households where women are exposed to rising import competition (Table 7). The male partners of women in trade-exposed industries increase their labour supply: each one-unit increase in import exposure raises the probability their partner is in work by 1.2 ppt (column (6)). The effects are stronger for those older, for whom each one-unit increase in import exposure results in a 1.6 ppt increase in their partner's employment. The responses of men to import competition affecting their partners shown in Table 7, mirror those we found for older men directly affected by import competition shown in Table 3, showing an increase in labour market activity at older ages. Thus, increased labour force activity among males at older ages is a response to import exposure, whether it arises through shocks affecting men directly or through shocks affecting their partners.

Table 6: Import Exposure and Family Labour Supply Responses (MEN)

	OWN RESPONSE					PARTNER RESPONSE	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Δ manuf	Δ unempl	Δ empl	Δ self-empl	Δ active	Δ partner in work	Δ partner active
				Panel A. Men			
Import Exposure	-7.715***	0.580**	-0.697	1.298***	1.182***	-0.764	-0.581
	(2.153)	(0.236)	(0.657)	(0.395)	(0.402)	(0.616)	(0.433)
Mean Dep. Var.	-11.20	2.18	-28.69	10.20	-16.31	-7.01	-6.91
First-Stage *F*-stat	[30.98]	[30.98]	[30.98]	[30.98]	[30.98]	[30.98]	[30.98]
Observations	51,302	51,302	51,302	51,302	51,302	51,302	51,302
				Panel B. Young Men			
Import Exposure	-9.406***	0.628**	-2.336***	1.622***	-0.085	-0.907	-0.457
	(2.503)	(0.312)	(0.677)	(0.502)	(0.225)	(0.553)	(0.565)
Mean Dep. Var.	-8.26	2.12	-17.25	12.08	-3.05	4.55	4.85
First-Stage *F*-stat	[27.53]	[27.53]	[27.53]	[27.53]	[27.53]	[27.53]	[27.53]
Observations	30,277	30,277	30,277	30,277	30,277	30,277	30,277
				Panel C. Old Men			
Import Exposure	-5.917***	0.444	1.603	0.722	2.770***	-0.807	-1.018
	(2.215)	(0.304)	(1.322)	(0.746)	(0.945)	(1.336)	(1.239)
Mean Dep. Var.	-15.43	2.26	-45.17	7.50	-35.41	-23.67	-23.83
First-Stage *F*-stat	[36.55]	[36.55]	[36.55]	[36.55]	[36.55]	[36.55]	[36.55]
Observations	21,025	21,025	21,025	21,025	21,025	21,025	21,025

Notes: Table shows the effects of import exposure on men's own labour supply and the labour supply of their female partners. Samples are for those in stable couples (those who remain in the same relationship over the period 2001-2011). In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, one-digit occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table 7: Import Exposure and Family Labour Supply Responses (WOMEN)

	OWN RESPONSE					PARTNER RESPONSE	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Δ manuf	Δ unempl	Δ empl	Δ self-empl	Δ active	Δ partner in work	Δ partner active
				Panel A. Women			
Import Exposure	-6.424***	-0.251	-0.212	-0.646*	-1.108	1.249***	1.064***
	(2.436)	(0.237)	(0.906)	(0.359)	(0.740)	(0.403)	(0.399)
Mean Dep. Var.	-5.21	1.46	-30.34	4.86	-24.02	-14.89	-14.42
First-Stage *F*-stat	[35.49]	[35.49]	[35.49]	[35.49]	[35.49]	[35.49]	[35.49]
Observations	49,767	49,767	49,767	49,767	49,767	49,767	49,767
				Panel B. Young Women			
Import Exposure	-6.820***	0.091	-0.353	-0.711	-0.973	1.092**	0.703**
	(2.364)	(0.335)	(0.810)	(0.455)	(0.606)	(0.506)	(0.329)
Mean Dep. Var.	-4.83	1.74	-17.53	6.02	-9.78	-3.26	-2.57
First-Stage *F*-stat	[30.91]	[30.91]	[30.91]	[30.91]	[30.91]	[30.91]	[30.91]
Observations	30,289	30,289	30,289	30,289	30,289	30,289	30,289
				Panel C. Old Women			
Import Exposure	-5.720**	-0.779***	0.103	-0.598	-1.273	1.627*	1.802**
	(2.914)	(0.227)	(1.824)	(0.513)	(1.711)	(0.848)	(0.811)
Mean Dep. Var.	-5.79	1.03	-50.25	3.05	-46.17	-32.98	-32.85
First-Stage *F*-stat	[40.86]	[40.86]	[40.86]	[40.86]	[40.86]	[40.86]	[40.86]
Observations	19,478	19,478	19,478	19,478	19,478	19,478	19,478

Notes: Table shows the effects of import exposure on women's own labour supply and the labour supply of their male partners. Samples are for those in stable couples (those who remain in the same relationship over the period 2001-2011). In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, one-digit occupation and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Appendix Table A.10 and A.11 split the changes in the probabilities partners are in work into self-employment and employment, by gender. The increase in labour supply by the male partners is almost entirely driven by an increase in self-employment. Partners of older women exposed to trade shocks are also less likely to transition into part-time employment: each one-unit increase in women's import exposure increases the probability their partners remain in full-time work by 2.4 ppt. Older men thus respond to shocks affecting their partners by rising labour supply on both intensive and extensive margins.

A natural question is whether the increase in male partners' activity is an increase in activity from men who were initially inactive, or a reduction in flows into inactivity from those who were initially active. We first note that about 93% of male partners were active in 2001 (see Table 1). We find that the effects of import exposure on male partner's labour supply are similar when we condition on households where male partners were initially active in the labour market or in (full-time) work in 2001 (see Table A.13, Panels B.1, B.2, and B.4, respectively). This implies that much of the increase in labour force participation of men in households in which women are exposed to import competition is driven by the fact these men are less likely to move into inactivity by 2011. Male partners who were initially working full-time are also less likely to transition to part-time work when their partners are exposed to Chinese import competition.

A further question is whether our results are driven by the fact that partners are exposed to correlated shocks if, for example, partners work in the same industry. As we discussed in Section 3, the cross-partner correlation in import exposure is low (Table A.5), suggesting this is unlikely to be driving our results. To further check this, we remove cases where partners were employed in goods industries that saw positive import growth from China from our sample. The results are shown in Table C.3 and Table C.4 for women and Table C.5 and Table C.6 for men. The results are similar to those in our main sample, implying that correlation in import exposure within couples is not driving our findings.

Taking the results in this section together, we find there are substantial asymmetries in men's and women's responses to increased Chinese import competition, both when they are directly exposed to import competition and when their partner is exposed to import competition. Men are more likely to shift into self-employment and to lengthen their working lives when either they or their partners are employed in an exposed industry, while the same is not true for women. We next consider possible explanations for these differences.

5 What Accounts for Different Responses by Gender?

We consider two possible reasons for differences in responses to import shocks by gender we have documented. The first is that it is the differing occupational and employment characteristics of male and female manufacturing workers that account for the differences in the results. The second possibility is that, conditional on having similar pre-existing characteristics, men and women respond differently to import shocks.

5.1 Gender Differences in Occupation Groups and Employment Forms

To investigate the first of these possibilities, we construct probability weights such that the weighted sample of male workers matches the distribution of baseline characteristics of female workers, and a weighted sample of female workers matches the distribution of baseline characteristics of male workers. We then rerun our regressions of employment outcomes on Chinese import exposure for men and women using weighted least squares.[21]

We use the entropy balancing approach (Hainmueller, 2012), where we re-weight the data so that the first and second moments of a set of variables are identical across genders. The variables we use are hours worked, part-time/full-time status, whether working in manufacturing, one-digit industry, and broad occupation sector (low-skill, blue-collar, or white-collar occupations, as described above). In practical terms, this means that we assign greater weights to male workers working in female-dominated occupations, or part-time work, when estimating results for our male-subsample, and we assign greater weights to female workers employed in male-dominated occupations, and working full-time, when analysing our female sample.[22]

Table 8 shows how our regression results on the effects of import exposure on employment outcomes change when we apply weights to our sample of men (panel A) and to our sample of women (panel B). The resulting weighted estimates (in blue) are less precisely estimated than the unweighted regression coefficients, but the coefficients on import exposure are similar. In both the weighted and unweighted regressions, male workers are more likely to move into unemployment and self-employment, and less likely to enter retirement if exposed to Chinese import competition, while the same is not true for female workers. The effects of import exposure on women's employment outcomes remain small. We conclude that the differences we have documented in the labour market effects

[21] Illing et al. (2024) also use a re-weighting strategy to understand gender differences in employment patterns following job loss.

[22] To avoid outliers, we top-code observations with excessively large weights (those for whom there are few good matches among workers of the opposite sex). Specifically, we top-code weights at 50 which affects 15 individuals (out of 85,170) in our female sample and 2 individuals (out of 83,267) in the male sample.

of import exposure for men and women are not due to baseline differences in their broad occupations or hours worked. We now proceed to investigate two prominent explanations for such response heterogeneity: the role of fertility and the role of outside options.

Table 8: Unweighted vs Weighted Results

	(1) Δ manuf	(2) Δ unempl	(3) Δ empl	(4) Δ self-empl	(5) Δ active	(6) Δ retired
	Panel A. Men					
Import Exposure (unweighted)	-7.410***	0.802***	-1.116*	0.897**	0.582*	-1.241***
	(2.187)	(0.274)	(0.675)	(0.371)	(0.348)	(0.348)
Import Exposure (weighted)	-6.022***	0.959***	-1.675*	1.039	0.322	-1.152***
	(2.020)	(0.339)	(0.998)	(0.658)	(0.612)	(0.373)
Observations	83,267	83,267	83,267	83,267	83,267	83,267
	Panel B. Women					
Import Exposure (unweighted)	-5.801**	0.058	-0.117	-0.620	-0.680	0.172
	(2.314)	(0.309)	(0.721)	(0.388)	(0.542)	(0.312)
Import Exposure (weighted)	-7.155***	-0.027	0.336	-0.466	-0.157	-0.001
	(2.706)	(0.518)	(1.051)	(0.512)	(0.751)	(0.481)
Observations	85,170	85,170	85,170	85,170	85,170	85,170

Notes: Table shows how the results on the effects of import exposure on employment outcomes change when we apply weights to our sample of men (Panel A) and to our sample of women (panel B), highlighted in blue. Entropy balancing is used to construct weights. The weights are produced such that the first and second moments of covariates (hours worked, part-time/full-time status, whether working in manufacturing, one-digit industry, and broad occupation sector) are identical across genders after re-weighting. See note of Table 2 for a list of the controls and details on the IV. Standard errors clustered at the three-digit industry level reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

5.2 Fertility

One potential explanation for the gender differences could be the differing roles of men and women in looking after children. Women may be more likely to drop out of the labour force to raise children in response to a labour market shock, through differences in comparative advantage in market vs home production. This mechanism was investigated in the context of an import shock in Keller & Utar (2022), who note an increase in fertility along with a reduction in divorce rates for women working for Danish firms that were more exposed to Chinese import competition in the 2000s. They refer to this particular cause of the difference in employment and partnering responses by men and women as a 'retreat to family'. On the other hand, Giuntella et al. (2022) find a reduction in fertility

among German workers exposed to import competition from China and Eastern Europe. Del Bono et al. (2012) also find that job loss leads to a reduction in fertility, particularly among skilled workers, which they attribute to a need among affected women to regain firm-specific human capital once they are re-employed.

We have shown in Section 4.1 that, consistent with Keller & Utar (2022), import exposure leads to a reduction in the probability that married young women divorce from their partners or cohabit with a new partner. We now examine whether we find similar evidence of a response in fertility among young women. For this purpose, we exploit birth register data linked to female LS members who became mothers between 2001 and 2011.

Table 9 presents the results. Columns (1)-(2) in panel A consider our main outcome for fertility, namely whether a child was born between 2001 and 2011. Column (1) includes the full set of controls discussed in Section 3. Column (2) further controls for partners' characteristics. The estimates from both models are small and statistically insignificant. 26% of women in our sample have a child over this period, and a one-unit increase in import exposure only increases this probability by just 0.3 percentage points. In columns (3)-(5), we decompose the sample by initial broad occupation (whether working in a low-skill, blue-collar, or white-collar occupation), however, we do not find statistically significant results for any of these subgroups.

Overall, the limited impacts on fertility are not suggestive of the 'retreat to family' phenomenon. We do not find that exposure to import competition leads to changes in fertility that would explain the differences in men's and women's labour supply responses to the China trade shock. In addition, in Section 4.2 we did not find differences in the response of male or female partners to import exposure of the household according to whether young children were present. Thus, children do not appear to account for the gender differences in labour market outcomes documented thus far.

Table 9: Impact of Import Exposure on Fertility of Young Women

Panel A. Fertility outcomes	(1) child after 2001	(2) child after 2001	(3)	(4) By Initial Occupation	(5)
			Low-skill	blue-collar	white-collar
Import Exposure	0.290	0.332	-0.044	0.660	-0.289
	(0.737)	(0.609)	(1.101)	(0.547)	(1.201)
Mean Dep. Var.	26.08	24.71	24.56	20.89	29.32
Observations	64,281	39,899	37,883	3,265	23,133
Partner controls	No	Yes	No	No	No

Notes: Table shows the effects of import exposure on women's fertility outcomes (i.e. whether a child was born between 2001 and 2011) for women aged 18-44 in 2001. See note of Table 2 for a list of the controls and details on the IV. Column (2) additionally controls for partner characteristics, namely partners' age, one-digit occupation and one-digit industry. Standard errors clustered at the three-digit industry level are reported in parentheses. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Source is ONS Longitudinal Study.

5.3 Opportunities in the Self-employed Sector

A second possible explanation for gender differences is the role of outside options. Men, whether directly exposed to import competition, or indirectly, exposed through their partners, are more likely to shift into self-employment in response to the shock while women are not. Self-employment also accounts for increases in work at older ages. In this subsection, we examine whether the occupational structure of self-employment may provide men with greater opportunities in this sector, affording them an employment buffer not available to the same extent to women.

We start by considering the gender balance of employment within the self-employed sector. To do this, we classify occupations into three mutually exclusive categories based on their gender composition in 2001: male-dominated (i.e. more than 75% of workers in that occupation were men), female-dominated (i.e. more than 75% of workers were women), and gender-neutral occupations. The left panel of Figure 2 shows that self-employment in 2011 was twice as important in male-dominated occupations compared to in female-dominated occupations. This is suggestive of self-employment opportunities being more numerous for those working in male-dominated occupations.

Another question is whether self-employed jobs tend to be in male-dominated occupations (which depends on the overall importance of 'male-dominated jobs'). The right panel of Figure 2 shows that self-employed workers in 2011 were much more likely to be employed in male-dominated occupations, and gender-neutral occupations, than were employees. Out of total employment in 2011, male-dominated occupations represented 29.0%, female-dominated 33.8%, with the remaining 37.2% being gender-neutral. If we take self-employment in 2011, however, male-dominated occupations represented 42.5% out of the total, gender-neutral occupations 40.9%, with female-dominated occupations accounting for just 16.6%.[23]

These figures highlight the quantitative importance of male-dominated occupations in the self-employed sector, which may explain the greater flows of male workers responding to import competition into self-employment than female workers.

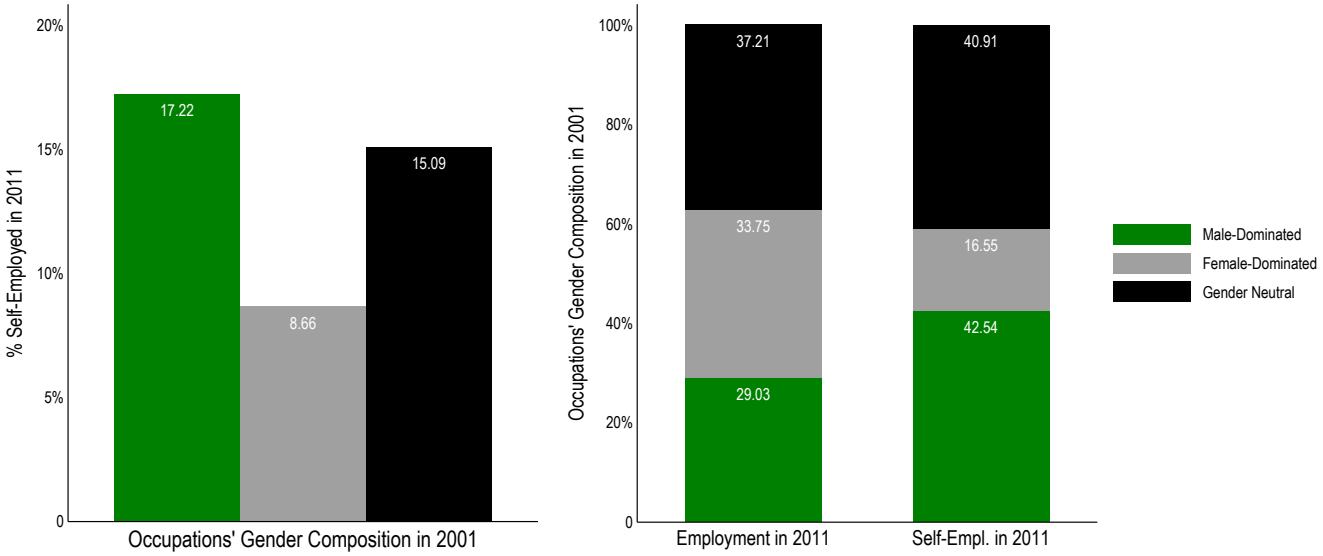
To investigate the role of these male-dominated occupations for the response to import competition, Panels A and B of Table 10 decomposes the impact on self-employment by occupations' gender composition. For ease of comparison, column (1) reports the overall estimate obtained in the previous section (column (4) in Table 2). The results in columns (2)-(4) imply that around 70% (0.622/0.897) of the self-employment effect for men is accounted for by flows into male-dominated occupations (such as plumbers, taxi drivers), rather than in gender-neutral or female-dominated occupations (such as care workers

[23]These numbers refer to all workers. Male-dominated occupations represented 57.23% out of total *male* self-employment in 2011, with female-dominated occupations accounting for just 5.89%.

Figure 2: Self-Employment and Gender

(a) % Self-employed by Occupations' Gender Composition

(b) Occupations' Gender Composition in Employment and Self-Employment



Notes: The left panel of the Figure shows the self-employed share by occupations' gender composition. The right panel shows occupations' gender composition in employment and self-employment. Occupations are classified in three mutually exclusive categories based on their gender composition in 2001: male-dominated (i.e. more than 75% of workers in that occupation were men), female-dominated (i.e. more than 75% of workers were women), and gender-neutral occupations (otherwise). Total sample is 242,636. Sample of self-employed is 29,814. Source is ONS Longitudinal Study.

and hairdressers). This is much greater than the overall share of self-employed workers employed in male-dominated workers (42.5%), implying that these occupations are disproportionately important for displaced workers. These results potentially help to explain a significant share of difference in men's and women's labour supply decisions in response to growing import competition.

Similarly, Panels C-D of Table 10 decomposes the impact on partner's self-employment by occupations' gender composition. Column (1) repeats the estimate presented in column (4) of Table A.10 and A.11. The results in columns (2)-(4) show that male-dominated occupations account for the entire increase in self-employment among men responding to shocks affecting their female partners.

In sum, differences in employment responses to the shock by gender reflect differing opportunities in the self-employed sector: male workers exposed to import competition disproportionately enter self-employed jobs in historically male-dominated occupations, as do men increasing labour supply in response to shocks affecting their partners.

Table 10: Impact on Self-Employment by Occupations' Gender Composition

	(1) Δ self-empl	(2) Male-dominated	(3) Female-dominated	(4) Gender neutral occ.
Own Responses	**Panel A. Men**			
Import Exposure	0.897***	0.622**	0.038	0.237
	(0.371)	(0.275)	(0.036)	(0.201)
Observations	83,627	83,627	83,627	83,627
	Panel B. Women			
Import Exposure	-0.620	0.016	-0.247	-0.389*
	(0.388)	(0.113)	(0.205)	(0.202)
Observations	85,170	85,170	85,170	85,170
Partner Responses	**Panel C. Men's Partners (Women)**			
Import Exposure	-0.149	-0.087	0.102	-0.164
	(0.288)	(0.092)	(0.172)	(0.158)
Observations	51,302	51,302	51,302	51,302
	Panel D. Women's Partners (Men)			
Import Exposure	1.134***	1.312***	0.144	-0.321
	(0.436)	(0.454)	(0.200)	(0.252)
Observations	49,767	49,767	49,767	49,767

Notes: Table shows the effects of import exposure on self-employment in Panels A-B and the effects of import exposure on partner's self-employment in Panels C-D, separately by occupations' gender composition. Occupations are classified into three mutually exclusive categories based on their gender composition in 2001: male-dominated (i.e. more than 75% of workers in that occupation were men), female-dominated (i.e. more than 75% of workers were women), and gender-neutral occupations (otherwise). For panels A-B, see note of Table 2 for a list of the controls and details on the IV. For panels C-D, see note of Table 6. Standard errors clustered at the 3-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

6 Conclusion

In this paper, we use longitudinal census data from England and Wales to study both own and partner responses to trade shocks affecting households in the 2000s. We find that men in households exposed to import competition respond by increasing labour force participation at older ages, and by moving into self-employment. This is true both in response to their own import exposure, and when their female partner is exposed to the shock. We do not find evidence for these responses among women, who do not increase labour supply if their male partners were initially employed in exposed industries.

Self-employment plays an important role in accounting for the difference in responses across genders. Those working in the self-employed sector are more likely to be in male-dominated occupations, and it is precisely these occupations that appear to provide men

exposed to import competition with an employment buffer. Similarly, male-dominated occupations account for the entire increase in self-employment among men responding to shocks affecting their partners.

Our results show that partners provide insurance against negative labour market shocks stemming from import competition. However, the nature of this insurance depends on the gender of those affected. One implication of our findings is that the impact of future shocks is likely to depend on the gender composition of workers in affected industries. A second implication is that single-headed households affected by a shock may be in greater need of public insurance.

Our findings point towards several potential avenues for future research. Gender norms and incentives for secondary earnings may also play a role in accounting for asymmetries in men and women's labour supply decisions (Bertrand et al. (2015); Bredtmann et al. (2018)), and these could be investigated in future work. Going beyond labour supply, a second question is how trade exposure affects intra-household allocations and bargaining, and the consequences these may have for individual welfare. Another avenue is to study how trade shocks, or other structural changes to the labour market, affect longer-run outcomes among subsequent generations. Intergenerationally linked data will make such investigations possible for a growing range of outcomes going forward.

References

Amiti, M., M. Dai, R. C. Feenstra, & J. Romalis (2020). How Did China's WTO Entry Affect US Prices? *Journal of International Economics*, *126*, 103339. doi: 10.1016/j.jinteco.2020.103339.

Amiti, M. & C. Freund (2010). *The Anatomy of China's Export Growth*, pp. 35–56. University of Chicago Press. url: http://www.nber.org/chapters/c10451.

Attanasio, O., H. Low, & V. Sánchez-Marcos (2005). Female Labor Supply as Insurance Against Idiosyncratic Risk. *Journal of the European Economic Association*, *3*(2-3), 775–764. url: https://www.jstor.org/stable/40005017.

Autor, D., D. Dorn, & G. Hanson (2013). The China Syndrome: The Impact of Import Competition on US Labor Markets. *American Economic Review*, *103*(6), 2121–2168. doi: 10.1257/aer.103.6.2121.

Autor, D., D. Dorn, & G. Hanson (2019). When Work Disappears: Manufacturing Decline and The Falling Marriage Market Value of Young Men. *American Economic Review: Insights*, *1*(2), 161–78. doi: 10.1257/aeri.20180010.

Autor, D. H., D. Dorn, & G. H. Hanson (2016). The China Shock: Learning from Labor-Market Adjustment to Large Changes in Trade. *Annual Review of Economics*, *8*, 205–240. doi: 10.1146/annurev-economics-080315-015041.

Autor, D. H., D. Dorn, G. H. Hanson, & J. Song (2014). Trade Adjustment: Worker-Level Evidence. *The Quarterly Journal of Economics*, *129*(4), 1799–1860. doi: 10.1093/qje/qju026.

Autor, D. H., F. Levy, & R. J. Murnane (2003). The Skill Content of Recent Technological Change: An Empirical Exploration. *The Quarterly Journal of Economics*, *118*(4), 1279–1333. doi: 10.1162/003355303322552801.

Balsvik, R., S. Jensen, & K. G. Salvanes (2015). Made in China, Sold in Norway: Local Labor Market Effects of an Import Shock. *Journal of Public Economics*, *127*, 137–144. doi: 10.1016/j.jpubeco.2014.08.006.

Banks, J. (2016). Employment and Labour Market Transitions at Older Ages in England, 2002–03 to 2014–15. In J. N. James Banks, G. David Batty & A. Steptoe (Eds.), *The Dynamics of Ageing: Evidence from the English Longitudinal Study of Ageing 2002-15*, Chapter 2. London: The Institute for Fiscal Studies.

Baranga, T. (2018). Reconciled Trade Flow Estimates Using an FGLS Estimator. Technical report, Economic Statistics Centre of Excellence (ESCoE). Discussion Paper ESCoE DP-2018-01. url: https://www.escoe.ac.uk/publications/reconciled-trade-flow-estimates-using-an-fgls-estimator/.

Bertrand, M., E. Kamenica, & J. Pan (2015). Gender Identity and Relative Income within Households. *The Quarterly Journal of Economics*, *130*(2), 571–614. doi: 10.1093/qje/qjv001.

Bloom, N., M. Draca, & 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. doi: 10.1093/restud/rdv039.

Blundell, R., L. Pistaferri, & I. Saporta-Eksten (2016). Consumption Inequality and Family Labor Supply. *American Economic Review*, *106*(2), 387–435. doi: 10.1257/aer.20121549.

Boeri, T., G. Giupponi, A. B. Krueger, & S. Machin (2020). Solo Self-Employment and Alternative Work Arrangements: A Cross-Country Perspective on the Changing Composition of Jobs. *Journal of Economic Perspectives*, *34*(1), 170–195. doi: 10.1257/jep.34.1.170.

Bredtmann, J., S. Otten, & C. Rulff (2018). Husband's Unemployment and Wife's Labor Supply: the Added Worker Effect across Europe. *ILR Review*, *71*(5), 1201–1231. doi: 10.1177/0019793917739617.

Citino, L. & A. Linarello (2021). The Impact of Chinese Import Competition on Italian Manufacturing. *Review of International Economics*, *30*(3), 702–731. doi: 10.1111/roie.12587.

Colantone, I., R. Crino, & L. Ogliari (2019). Globalization and Mental Distress. *Journal of International Economics*, *119*, 181–207. doi: 10.1016/j.jinteco.2019.04.008.

Crawford, R., J. Cribb, H. Karjalainen, & L. O'Brien (2021). Changing Patterns of Work at Older Ages. *London: Institute for Fiscal Studies* (R192). doi: 10.1920/re.ifs.2021.0192.

Dauth, W., S. Findeisen, & 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. doi: 10.1111/jeea.12092.

Dauth, W., S. Findeisen, & J. Suedekum (2021). Adjusting to Globalization in Germany. *Journal of Labor Economics*, *39*(1), 263–302. doi: 10.1086/707356.

De Lyon, J. & J. P. Pessoa (2021). Worker and Firm Responses to Trade Shocks: The UK-China Case. *European Economic Review*, *133*, 103678. doi: 10.1016/j.euroecorev.2021.103678.

Del Bono, E., A. Weber, & R. Winter-Ebmer (2012). Clash of Career and Family: Fertility Decisions after Job Displacement. *Journal of the European Economic Association*, *10*(4), 659–683. doi: 10.1111/j.1542-4774.2012.01074.x.

Dix-Carneiro, R., P. K. Goldberg, C. Meghir, & G. Ulyssea (2024). Trade and Domestic Distortions: The Case of Informality. url: https://www.dropbox.com/scl/fi/zxpcg5h7iz5fcb15k3rig/DGMU_Revision1_Ecma_Main.pdf?rlkey=iad6qthzyxlmzeijmso82xopa&e=1&dl=0.

Dix-Carneiro, R. & B. K. Kovak (2017). Trade Liberalization and Regional Dynamics. *American Economic Review*, *107*(10), 2908–2946. doi: 10.1257/aer.20161214.

Dix-Carneiro, R. & B. K. Kovak (2019). Margins of Labor Market Adjustment to Trade. *Journal of International Economics*, *117*(1), 125–142. doi: 10.1016/j.jinteco.2019.01.005.

Dorn, D. & P. Levell (2021). Trade and Inequality in Europe and the US. *IFS Deaton Review of Inequalities*. url: https://www.ddorn.net/papers/Dorn-Levell-TradeInequality.pdf.

Foliano, F. & R. Riley (2017, November). International Trade and UK De-Industrialisation. *National Institute Economic Review*, *242*, R3–R13. doi: 10.1177/002795011724200110.

Gaddis, I. & J. Pieters (2017). The Gendered Labor Market Impacts of Trade Liberalization: Evidence from Brazil. *Journal of Human Resources*, *52*(2), 457–490. doi: 10.3368/jhr.52.2.1014-6690R1.

Giuntella, O., L. Rotunno, & L. Stella (2022). Globalization, Fertility and Marital Behavior in a Lowest-Low Fertility Setting. *Demography*, *59*(6), 2135–2159. doi: 10.1215/00703370-10275366.

Giupponi, G. & X. Xu (2020). What Does the Rise of Self-Employment Tell Us About the UK Labour Market? *London: Institute of Fiscal Studies*. url: https://ifs.org.uk/publications/what-does-rise-self-employment-tell-us-about-uk-labour-market.

Goux, D., E. Maurin, & B. Petrongolo (2014). Worktime Regulations and Spousal Labor Supply. *American Economic Review*, *104*(1), 252–276. doi: 10.1257/aer.104.1.252.

Hainmueller, J. (2012). Entropy Balancing for Causal Effects: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies. *Political Analysis*, *20*(1), 25–46. doi: 10.1093/pan/mpr025.

Halla, M., J. Schmieder, & A. Weber (2020). Job Displacement, Family Dynamics, and Spousal Labor Supply. *American Economic Journal: Applied Economics*, *12*(4), 253–287. doi: 10.1257/app.20180671.

Handley, K. & N. Limao (2017). Policy Uncertainty, Trade, and Welfare: Theory and Evidence for China and the United States. *American Economic Review*, *107*(9), 2731–2783. doi: 10.1257/aer.20141419.

Illing, H., J. Schmieder, & S. Trenkle (2024). The Gender Gap in Earnings Losses after Job Displacement. *Journal of the European Economic Association*. url: https://www.econtribute.de/RePEc/ajk/ajkdps/ECONtribute_247_2023.pdf.

Keller, W. & H. Utar (2022). Globalization, Gender, and the Family. *The Review of Economic Studies*, *89*(6), 3381–3409. doi: 10.1093/restud/rdac012.

Lundberg, S. (1985). The Added Worker Effect. *Journal of Labor Economics*, *3*(1), 11–37. url: https://www.jstor.org/stable/2535048.

Lynch, K., S. Leib, J. Warren, N. Rogers, & J. Buxton (2015). Longitudinal Study 2001–2011 Completeness of Census Linkage. Series LS No. 11.

Merkurieva, I. (2019). Late Career Job Loss and the Decision to Retire. *International Economic Review*, *60*(1), 259–282. doi: 10.1111/iere.12352.

Montresor, G. (2019). Job Polarization and Labour Supply Changes in the UK. *Labour Economics*, *58*, 187–203. doi: 10.1016/j.labeco.2018.05.009.

Office for National Statistics (2013). 2011 Census: Labour Market Participation in England and Wales - Local Areas Analysis (released 29 November).

Office for National Statistics (2015a). 2011 Census General Report. Technical Report.

Office for National Statistics (2015b). Divorces in England and Wales by Age, Marital Status before Marriage and Reason: Historical Data (released 23 November 2015).

Office for National Statistics (2019). ONS SRS Metadata Catalogue: ONS Longitudinal Study – England and Wales (released 11 June 2019). doi: 10.57906/z9xn-ng05.

Office for National Statistics (2021). ONS SRS Metadata Catalogue: Business Structure Database – UK (released 10 November 2021). doi: 10.57906/7kh0-0910.

Pierce, J. R. & P. K. Schott (2016). The Surprisingly Swift Decline of US Manufacturing Employment. *American Economic Review*, *106*(7), 1632–62. doi: 10.1257/aer.20131578.

Salvanes, K. G., B. Willage, & A. Willén (2024). The Effect of Labor Market Shocks across the Life Cycle. *Journal of Labor Economics*, *42*(1). doi: 10.1086/722086.

Scheiber, S. (1992). Comment on 'Three Models of Retirement.'. *Topics in the Economics of Aging*, 57–60.

Stephens, M. (2002). Worker Displacement and the Added Worker Effect. *Journal of Labor Economics*, *20*(3), 504–537. doi: 10.1086/339615.

Stock, J. H. & D. A. Wise (1990). Pensions, the Option Value of Work, and Retirement. *Econometrica*, *58*(5), 1151–1180. doi: 10.2307/2938304.

Topalova, P. (2010). Factor Immobility and Regional Impacts of Trade Liberalization: Evidence on Poverty from India. *American Economic Journal: Applied Economics*, *2*(4), 1–41. doi: 10.1257/app.2.4.1.

Utar, H. (2014). When the Floodgates Open: "Northern" Firms' Responses to Removal of Trade Quotas on Chinese Goods. *American Economic Journal: Applied Economics*, *6*(4), 226–250. doi: 10.1257/app.6.4.226.

Utar, H. (2018). Workers Beneath the Floodgates: Low-Wage Import Competition and Workers' Adjustment. *The Review of Economics and Statistics*, *100*(4), 631–647. doi: 10.1162/rest˙a˙00727.

APPENDIX FOR:

Household Responses to Trade Shocks

Aitor Irastorza-Fadrique, Peter Levell & Matthias Parey

A Supplemental Results and Tables

Table A.1: Top 20 Industries Most Exposed to Import Competition.

Industry (UK SIC92 classification)	**Employment Share, %** (all manufacturing industries)
Games and Toys	0.30
Luggage, Handbags	0.11
Footwear	0.38
Leather	-
Transport Equipment not elsewhere classified	-
Sports Goods	0.15
Wearing Apparel; Dressing and Dyeing of Fur	2.45
Domestic Appliances not elsewhere classified	0.82
Office Machinery and Computers	1.57
Manufacturing not otherwise specified	1.90
Radio, Television and Communication Equipment	2.81
Furniture	3.74
Miscellaneous Manufacturing not elsewhere classified	1.41
Textiles	3.46
Cutting, Shaping and Finishing of Stone	0.11
Musical Instruments	0.10
Rubber Products	0.94
Refractory Ceramic Products	0.78
Electrical Machinery not elsewhere classified	4.18
Glass and Glass Products	0.91

Notes: This table shows the 20 industries three-digit SIC92 industries most affected by import competition between 2001-2011. See Section 3 for details about how import exposure is constructed. Source is ONS Longitudinal Study.

Table A.2: First-Stage Regressions (All Employees)

	(1) No Controls	(2) Individual Controls	(3) Partner Controls
Import Exposure IV	1.041***	1.034***	1.035***
	(0.161)	(0.182)	(0.179)
R^2	0.744	0.769	0.772
Sample Size	168,797	168,797	115,523
Controls	No	Yes	Yes
Ind, Occ, TTWA FE	No	Yes	Yes
Partner FE	No	No	Yes

Notes: This table shows the first-stage results, where we regress exposure to import competition (see eq. (1)) on the instrument (see eq. (3)) for all employees. See notes of Table 2 and Table 6 for a list of the controls. Section 3 provides more details. Standard errors clustered at the industry level. ***$p < 0.01$. Source is ONS Longitudinal Study.

Table A.3: First-Stage Regressions (By Age and Gender)

	Panel A. Men			**Panel B. Women**		
Import Exposure IV	0.982***	0.973***	0.974***	1.141***	1.127***	1.132***
	(0.153)	(0.180)	(0.173)	(0.176)	(0.190)	(0.193)
R^2	0.717	0.740	0.743	0.787	0.817	0.818
Sample Size	83,627	83,627	57,431	85,170	85,170	58,092
	Panel C. Young Men			**Panel D. Young Women**		
Import Exposure IV	0.989***	0.983***	0.985***	1.117***	1.111***	1.121***
	(0.159)	(0.192)	(0.184)	(0.181)	(0.198)	(0.204)
R^2	0.722	0.742	0.747	0.779	0.809	0.808
Sample Size	56,472	56,472	34,605	56,800	56,800	35,951
	Panel E. Old Men			**Panel F. Old Women**		
Import Exposure IV	0.966***	0.952***	0.954***	1.188***	1.157***	1.148***
	(0.143)	(0.160)	(0.157)	(0.168)	(0.181)	(0.181)
R^2	0.708	0.739	0.742	0.802	0.834	0.834
Sample Size	27,155	27,155	22,826	28,370	28,370	22,141
Controls	No	Yes	Yes	No	Yes	Yes
Ind, Occ, TTWA FE	No	Yes	Yes	No	Yes	Yes
Partner FE	No	No	Yes	No	No	Yes

Notes: This table shows the first-stage results, where we regress exposure to import competition (see eq. (1)) on the instrument (see eq. (3)). See Section 3 for more details. Standard errors clustered at the three-digit industry level are reported in parentheses. ***$p < 0.01$. Source is ONS Longitudinal Study.

Table A.4: Descriptive Overview. Import Exposure by Gender

	(1) All Workers	(2) Manufacturing Workers	(3) High Exposed Workers
	Panel A. All		
Import Exposure	0.65	3.96	12.10
P90, P10 interval	[0.91, 0.00]	[12.77, 0.09]	[20.25, 6.13]
P75, P25 interval	[0.00, 0.00]	[6.12, 0.25]	[14.34, 6.31]
Observations	168,797	27,859	7,099
	Panel B. Men		
Import Exposure	0.85	3.58	11.58
P90, P10 interval	[1.97, 0.00]	[10.74, 0.07]	[17.23,6.13]
P75, P25 interval	[0.00, 0.00]	[5.57, 0.25]	[14.34, 6.31]
Observations	83,627	19,790	4,578
	Panel C. Women		
Import Exposure	0.49	4.93	13.04
P90, P10 interval	[0.13, 0.00]	[14.34, 0.21]	[20.26, 6.14]
P75, P25 interval	[0.00, 0.00]	[6.31, 0.38]	[17.22, 9.00]
Observations	85,170	7,889	2,521

Notes: See Section 3 for details about how import exposure is constructed. Sources are ONS Longitudinal Study and UN Comtrade Database.

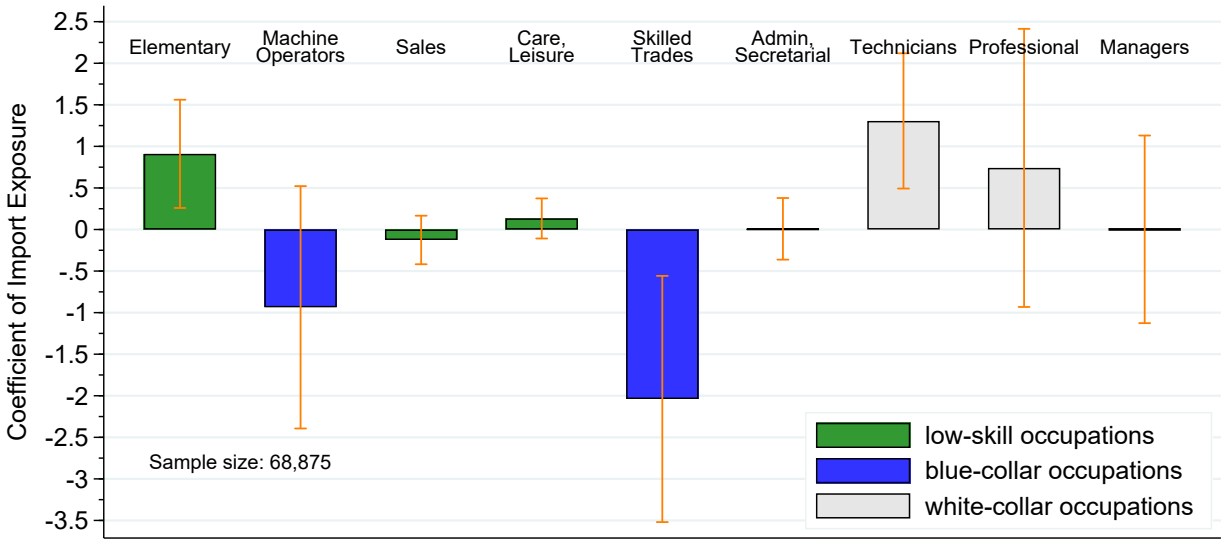
Table A.5: Import Exposure within Households

	Correlation with Partner's Exposure	
	All Industries	Manufacturing
All	0.220	0.216
	151,228	19,836
Men	0.165	0.181
	67,190	13,849
Women	0.274	0.243
	84,038	5,987
Young Men	0.142	0.175
	38,290	8,145
Young Women	0.265	0.263
	53,348	3,892
Old Men	0.197	0.189
	28,900	5,704
Old Women	0.288	0.209
	30,690	2,095

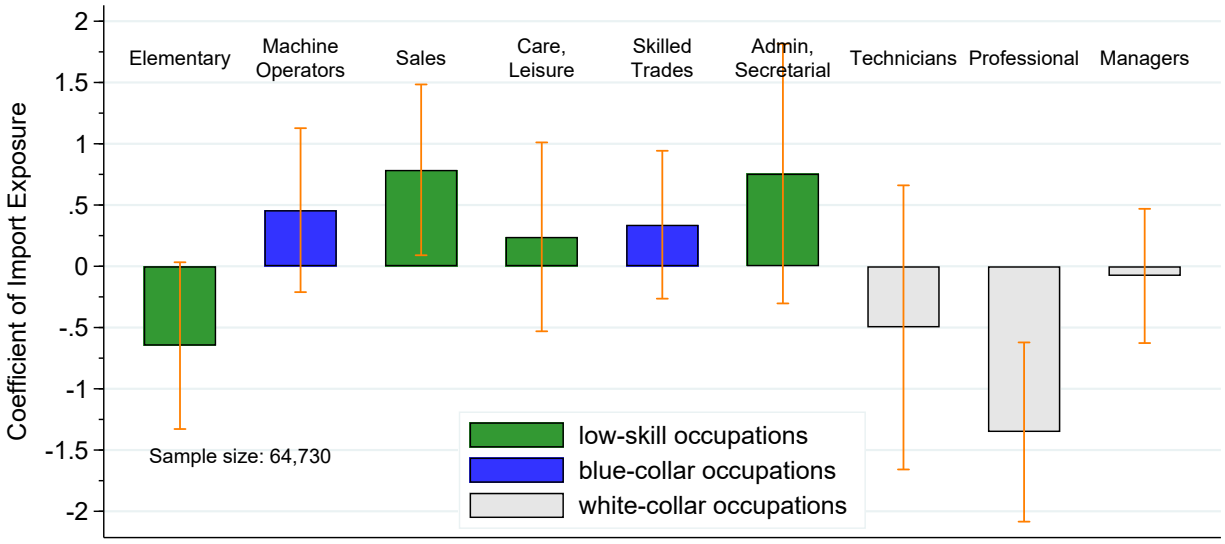
Notes: Sample size reported below the correlation coefficient.
Source is ONS Longitudinal Study.

Figure A.1: Import Competition and Occupations

(a) Men



(b) Women



Notes: The figure shows the effects of import exposure on flows into different occupational groups conditional on remaining in employment. Estimates of β in eq. (2) and their 95% confidence intervals reported. blue-collar workers as those employed in "skilled trades occupations" and "process, plant and machine operatives". Low-skill workers are those employed in "administrative and secretarial occupations", "caring, leisure and other service occupations", "sales and customer service occupations" and "elementary occupations". Finally, white-collar workers are defined as those working in "managers, directors and senior officials", "professional occupations", and "associate professional and technical occupations". This follows from the UK Standard Occupational Classification SOC2000. Sample size is 68,875 for men and 64,730 for women. Source is ONS Longitudinal Study.

Table A.6: Import Exposure and Types of Self-Employment (by Age and Gender)

	(1) SE	(2) Solo SE	(3) SE with employees	(1) SE	(2) Solo SE	(3) SE with employees
	Panel A. Men			**Panel B. Women**		
Import Exposure	0.897**	0.577**	0.320*	-0.620	-0.679*	0.059
	(0.371)	(0.257)	(0.173)	(0.388)	(0.370)	(0.109)
First-stage *F*-stat	[29.23]	[29.23]	[29.23]	[35.25]	[35.25]	[35.25]
Sample Size	83,627	83,627	83,627	85,170	85,170	85,170
	Panel C. Young Men			**Panel D. Young Women**		
Import Exposure	0.766*	0.428	0.338*	-0.685	-0.783*	0.098
	(0.401)	(0.301)	(0.182)	(0.459)	(0.418)	(0.176)
First-stage *F*-stat	[26.20]	[26.20]	[26.20]	[31.42]	[31.42]	[31.42]
Sample Size	56,472	56,472	56,472	56,800	56,800	56,800
	Panel E. Old Men			**Panel F. Old Women**		
Import Exposure	1.018*	0.721*	0.296	-0.526	-0.508	-0.017
	(0.593)	(0.435)	(0.319)	(0.443)	(0.393)	(0.119)
First-stage *F*-stat	[35.32]	[35.32]	[35.32]	[40.95]	[40.95]	[40.95]
Sample Size	27,155	27,155	27,155	28,370	28,370	28,370

Notes: Table shows the effects of import exposure on whether or not individuals go into self-employment (SE), solo self-employment (solo SE) and self-employment with employees. See notes of Table 2 for a list of the controls and details on the IV. Panels (a) and (b) consider men and women, respectively. Panels (c)-(f) show results by different age and gender subsamples. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table A.7: Import Exposure and Economic (In)activity

	(1) Δ inactivity	(2) Δ retired	(3) Δ studying	(4) Δ at home	(5) Δ sickness	(6) Δ other
	Panel A. Young Men					
Import Exposure	0.405**	-0.036	-0.069	0.257**	0.111	0.143
	(0.206)	(0.121)	(0.073)	(0.112)	(0.167)	(0.102)
First-Stage *F*-stat	[26.20]	[26.20]	[26.20]	[26.20]	[26.20]	[26.20]
Observations	56,472	56,472	56,472	56,472	56,472	56,472
	Panel B. Old Men					
Import Exposure	-2.298**	-3.472***	-0.057	0.590**	0.079	0.562**
	(0.895)	(0.856)	(0.041)	(0.234)	(0.356)	(0.226)
First-Stage *F*-stat	[35.32]	[35.32]	[35.32]	[35.32]	[35.32]	[35.32]
Observations	27,155	27,155	27,155	27,155	27,155	27,155
	Panel C. Young Women					
Import Exposure	0.679	-0.059	0.085	0.319	-0.002	0.336
	(0.421)	(0.079)	(0.109)	(0.401)	(0.205)	(0.221)
First-Stage *F*-stat	[31.42]	[31.42]	[31.42]	[31.42]	[31.42]	[31.42]
Observations	56,800	56,800	56,800	56,800	56,800	56,800
	Panel D. Old Women					
Import Exposure	0.521	0.330	-0.127	0.447*	-0.052	-0.075
	(1.070)	(0.831)	(0.086)	(0.242)	(0.277)	(0.208)
First-Stage *F*-stat	[40.95]	[40.95]	[40.95]	[40.95]	[40.95]	[40.95]
Observations	28,370	28,370	28,370	28,370	28,370	28,370

Notes: Table reports the effect of import exposure on whether or not individuals are inactive in the labour force (column (1)). This is then decomposed into columns (2)-(6) based on the reason they are not participating: because they are retired (column (2)), studying (column (3)), looking after the home (column (4)), sick (column (5)), or for other reasons (column (6)). See notes of Table 2 for a list of the controls and details on the IV. Standard errors clustered at the three-digit industry level reported are are in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table A.8: TTWA-level analysis. Summary Table.

TTWA-level analysis	(1) Manuf empl (all)	(2) Non-manuf empl (all)	(3) Marriage share (all)	(4) Divorce share (all)	(5) Divorce share (women)
Import Exposure	-1.765***	1.166***	2.381	-0.920***	-1.080*
	(0.535)	(0.414)	(1.523)	(0.229)	(0.572)
First-stage F-stat	20.14	20.14	20.14	20.14	19.73
Mean Outcome Variable	-4.69	4.45	-8.69	-2.04	-2.18
Level in 2001	11.82	62.47	47.67	7.71	9.06
Observations	186	186	186	186	186

Notes: Table presents the results of the local labour market analysis for the main outcomes. It shows that our main results do not depend on the research design and hold on different levels of aggregation. Here, import exposure is defined at the level of Travel-to-work-area (TTWA), based on initial (pre-shock) industry structure of the area, as in Autor et al. (2013). The number of observations is thus equal to 186, the number of TTWAs in England and Wales. To ease comparison with Autor et al. (2019), the sample is restricted to young people aged 18-44. All specifications control for the following baseline (2001) characteristics of TTWAs: the share of manufacturing out of population aged 18-44, share of people with higher education, share of foreign born, regional dummies, and female employment share. Specifications are weighted by initial working age population in each TTWA. Standard errors are clustered at the region level. There are, in total, 11 regions. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table A.9: Import Exposure and Labour Market Responses by Family Type

	(1) Δ manuf	(2) Δ unempl	(3) Δ empl	(4) Δ self-empl	(5) Δ active
	Panel A. Men in Stable Couples				
Import Exposure	-7.715***	0.580***	-0.697	1.298***	1.182***
	(2.153)	(0.236)	(0.657)	(0.395)	(0.402)
Mean Dep. Var.	-11.20	2.18	-28.69	10.20	-16.31
First-Stage *F*-stat	[30.98]	[30.98]	[30.98]	[30.98]	[30.98]
Observations	51,302	51,302	51,302	51,302	51,302
	Panel B. Single Men (in 2001 and 2011)				
Import Exposure	-7.837***	1.439**	-1.842*	0.769	0.336
	(2.263)	(0.702)	(1.072)	(0.995)	(0.995)
Mean Dep. Var.	-8.03	5.60	-24.84	10.35	-8.892
First-Stage *F*-stat	[27.62]	[27.62]	[27.62]	[27.62]	[27.62]
Observations	17,578	17,578	17,578	17,578	17,578
	Panel C. Women in Stable Couples				
Import Exposure	-6.424***	-0.251	-0.212	-0.646*	-1.108
	(2.436)	(0.237)	(0.906)	(0.359)	(0.740)
Mean Dep. Var.	-5.21	1.46	-30.34	4.86	-24.02
First-Stage *F*-stat	[35.49]	[35.49]	[35.49]	[35.49]	[35.49]
Observations	49,767	49,767	49,767	49,767	49,767
	Panel B. Single Women (in 2001 and 2011)				
Import Exposure	-5.842**	1.376*	-0.164	0.063	1.275
	(2.199)	(0.785)	(1.064)	(0.655)	(0.878)
Mean Dep. Var.	-5.23	3.53	-20.68	4.71	-12.44
First-Stage *F*-stat	[29.92]	[29.92]	[29.92]	[29.92]	[29.92]
Observations	14,639	14,639	14,639	14,639	14,639

Notes: Table shows effect of import exposure on individual labour market outcomes for men and women in stable couples (Panels A and C) and male and female singles (panels B and D). Stable couples refer to those who remain in the same relationship over the period 2001-2011. Single refers to those who never married and were without a partner in both 2001 and 2011. In addition to the controls described in the notes of Table 2, the regressions for those in stable couples control for partner characteristics: partners' age, occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table A.10: Import Exposure and Women's Labour Supply Responses by Age

	(1) Δ partner active	(2) Δ partner in work	(3) Δ partner employed	(4) Δ partner self-empl	(5) Δ partner full-time
	Panel A. Partners of Men				
Import Exposure	-0.581	-0.764	-0.616	-0.149	-1.384
	(0.433)	(0.616)	(0.731)	(0.288)	(0.851)
Mean Dep. Var.	-6.91	-7.01	-9.20	2.19	3.51
First-Stage *F*-stat	[30.98]	[30.98]	[30.98]	[30.98]	[34.34]
Observations	51,302	51,302	51,302	51,302	30,773
	Panel B. Partners of Young Men				
Import Exposure	-0.457	-0.907	-0.613	-0.294	-0.683
	(0.565)	(0.553)	(0.608)	(0.479)	(0.951)
Mean Dep. Var.	4.85	4.55	1.17	3.38	2.82
First-Stage *F*-stat	[27.53]	[27.53]	[27.53]	[27.53]	[30.17]
Observations	30,277	30,277	30,277	30,277	20,556
	Panel C. Partners of Old Men				
Import Exposure	-1.018	-0.807	-0.777	-0.031	-3.012**
	(1.239)	(1.336)	(1.172)	(0.561)	(1.555)
Mean Dep. Var.	-23.83	-23.67	-24.13	0.47	4.88
First-Stage *F*-stat	[36.55]	[36.55]	[36.55]	[36.55]	[47.29]
Observations	21,025	21,025	21,025	21,025	10,217

Notes: Table shows the effects of import exposure on the labour supply of men's female partners. Panels A (partners of all men), B (partners of young men), and C (partners of old men) report results for different sub-samples. The sample size in column (5) is smaller due to two reasons: (i) being conditional on working, (ii) not everyone reporting hours worked. In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table A.11: Import Exposure and Men's Labour Supply Responses by Age

	(1) Δ partner active	(2) Δ partner in work	(3) Δ partner employed	(4) Δ partner self-empl	(5) Δ partner full-time
	Panel A. Partners of Women				
Import Exposure	1.064***	1.249***	0.115	1.134***	1.227**
	(0.399)	(0.403)	(0.576)	(0.436)	(0.508)
Mean Dep. Var.	-14.42	-14.89	-16.86	1.96	6.99
First-Stage *F*-stat	[35.49]	[35.49]	[35.49]	[35.49]	[34.27]
Observations	49,767	49,767	49,767	49,767	37,018
	Panel B. Partners of Young Women				
Import Exposure	0.703**	1.092**	-0.173	1.265**	0.690
	(0.329)	(0.506)	(1.095)	(0.572)	(0.448)
Mean Dep. Var.	-2.57	-3.26	-8.33	5.07	3.72
First-Stage *F*-stat	[30.91]	[30.91]	[30.91]	[30.91]	[31.73]
Observations	30,289	30,289	30,289	30,289	26,997
	Panel C. Partners of Old Women				
Import Exposure	1.803**	1.627*	0.790	0.837	2.437**
	(0.811)	(0.848)	(1.090)	(0.785)	(1.178)
Mean Dep. Var.	-32.86	-32.98	-30.11	-2.86	15.84
First-Stage *F*-stat	[40.86]	[40.86]	[40.86]	[40.86]	[38.68]
Observations	19,478	19,478	19,478	19,478	10,021

Notes: Table shows the effects of import exposure on the labour supply of women's male partners. Panels A (partners of all women), B (partners of young women), and C (partners of old women) report results for different sub-samples. The sample size in column (5) is smaller due to two reasons: (i) being conditional on working, (ii) not everyone reporting hours worked. In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, one-digit occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Source is ONS Longitudinal Study.

Table A.12: Import Exposure and Women's Labour Supply Responses.
By Presence of Children and Labour Market Status in 2001.

	(1) Δ partner active	(2) Δ partner in work	(3) Δ partner employed	(4) Δ partner self-empl	(5) Δ partner full-time	(6) Sample Size [F-S *F*-stat]
Panel A. Presence of Children in 2001						
(A.1) those with at least one child	-0.148	-0.596	-0.118	-0.478	-2.154	28,012
	(0.514)	(0.562)	(0.641)	(0.361)	(1.365)	[33.57]
(A.1.1) youngest child aged 0-4	-0.484	-0.712	-0.180	-0.532	-2.932*	11,178
	(0.779)	(0.701)	(0.859)	(0.533)	(1.721)	[31.19]
(A.1.2) youngest child aged 5-10	-0.164	-0.336	1.437	-1.773*	-1.485	7,142
	(1.613)	(1.529)	(1.724)	(0.930)	(1.841)	[34.25]
(A.2) those without children	-1.097	-0.931	-1.076	0.145	0.123	23,290
	(0.922)	(1.056)	(1.151)	(0.446)	(1.763)	[27.89]
Panel B. Partners' (Women) Labour Status in 2001						
(B.1) women active in 2001	-0.463	-0.925	-0.530	-0.396	-1.384	40,429
	(0.739)	(0.713)	(0.844)	(0.359)	(0.851)	[33.33]
(B.2) women in work in 2001	-0.474	-0.787	-0.462	-0.325	-1.384	39,607
	(0.761)	(0.738)	(0.880)	(0.366)	(0.851)	[32.26]
(B.3) women part-time in 2001	-0.809	-0.978	0.279	-1.257**	-0.926	18,517
	(0.949)	(0.872)	(1.090)	(0.633)	(1.345)	[35.39]
(B.4) women full-time in 2001	-0.324	-0.735	-1.039	0.304	-0.821	21,090
	(0.801)	(0.842)	(1.302)	(0.702)	(1.142)	[29.24]

Notes: Table shows the effects of import exposure on the labour supply of men's female partners. In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, one-digit occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level reported are in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table A.13: Import Exposure and Men's Labour Supply Responses.
By Presence of Children and Labour Market Status in 2001.

	(1) Δ partner active	(2) Δ partner in work	(3) Δ partner employed	(4) Δ partner self-empl	(5) Δ partner full-time	(6) Sample Size [F-S *F*-stat]
Panel A. Presence of Children in 2001						
(A.1) those with at least one child	1.314***	1.300*	-0.105	1.405	1.404*	23,699
	(0.462)	(0.725)	(1.626)	(1.057)	(0.839)	[40.73]
(A.1.1) youngest child aged 0-4	0.841*	1.285*	1.417	-0.132	0.574	7,450
	(0.441)	(0.753)	(2.126)	(1.742)	(1.176)	[43.12]
(A.1.2) youngest child aged 5-10	1.661**	2.296**	-1.549	3.846**	1.871	6,371
	(0.781)	(0.996)	(1.658)	(1.768)	(1.190)	[34.07]
(A.2) those without a dependent child	0.831	1.209**	0.359	0.850	1.016*	26,070
	(0.516)	(0.477)	(0.953)	(0.902)	(0.544)	[29.94]
Panel B. Partners' (Men) Labour Status in 2001						
(B.1) men active in 2001	1.021***	1.358***	-0.023	1.381***	1.227**	46,543
	(0.391)	(0.394)	(0.613)	(0.489)	(0.508)	[34.30]
(B.2) men in work in 2001	0.913**	1.257***	-0.068	1.325**	1.227**	45,723
	(0.406)	(0.372)	(0.637)	(0.541)	(0.508)	[34.22]
(B.3) men part-time in 2001	-0.024	1.889	-6.353	8.242	5.865	2,117
	(1.973)	(2.101)	(5.276)	(5.160)	(3.721)	[35.87]
(B.4) men full-time in 2001	0.919**	1.201***	0.191	1.011	1.016**	43,606
	(0.422)	(0.357)	(0.706)	(0.615)	(0.457)	[33.54]

Notes: Table shows the effects of import exposure on the labour supply of women's male partners. In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, one-digit occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

B Placebo Checks

Figure B.1: Placebo Exercise. Manufacturing Employment.

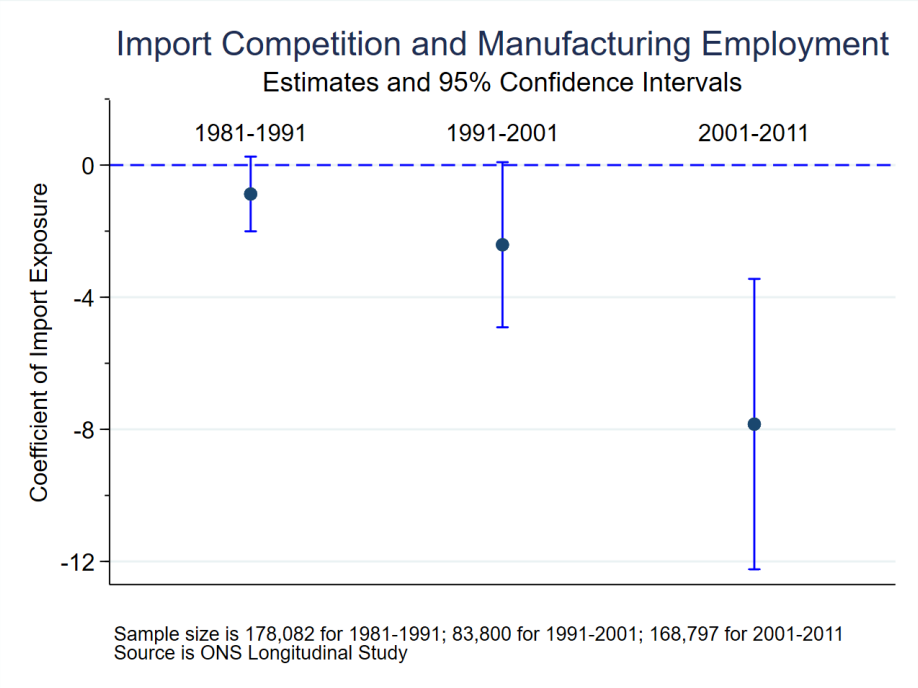


Figure B.2: Placebo Exercise. Unemployment.

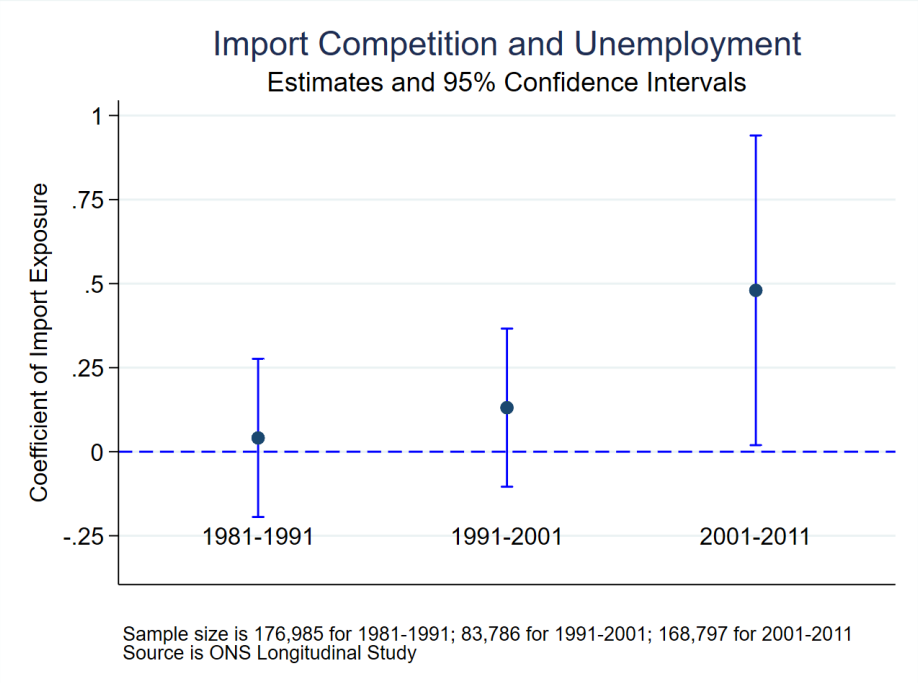


Table B.1: Placebo Exercise. 1981-1991.

	(1) Δ manuf	(2) Δ unempl	(3) Δ in work	(4) Δ active
	Panel A. All			
Import Exposure	-0.875	0.041	0.115	0.106
	(0.577)	(0.120)	(0.215)	(0.179)
First-Stage *F*-stat	[17.53]	[17.51]	[17.51]	[17.49]
Observations	178,082	176,985	176,985	178,066
	Panel B. Men			
Import Exposure	-0.526	-0.033	0.402	0.330*
	(0.659)	(0.155)	(0.245)	(0.192)
First-Stage *F*-stat	[24.12]	[23.92]	[23.92]	[24.00]
Observations	104,523	103,822	103,822	104,512
	Panel C. Women			
Import Exposure	0.176	0.153	0.216	0.294
	(0.449)	(0.126)	(0.292)	(0.297)
First-Stage *F*-stat	[12.68]	[12.76]	[12.76]	[12.68]
Observations	73,559	73,163	73,163	73,554

Notes: Table reports results of regressing changes in labour market outcomes between 1981-1991 in industries' future changes in import exposure (2001-2011). 'Being in work' cannot be decomposed between being in work as an employee and being self-employed in 1981. See notes of Table 2 for a list of the controls and details on the IV. Standard errors clustered at the three-digit industry level reported are in parentheses. *$p < 0.1$. Source is ONS Longitudinal Study.

Table B.2: Placebo Exercise. 1991-2001.

	(1) Δ manuf	(2) Δ unempl	(3) Δ in work	(4) Δ empl	(5) Δ self-empl	(6) Δ active
			Panel A. All			
Import Exposure	-2.412*	0.131	-0.391	-0.452	0.060	-0.261
	(1.275)	(0.120)	(0.298)	(0.406)	(0.225)	(0.289)
First-Stage *F*-stat	[76.98]	[76.98]	[76.98]	[76.98]	[76.98]	[76.98]
Observations	83,786	83,786	83,786	83,786	83,786	83,786
			Panel B. Men			
Import Exposure	-2.957*	0.027	-0.035	-0.616	0.580	-0.008
	(1.730)	(0.203)	(0.354)	(0.594)	(0.505)	(0.371)
First-Stage *F*-stat	[83.54]	[83.54]	[83.54]	[83.54]	[83.54]	[83.54]
Observations	50,484	50,484	50,484	50,484	50,484	50,484
			Panel C. Women			
Import Exposure	-0.187	0.258	-0.598	-0.062	-0.536	-0.341
	(0.417)	(0.230)	(0.367)	(0.682)	(0.386)	(0.347)
First-Stage *F*-stat	[59.35]	[59.35]	[59.35]	[59.35]	[59.35]	[59.35]
Observations	33,302	33,302	33,302	33,302	33,302	33,302

Notes: Table reports results of regressing changes in labour market outcomes between 1991-2001 in industries' future changes in import exposure (2001-2011). See notes of Table 2 for a list of the controls and details on the IV. Standard errors clustered at the three-digit industry level reported are in parentheses. *$p < 0.1$. Source is ONS Longitudinal Study.

C Robustness Checks

Table C.1: Summary of Main Robustness Checks. MEN.

	Panel A. Manufacturing Employment.			Panel B. Unemployment.		
	Men	Young Men	Old Men	Men	Young Men	Old Men
A. Excluding EU countries	-7.587***	-9.264***	-5.024**	0.830***	0.913**	0.721**
	(2.223)	(2.605)	(2.032)	(0.288)	(0.383)	(0.313)
B. Adding industry controls	-7.495***	-9.132***	-4.919**	0.816***	0.884**	0.714**
	(2.149)	(2.525)	(1.968)	(0.281)	(0.366)	(0.324)
C. Adding occupation controls	-7.424***	-8.952***	-5.056**	0.811***	0.885**	0.717**
	(2.186)	(2.517)	(2.086)	(0.273)	(0.356)	(0.315)
D. No occupation fixed effects	-7.591***	-9.134***	-5.138**	0.757***	0.892**	0.681**
	(2.295)	(2.632)	(2.184)	(0.262)	(0.337)	(0.316)
E. Region fixed effects	-7.432***	-9.023***	-4.949**	0.805***	0.874**	0.698**
	(2.213)	(2.549)	(2.151)	(0.267)	(0.348)	(0.307)
F. Trade with Eastern Europe	-6.433**	-8.272***	-3.524	0.738**	0.804*	0.627
	(2.575)	(2.804)	(2.607)	(0.350)	(0.456)	(0.383)
G. Export Exposure	-7.269***	-8.645***	-5.065**	0.769***	0.789**	0.748**
	(2.271)	(2.591)	(2.147)	(0.261)	(0.347)	(0.339)
	Panel C. Employment.			Panel D. Self-Employment.		
	Men	Young Men	Old Men	Men	Young Men	Old Men
A. Excluding EU countries	-1.179*	-2.138***	0.630	0.881**	0.744*	0.976
	(0.697)	(0.670)	(1.064)	(0.376)	(0.392)	(0.642)
B. Adding industry controls	-1.004	-1.842***	0.612	0.678*	0.526	0.826
	(0.676)	(0.663)	(1.024)	(0.379)	(0.385)	(0.583)
C. Adding occupation controls	-1.121*	-2.064***	0.607	0.881**	0.763*	0.964*
	(0.668)	(0.685)	(0.957)	(0.273)	(0.404)	(0.583)
D. No occupation fixed effects	-1.019	-1.820**	0.407	0.902**	0.698*	1.205*
	(0.717)	(0.779)	(1.005)	(0.416)	(0.414)	(0.666)
E. Region fixed effects	-1.089*	-2.085***	0.748	0.921***	0.830**	0.996*
	(0.653)	(0.660)	(1.030)	(0.355)	(0.392)	(0.596)
F. Trade with Eastern Europe	-1.312	-2.206**	0.237	1.389***	1.127**	1.809***
	(0.851)	(0.923)	(1.056)	(0.452)	(0.491)	(0.699)
G. Export Exposure	-1.059	-1.845***	0.444	0.800**	0.645	0.959
	(0.688)	(0.702)	(0.999)	(0.384)	(0.436)	(0.588)

Notes: Table summarises the robustness checks for our main results for men. Sample size is 83,627 for men; 56,472 for young men; and 27,155 for old men. See notes of Table 2 for a list of the controls and details on the IV. A excludes European Union countries when constructing eq. (3). B considers industry-specific controls, which are the intensity of R&D stock over capital, ICT stock intensity over capital, computer stock intensity over capital, and the intensity of net capital stock over industry output (measured in the year 1997 and at the two-digit SIC92 industry level). C considers occupation-specific controls, which are the Routine Task Intensity (RTI, Autor et al. (2003)) and the offshorability index (measured in the year 2001 and at the four-digit SOC2000 occupation categories. D does not include occupation fixed effects. E replaces TTWA fixed effects with fixed effects for 11 regions. F accounts for import competition with Eastern Europe. G accounts for export exposure. Standard errors clustered at the three-digit industry level are reported in parentheses. $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Source is ONS Longitudinal Study.

Table C.2: Summary of Main Robustness Checks. WOMEN.

	Panel A. Manufacturing Employment.			Panel B. Unemployment.		
	Women	Young Women	Old Women	Women	Young Women	Old Women
A. Excluding EU countries	-5.830**	-6.483***	-4.519*	0.110	0.365	-0.376*
	(2.315)	(2.340)	(2.670)	(0.332)	(0.463)	(0.223)
B. Adding industry controls	-5.823***	-6.319***	-4.768*	0.056	0.331	-0.475**
	(2.246)	(2.215)	(2.640)	(0.309)	(0.439)	(0.203)
C. Adding occupation controls	-5.823**	-6.283***	-4.879*	0.048	0.315	-0.453**
	(2.314)	(2.275)	(2.728)	(0.312)	(0.441)	(0.200)
D. No occupation fixed effects	-5.865**	-6.262***	-5.013*	0.106	0.384	-0.398**
	(2.545)	(2.395)	(2.917)	(0.301)	(0.437)	(0.197)
E. Region fixed effects	-5.802***	-6.245***	-4.884*	0.093	0.372	-0.417**
	(2.330)	(2.285)	(2.753)	(0.308)	(0.436)	(0.205)
F. Trade with Eastern Europe	-5.943**	-6.591***	-4.760	0.034	0.318	-0.457**
	(2.427)	(2.328)	(2.905)	(0.263)	(0.382)	(0.181)
G. Export Exposure	-5.748**	-6.098**	-4.980*	0.071	0.333	-0.415**
	(2.405)	(2.391)	(2.780)	(0.309)	(0.442)	(0.204)
	Panel C. Employment.			Panel D. Self-Employment.		
	Women	Young Women	Old Women	Women	Young Women	Old Women
A. Excluding EU countries	-0.073	-0.460	0.834	-0.615	0.642	-0.583
	(0.751)	(0.654)	(1.304)	(0.379)	(0.461)	(0.458)
B. Adding industry controls	0.011	-0.099	0.370	-0.724*	-0.813*	-0.583
	(0.717)	(0.583)	(1.262)	(0.386)	(0.460)	(0.441)
C. Adding occupation controls	-0.097	-0.301	0.470	-0.627	-0.687	-0.542
	(0.716)	(0.596)	(1.232)	(0.390)	(0.461)	(0.439)
D. No occupation fixed effects	-0.165	-0.296	0.132	-0.809*	-0.886*	-0.657
	(0.747)	(0.628)	(1.277)	(0.435)	(0.502)	(0.488)
E. Region fixed effects	-0.178	-0.355	0.286	-0.634*	-0.689	-0.533
	(0.704)	(0.578)	(1.275)	(0.375)	(0.437)	(0.435)
F. Trade with Eastern Europe	-0.358	-0.425	0.051	-0.395	-0.451	-0.330
	(0.713)	(0.604)	(1.134)	(0.339)	(0.404)	(0.377)
G. Export Exposure	-0.114	-0.171	0.247	-0.696*	-0.827*	-0.513
	(0.729)	(0.604)	(1.219)	(0.400)	(0.457)	(0.444)

Notes: Table summarises the robustness checks for our main results for women. See notes of Table 2 for a list of the controls and details on the IV. Sample size is 85,170 for women; 56,800 for young women; and 28,370 for old women. See notes in Table C.1 for details of different specifications. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table C.3: Robustness Sample. Partner Not Exposed to Import Competition. Import Exposure and Women's Labour Supply Responses (I)

	(1) Δ partner active	(2) Δ partner in work	(3) Δ partner employed	(4) Δ partner self-empl	(5) Δ partner full-time
	Panel A. Men				
Import Exposure	-0.009	-0.213	0.266	-0.478	-1.335
	(0.775)	(0.689)	(0.838)	(0.412)	(0.817)
First-Stage *F*-stat	[31.99]	[31.99]	[31.99]	[31.99]	[33.53]
Observations	36,515	36,515	36,515	36,515	28,398
	Panel B. Young Men				
Import Exposure	-0.240	-0.692	-0.137	-0.555	-1.049
	(0.472)	(0.516)	(0.687)	(0.648)	(1.123)
First-Stage *F*-stat	[28.37]	[28.37]	[28.37]	[28.37]	[29.07]
Observations	21,459	21,459	21,459	21,459	18,942
	Panel C. Old Men				
Import Exposure	0.135	0.353	0.805	-0.218	-2.018
	(1.691)	(1.620)	(1.439)	(0.330)	(1.523)
First-Stage *F*-stat	[38.69]	[38.69]	[38.69]	[38.69]	[47.65]
Observations	15,056	15,056	15,056	15,056	9,456

Notes: Table shows the effects of import exposure on the labour supply of men's female partners. Sample is those with partners that are working but in industries not exposed to import competition. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table C.4: Robustness Sample. Partner Not Exposed to Import Competition.
Import Exposure and Women's Labour Supply Responses (II)

	(1) Δ partner active	(2) Δ partner in work	(3) Δ partner employed	(4) Δ partner self-empl	(5) Δ partner full-time	(6) Sample Size [F-S *F*-stat]
Panel A. Presence of Children in 2001						
(A.1) those with at least one dependent child	-0.132	-0.382	0.657	-1.039	-2.025	18,985
	(0.598)	(0.665)	(0.733)	(0.583)	(1.382)	[35.65]
(A.1.1) dependent child aged 0-4	-0.511	-1.324	0.368	-1.692*	-3.063	6,270
	(0.795)	(0.845)	(1.095)	(0.922)	(2.045)	[42.60]
(A.1.2) dependent child aged 5-10	0.482	0.970	3.272**	-2.302	-0.530	5,205
	(1.454)	(1.571)	(1.436)	(1.445)	(1.973)	[31.66]
(A.2) those without a dependent child	0.185	-0.019	-0.136	0.116	0.196	17,530
	(1.395)	(1.264)	(1.477)	(0.522)	(1.765)	[28.65]
Panel B. Partners' Labour Status in 2001						
(B.1) partner in work in 2001	-0.009	-0.213	0.266	-0.478	-1.335	36,515
	(0.775)	(0.689)	(0.838)	(0.412)	(0.817)	[31.99]
(B.2) partner part-time in 2001	-0.813	-0.926	0.556	-1.482**	-0.875	17,657
	(0.953)	(0.883)	(1.102)	(0.673)	(1.616)	[33.83]
(B.3) partner full-time in 2001	0.639	0.366	-0.048	0.413	-1.001	18,858
	(0.904)	(0.821)	(1.430)	(0.876)	(1.111)	[29.29]

Notes: Table shows the effects of import exposure on the labour supply of men's female partners. Sample is those with partners that are working but in industries not exposed to import competition. In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table C.5: Robustness Sample. Partner Not Exposed to Import Competition. Import Exposure and Men's Labour Supply Responses (I)

	(1) Δ partner active	(2) Δ partner in work	(3) Δ partner employed	(4) Δ partner self-empl	(5) Δ partner full-time
	Panel A. Women				
Import Exposure	0.943***	1.269***	0.468	0.802	1.340***
	(0.456)	(0.495)	(0.733)	(0.614)	(0.399)
First-Stage *F*-stat	[31.38]	[31.38]	[31.38]	[31.38]	[31.50]
Observations	37,221	37,221	37,221	37,221	30,159
	Panel B. Young Women				
Import Exposure	0.398	0.863	-0.191	1.054	1.000*
	(0.488)	(0.549)	(1.258)	(0.995)	(0.546)
First-Stage *F*-stat	[25.97]	[25.97]	[25.97]	[25.97]	[27.53]
Observations	23,554	23,554	23,554	23,554	22,018
	Panel C. Old Women				
Import Exposure	2.441*	2.476*	2.162*	0.314	2.216**
	(1.343)	(1.387)	(1.306)	(0.814)	(0.970)
First-Stage *F*-stat	[39.75]	[39.75]	[39.75]	[39.75]	[39.33]
Observations	13,667	13,667	13,667	13,667	8,141

Notes: Table shows the effects of import exposure on the labour supply of women's male partners. Sample is those with partners that are working but in industries not exposed to import competition. In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.

Table C.6: Robustness Sample. Partner Not Exposed to Import Competition.
Import Exposure and Men's Labour Supply Responses (II)

	(1) Δ partner active	(2) Δ partner in work	(3) Δ partner employed	(4) Δ partner self-empl	(5) Δ partner full-time	(6) Sample Size [F-S *F*-stat]
Panel A. Presence of Children in 2001						
(A.1) those with at least one dependent child	1.577***	0.893	0.009	0.884	1.610*	18,194
	(0.461)	(0.929)	(1.993)	(1.433)	(0.961)	[42.12]
(A.1.1) dependent child aged 0-4	1.312**	1.621**	2.523	-0.902	1.496	5,807
	(0.528)	(0.704)	(2.329)	(2.103)	(1.553)	[41.40]
(A.1.2) dependent child aged 5-10	2.631***	2.603*	-1.373	3.975	0.687	4,868
	(0.982)	(1.362)	(2.841)	(2.722)	(2.648)	[37.97]
(A.2) those without a dependent child	0.492	1.594**	1.010	0.584	1.149	19,027
	(0.734)	(0.694)	(1.136)	(1.058)	(0.702)	[24.29]
Panel B. Partners' Labour Status in 2001						
(B.1) partner in work in 2001	0.943**	1.269**	0.468	0.802	1.340**	37,221
	(0.456)	(0.495)	(0.733)	(0.614)	(0.399)	[31.38]
(B.2) partner part-time in 2001	-1.437	1.677	0.113	1.565	13.84**	1,882
	(2.630)	(3.012)	(6.436)	(5.768)	(6.943)	[39.71]
(B.3) partner full-time in 2001	0.930**	1.165**	0.446	0.719	1.119***	35,339
	(0.456)	(0.462)	(0.713)	(0.680)	(0.410)	[31.17]

Notes: Table shows the effects of import exposure on the labour supply of women's male partners. Sample is those with partners that are working but in industries not exposed to import competition. In addition to the controls described in the notes of Table 2, all regressions control for partner characteristics: partners' age, one-digit occupation, and one-digit industry fixed effects. Standard errors clustered at the three-digit industry level are reported in parentheses. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Source is ONS Longitudinal Study.