The Hidden Cost of Globalization: Import Competition and Mental Distress*

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First Draft: August, 2015.
This Version: February, 2016.

Abstract

We study the effect of import competition on workers' mental distress. To this purpose, we source information on the mental health of British workers from the British Household Panel Survey, and combine it with measures of import competition in more than 100 industries over 1995-2007. We find that, controlling for a wide range of individual, household, and industry characteristics, an increase in import competition has a positive, statistically significant, and large impact on mental distress. Following a one standard deviation increase in import competition, the average worker would need a yearly monetary compensation of around 200 British pounds to make up for her utility loss. We show that part of the effect is due to import competition worsening the current labor market condition of individuals, in terms of higher probability of job displacement and lower wage growth. Additionally, and most importantly, we show that import competition worsens mental health also for individuals who witness no change in observable labor market outcomes, by increasing stress on the job and by worsening expectations about the future.

JEL codes: F1.

Keywords: Subjective well-being; trade adjustment costs; individual-level panel data.

*We thank Jerome Adda, Carlo Altomonte, Manuel Arellano, Lorenzo Caliendo, Amelia Compagni, Anne-Marie Jeannet, Rafael Lalive, Myriam Mariani, Francesco Passarelli, Salvatore Piccolo, Fabiano Schivardi, Yolanda Ramallo Fariña, Pedro Serrano-Aguilar, Guido Tabellini, Aleksandra Torbica and seminar participants at Bocconi University, Catholic University of Milan, Hungarian Academy of Sciences (Budapest), LUISS University, Stockholm Institute of Transition Economics, Universities of Ancona, Barcelona, Passau, and Uppsala, and the 2015 iHEA Conference in Milan for helpful comments. Rosario Crinò gratefully acknowledges financial support from Fundación Ramón Areces. The usual disclaimer applies.

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1 Introduction

Trade liberalization may raise countries' welfare by increasing aggregate productivity, by lowering consumer prices, and by expanding the range of goods available for consumption.[1] However, recent and influential empirical studies show that trade liberalization is also associated with substantial adjustment costs for workers in import competing jobs (see, most notably, Autor et al., 2013, 2014). Yet, the focus of these studies is limited to labor market outcomes, such as individuals' earnings and employment status. In this paper, we shed the first light on a new trade adjustment cost: the impact of import competition on individuals' subjective well-being. We show, in particular, that import competition determines a severe worsening of individuals' mental health: a *hidden*, yet economically important, cost of globalization. Overall, our results suggest that the response of individuals' mental health to globalization should be part of a comprehensive analysis of the net welfare gains from trade.

Our analysis builds on a unique data set. We combine longitudinal data on mental health for a representative sample of British workers (sourced from the British Household Panel Survey) with measures of import competition in more than 100 industries, covering the entire UK economy over the period 1995-2007. We find that import competition substantially raises mental distress, as measured by the Generalized Health Questionnaire indicator (GHQ-12). Quantitatively, a one standard deviation increase in import competition worsens mental health by 1.2 percentage points, explaining 12.5% of the within-individual standard deviation in mental distress. Mapping GHQ-12 scores into a utility index we find that, following a one standard deviation increase in import competition, the average worker would need a yearly monetary compensation of around 200 British pounds to make up for her utility loss.

We provide evidence that the effect of import competition works through a complex set of mechanisms. In particular, import competition increases mental distress by worsen-

[1] See, in particular, Pavcnik (2002) and Melitz (2003) on aggregate productivity, Feenstra (1994) and Broda and Weinstein (2006) on consumer prices, and Goldberg et al. (2010) and Colantone and Crinó (2014) on the number of products.

ing the current labor market condition of individuals, in terms of higher probability of job displacement and lower wage growth. Additionally, and most importantly, import competition worsens mental health also for workers who witness no change in observable labor market outcomes, by increasing stress on the job and by worsening expectations about the future. The latter channels reach beyond conventional labor market mechanisms.

The UK is an interesting context for studying the impact of import competition on mental distress, for three main reasons. First, mental health is a major concern in the UK: in 2007, 8.65 million people suffered from mental health problems, and treating mental distress was one the government's three clinical priorities, alongside cancer and heart diseases (McCrone et al., 2008). The overall cost of mental health (including treatment services and employment losses) reached 49 billion pounds, roughly 3.5% of GDP (McCrone et al., 2008).[2] Second, trade integration in the UK entailed a sharp increase in import competition: between 1995 and 2007, real imports increased by 75%, much more than real exports and output, which rose by 52% and 27%, respectively. Finally, the UK is the only country with publicly available panel data on mental health, for a nationally representative sample of individuals, over a long time span.

Our identification strategy consists of comparing changes in mental health across similar individuals, who are employed in similar industries except for the import competition shock. The BHPS database contains a wealth of information on observable worker characteristics. Moreover, being a panel data set, it offers repeated information on mental health for each individual. This allows us to condition the estimation on individual fixed effects, which remove differences in the level of mental health across individuals, and allow us to exploit time variation in mental distress for the same person. To account for possible correlation between import competition and unobserved industry-specific shocks in the UK, we instrument import competition using non-UK exports to the rest of the world. This IV strategy is meant to isolate the variation in import competition due to changes in supply conditions in the exporting countries (see, most notably, Autor et al., 2013, 2014, 2015ab;

[2]The additional costs due to absenteeism and presenteeism were estimated around 8.8 billion pounds (Cooper and Dewe, 2008).

Dauth et al., 2014; Hummels et al., 2014; Bloom et al., 2016).

Our baseline estimates reveal a quantitatively large impact of import competition on mental distress. This effect is remarkably robust to a large range of sensitivity checks. In particular, we find similar effects when: (1) using alternative measures of mental health; (2) employing alternative instruments; (3) controlling for pre-existing industry trends and contemporaneous shocks; and (4) addressing the possibly non-random sorting of individuals across industries.

We find the effect of import competition to be relatively stable across individuals of different age and gender, as well as across full-time and part-time employees, and across permanent and temporary workers. The effect is instead milder for long-tenure workers and for the self-employed which, respectively, have a stronger attachment to their firms and are more likely to operate in low tradable jobs that are little exposed to foreign competition. The effect is more precisely estimated for service sector employees, a result that reflects the strong specialization of the UK economy in services. Accordingly, Chinese import competition, which is mostly contained to manufacturing, has a smaller impact than import competition from other countries.

Next, we provide evidence on a number of mechanisms through which import competition may affect mental health. Our empirical strategy consists in a two-step approach similar to Heckman et al. (2013). In the first step, we regress mental health on proxies for each mechanism. In the second step, we regress these proxies on import competition. If a given mechanism is relevant, both regressions should deliver a statistically significant coefficient. The first mechanism we consider is related to job switching and displacement. We find import competition to be associated with a substantial increase in the probability of switching out of employment. In turn, leaving employment is associated with a large increase in mental distress. The second mechanism is related to changes in wages. Focusing on the sub-sample of workers who remain employed, we find import competition to lower wage growth, and this, in turn, to induce a substantial increase in mental distress.

The third and fourth mechanisms reach beyond the directly observable labor market

outcomes, such as job status and wages. In particular, the third mechanism relates to changes in job satisfaction. Focusing on employed workers and controlling for the observed change in wages, we find import competition to be associated with a worsening of individuals' satisfaction with their current job, mostly through an increase in workload (hours worked) and stress on the job. In turn, this is associated with a substantial increase in mental distress. Finally, the fourth mechanism relates to changes in expectations about the future. Controlling for changes in job status, wage growth, and job satisfaction, we find import competition to worsen individuals' expectations about opportunities for job promotion and training, as well as about their future financial situation. This, in turn, leads to higher mental distress. Using structural equation modeling we find that these four mechanisms mediate a non-negligible 26% of the effect of import competition on mental distress. Overall, these results imply that import competition works not just through standard labor market mechanisms (changes in job status and wages), but also through other channels related to job satisfaction and future expectations. As a result, import competition also affects workers who experience no change in their observable working conditions.

The rest of the paper is organized as follows. Section 2 discusses the related literature. Section 3 presents the data and the main variables used in the analysis. Section 4 illustrates our empirical specification and identification strategy. Section 5 presents the empirical results. Section 6 concludes.

2 Related Literature

Our paper is related to several strands of empirical research. First, we contribute to the growing literature on the labor market implications of trade and import competition (see, in particular, Bernard et al., 2006; Khandewal, 2010; Autor et al., 2013, 2014, 2015ab; Crinò and Epifani 2014a,b; Dauth et al., 2014; Hummels et al., 2014; Acemoglu et al., 2015; Bloom et al., 2016). These papers find import competition to worsen workers' labor market conditions, in terms of higher probability of job displacement and lower wage growth. Nevertheless, the overall effect of import competition on welfare is usually estimated to be positive,

thanks to the reduction in output prices and to the larger set of varieties brought about by cheaper foreign goods. None of these studies, however, considers the subjective well-being of individuals. Our key contribution is to argue that, by increasing mental distress, import competition may imply additional, and potentially large, adjustment costs.

Second, our paper is related to the small literature on trade and health. A few studies analyze the effects of trade on the diffusion of infectious diseases and on the incidence of injuries, sickness and mortality (Levine and Rothman, 2006; Owen and Wu, 2007; Oster, 2012; Hummels et al., 2015; McManus and Schaur, 2015ab; Adda and Fawaz, 2015; Pierce and Schott, 2015). These papers typically use aggregate data, and reach mixed conclusions.[3] We are the first to: (*a*) study how import competition affects mental distress at the worker level; and (*b*) provide evidence on a number of microeconomic mechanisms underlying this effect.

Finally, we connect with the broader literature on the economic determinants of mental health. This literature shows that mental distress is highly sensitive to changes in economic factors such as income and job status (see, e.g., Smith, 1999; Ruhm, 2000; Clark, 2003; Di Tella et al., 2007; Sullivan and von Wachter, 2009; Marcus, 2013; McInerney et al., 2013; Schwandt, 2014; Farrè et al., 2015). Mental distress is also found to respond to changes in environmental conditions, such as local area crime or neighborhood quality (Katz et al., 2001; Kling et al., 2007; Ludwig et al., 2012; Cornaglia et al., 2014; Dustmann and Fasani, 2015). Our contribution is to show that import competition is an additional, first-order determinant of workers' mental distress.

3 Data and Variables

In this section, we describe the data and provide some descriptive statistics.

[3] A notable exception is Hummels et al. (2015), who study the effects of export shocks in Denmark using worker-level data.

3.1 The British Household Panel Survey

Our main data source is the British Household Panel Survey (BHPS). This database covers a representative sample of the British population aged 16 or more, between 1991 and 2008. Importantly, each individual is interviewed every year, so the BHPS is a panel data set. The survey is household based, meaning that each person within a household is interviewed every year, and keeps being interviewed when she leaves the original household to form a new one, together with all the new family members. We focus in particular on seven waves of the survey, spanning the period 2001-2007. As discussed in Section 3.3, by considering this time period we can construct import competition measures that rely on lagged trade data for both manufacturing and service industries since 1995, while excluding the recent financial crisis. Overall, in our regressions we use approximately 50,000 individual-year observations, corresponding to 12,748 individuals observed on average for 5.4 years. About 22% of individuals are interviewed in all seven waves.

The BHPS has a number of unique features, which are crucial for our analysis. In particular, it provides extremely detailed information on mental health for each individual over time, along with a wealth of individual and household characteristics, including demographic variables, employment status, and physical health. Moreover, the BHPS contains information on each person's industry of employment in every year, thereby making it possible to match the individual-level data with proxies for import competition and other industry characteristics. The richness of the resulting data set allows us to: (i) study how import competition affects mental distress at the worker level; and (ii) provide extensive evidence on several mechanisms underlying this effect.

3.2 The Measure of Mental Health

Our main proxy for mental health is the 12-item version of the Generalized Health Questionnaire indicator (GHQ-12), which is available in each wave of the BHPS. GHQ-12 is based on twelve questions related to three clinically meaningful factors: anxiety and depression, social dysfunction, and loss of confidence. Each question can be answered in

four ways, denoting different levels of distress. Answers are assigned a value from 0 to 3, so that higher numbers always indicate higher mental distress. The twelve questions and the four answers are listed in Table A1. The GHQ-12 indicator is obtained as the sum of the values taken by the answers to the twelve questions ('Likert scoring method'). As such, GHQ-12 ranges from 0 (least distressed) to 36 (most distressed). In our analysis, we normalize the index to range between 0 and 100, so as to interpret each regression coefficient as the percentage point effect of the corresponding variable on mental distress.[4]

GHQ-12 is widely used to detect psychiatric illness (Goldberg, 1978; Serrano-Aguilar et al., 2009) and is nowadays the standard proxy for mental distress in studies on the economic and social determinants of mental health (see, most notably, Clark, 2003; Dustmann and Fasani, 2015). GHQ-12 is particularly well suited for detecting short-run, within-individual changes in mental distress. The reason is that each person must answer each of the twelve questions by indicating how the corresponding determinant of mental health has changed in a given year compared to the usual condition of that person. Thanks to the availability of repeated information on GHQ-12 for each individual, we can exploit this within-individual variation for identifying the effect of import competition on mental distress.

3.3 Import Competition and Other Industry Characteristics

Using the information on each worker's industry of employment, we link the individual-level data from the BHPS with industry-level data on import competition and other variables. We observe individuals employed in 122 industries, which span the entire UK economy. In particular, 103 industries belong to the manufacturing sector, and are defined at the 3-digit level of the NACE Rev. 1.1 classification. The remaining industries cover the entire service sector.

We use the conventional definition of import competition, namely, the ratio of imports

[4]We assess the robustness of our results using a different scoring method, known as the 'Caseness bimodal scoring'. This assigns a 0 to the two answers corresponding to the lowest levels of distress, and a 1 to the two answers corresponding to the highest levels of distress. Accordingly, this alternative version of the GHQ-12 indicator ranges from 0 to 12. Also in this case, we rescale the index between 0 and 100.

over apparent consumption (production plus imports minus exports). We source data on imports and exports from Comext (for the manufacturing industries) and WIOD (for the service industries). Production data come from the UK national statistical institute (for manufacturing) and WIOD (for services). Next, we define the import competition shock IC_{jt-1} as the 5-year % change in import competition in the industry j in which a given worker was employed in year $t-1$. We then relate IC_{jt-1} to the mental distress of the same worker in year t. Because trade data for the service industries are available since 1995, and IC_{jt-1} is constructed using six lags of data, our final estimation sample includes BHPS waves from 2001 to 2007. We normalize the import competition shock by its standard deviation for ease of interpretation.

Finally, we complement these data with information on a wealth of other industry characteristics, which we use as control variables in our analysis. These include the 5-year % change in real output, output price, employment share of high-skill workers, value added, and export intensity (exports-to-output ratio). We source these data from Comext, WIOD, and the UK national statistical institute.

3.4 Summary Statistics

Table 1 reports descriptive statistics on the individual-level variables contained in the BHPS. The average age of individuals in our sample is 41 years, and the sample is equally split between males and females. Roughly 93% of individuals are either employed or self-employed. Three-fourths of the sample consist of individuals who are married or leave as a couple, either with no dependent children (42%) or with some dependent child (38%). Average household size is 3 persons. Almost 83% of individuals own a house, while 16% leave in a rented flat. Turning to the mental health indicators, GHQ-12 (normalized between 0 and 100) is equal to 30 on average, with an overall standard deviation of 14.2 and a within-individual standard deviation of 9.6. When separately considering the three components of GHQ-12, those related to anxiety and depression and social dysfunction are slightly higher,

with a mean (standard deviation) of 30.8 (20.1) and 33.9 (12.7), respectively.[5] The component related to loss of confidence is instead lower, equal to 17.1 (standard deviation of 20.7).

We now turn to discussing the import competition shock. IC_{jt-1} has a sample mean of 17.6 (standard deviation of 40.6), which implies that competitive pressure from foreign countries has substantially intensified over the period of analysis. The average figures mask however a significant degree of heterogeneity across industries. Figure 1 makes this point by showing the distribution of the average import competition shock across the 122 industries in our sample. As reported in Table 2, some industries (e.g., Mining and agglomeration of hard coal; Manufacture of televisions) have received very large positive shocks, close to 90% on average. Other industries (e.g., Manufacture of steam generators; Production of salt) have instead experienced a significant reduction in foreign competitive pressure. In our analysis, we will exploit this large variation in IC_{jt-1} to identify the effect of import competition on mental distress.

4 Empirical Specification

We estimate specifications of the following form:

$$MD_{ijt} = \alpha_i + \alpha_j + \alpha_t + \beta_1 IC_{jt-1} + \mathbf{I}_{it-1}\gamma^{'} + \mathbf{H}_{it-1}\delta^{'} + \mathbf{S}_{jt-1}\lambda^{'} + \varepsilon_{ijt}, \tag{1}$$

where MD_{ijt} is a proxy for the year t mental distress of worker i, who was employed in industry j in year $t-1$. α_i, α_j, and α_t are individual, industry, and year fixed effects, respectively. IC_{jt-1} is the import competition shock defined above. $\mathbf{I}_{it-1}$, $\mathbf{H}_{it-1}$, and $\mathbf{S}_{jt-1}$ are vectors of controls for past individual, household, and industry characteristics, respectively. In particular, $\mathbf{I}_{it-1}$ contains log age and its square, an indicator for physical health,

[5] The score on each of the three components of GHQ-12 is obtained by summing over answers to questions pertaining to each clinical dimension (details in Table A1). Each indicator is then normalized to range between 0 and 100.

and dummies for educational level, marital and job status.[6] $\mathbf{H}_{it-1}$ includes household size and dummies for household type and home ownership. $\mathbf{S}_{jt-1}$ contains the 5-year % change in real output, output price, employment share of high-skill workers, value added, and export intensity. Finally, ε_{ijt} is an error term.

The inclusion of individual fixed effects implies that, for identification, we exploit variation in mental distress for the same person over time, while soaking up any time-invariant determinants of mental health. The vectors of control variables allow us to condition the estimation on a large set of time-varying observable characteristics at the individual, household, and industry level. Finally, the industry and time fixed effects absorb, respectively, time-invariant differences across industries and time-specific shocks that are common to all industries. In a nutshell, our identification strategy therefore compares changes in mental distress across similar workers, who live in similar households, and who are employed in similar industries except for the import competition shock.

A concern with the identification of our parameter of interest, β_1, is the possible endogeneity of IC_{jt-1}. Reverse causality should not be an issue in our case, because past changes in an industry's import competition are unlikely to be driven by the current realization of an individual's mental distress. One may however worry about potential omitted variables correlated with both IC_{jt-1} and MD_{ijt}, such as demand or technology shocks occurring in UK industries. This concern is mitigated by the fact that our specification includes industry dummies, year dummies, and a wealth of time-varying controls for individual, household and industry characteristics. In addition, we run instrumental variables (IV) regressions. In particular, we instrument IC_{jt-1} using the 5-year % change in non-UK exports to the rest of the world, i.e., to all countries except the UK. Inspired by a large empirical literature, this instrument is meant to isolate variation in UK imports due to exogenous

[6] See Table 1 for details. The indicator for physical health is based on 11 questions in the BHPS. Each question asks the respondent to report whether or not she suffered from a specific health problem in each year. The indicator is computed as the sum of the scores obtained in each question: zero in case of no problem, and one in case of reported problems. It is then normalized to range between 0 and 100. Specifically, the 11 health questions concern problems with: arms, legs, neck and the like (including arthritis and rheumatism); sight; hearing; skin conditions and allergies; chest/breathing; hearth/blood pressure and circulation; stomach, liver, kidneys and digestion; diabetes; epilepsy; migraine or frequent headaches; other.

changes in supply conditions in the origin countries (see, most notably, Autor et al., 2013, 2014, 2015ab; Dauth et al., 2014; Hummels et al., 2014; Bloom et al., 2016). In Section 5.1.2, we extensively discuss possible concerns with the exclusion restriction underlying this IV strategy. Moreover, we provide results obtained with a different instrument, which exploits time variation in bilateral exchange rates and is widely used in the empirical literature on the labor market effects of import competition (Revenga, 1992; Bertrand, 2004; Bernard et al., 2006; Cuñat and Guadalupe, 2009; Khandelwal, 2010; Lu and Ng, 2013).

A second concern with the estimation of β_1 is the possible non-random assignment of workers to industries. This would not be an issue if workers remained in the same industry throughout the sample period. In this case, the individual fixed effects (α_i) would absorb compositional effects due to the non-random assignment of workers to industries. However, some workers in our sample do switch industries (24% on average). Workers' movements may bias the coefficient of interest either upward or downward, depending on whether workers with worse mental conditions systematically switch to industries with higher or lower import competition shocks. We address this concern in two robustness checks (see Section 5.1.2). In a first exercise, we restrict to workers employed in a given industry for at least two consecutive years, and define a separate fixed effect for each worker-industry combination. This strategy implies that we only exploit variation in mental distress and import competition for a given worker while employed in the same industry. In a second exercise, we redefine the import competition shock at the 2-digit (rather than 3-digit) industry level. Using more aggregate data allays concerns with sorting, as individuals move less across broad 2-digit industries than they do across narrow 3-digit industries.

5 Results

We now present the empirical results. We start by providing extensive evidence that import competition induces a significant increase in workers' mental distress (Section 5.1). Then, we provide evidence on a number of possible mechanisms through which this effect takes place (Section 5.2).

5.1 Import Competition and Mental Distress

5.1.1 Baseline Estimates

The baseline estimates of eq. (1) are reported in Table 3. In column (1), we show OLS estimates of a parsimonious specification, in which GHQ-12 is regressed only on the import competition shock (IC_{jt-1}) and individual fixed effects (α_i). Standard errors are corrected for clustering both by individual and by industry (i.e., two-way clustering), so as to allow for correlation in the error terms both for the same person over time and across individuals employed in the same industry. The coefficient β_1 is positive and very precisely estimated, indicating that a rise in import competition in a worker's industry of employment is associated with an increase in mental distress.

In column (2), we estimate the same specification by Two-Stage Least Squares (2SLS). We instrument IC_{jt-1} using non-UK exports to the rest of the world. In the first-stage regression, the coefficient on the instrument has the expected positive sign, and it is large and very precisely estimated (0.31, s.e. 0.021). At the same time, the second-stage coefficient β_1 remains positive and statistically significant. The slight increase in the point estimate suggests that our instrument corrects for possible downward bias in the OLS coefficient, which could be due to measurement error and unobserved shocks correlated with import competition and mental distress in opposite directions. In column (3), we add our large set of controls for individual and household characteristics ($\mathbf{I}_{it-1}$ and $\mathbf{H}_{it-1}$). The coefficient β_1 remains precisely estimated and slightly increases.

In column (4), we add a full set of industry and year effects (α_j and α_t). Our coefficient of interest is largely unchanged. Finally, in column (5) we add the set of time-varying industry controls ($\mathbf{S}_{jt-1}$). Their inclusion leaves our main evidence unaffected and, if anything, implies a slight increase in the coefficient β_1.

Overall, these results indicate that import competition has a positive effect on individuals' mental distress. An individual working in an industry exposed to a stronger increase in foreign competition experiences a larger increase in her mental distress, as compared to a similar individual employed in an industry that witnesses a smaller import competition

shock, *ceteris paribus*.

How strong is the effect of import competition? The point estimate in column (5) implies that a one standard deviation increase in IC_{jt-1} leads to a 1.2 p.p. increase in GHQ-12. The latter variable has an overall standard deviation of 14.2 and a within-individual standard deviation of 9.6. Hence, a one standard deviation increase in IC_{jt-1} explains a sizable 8.5% (12.5%) of the overall (within-individual) standard deviation of GHQ-12.

To provide further evidence on the economic magnitude of the effect, we estimate the amount of money that would be needed to compensate the average worker for the utility loss imposed by a one standard deviation increase in import competition. We start by mapping GHQ-12 into a utility score, following an algorithm borrowed from the health literature (Serrano-Aguilar et al., 2009).[7] This score is based on the EQ-5D measure of utility and is normally used for computing quality-adjusted life years (QALY). The EQ-5D indicator is constructed in such a way that a situation of perfect health gets a utility score of 1, while less than perfect health gets lower (and even negative) scores.[8] One year of life in perfect health corresponds to one QALY and is estimated to be worth between 20,000 and 30,000 pounds (McCabe et al., 2008; Cornaglia et al., 2014). Therefore, a decrease in mental health can be translated into a decrease in utility (and thus QALY) that can in turn be expressed in monetary terms. With the EQ-5D indicator in hand, we replicate the IV specification in column (5) of Table 3, using EQ-5D scores in place of GHQ-12 as the dependent variable. We obtain a coefficient of -0.009 (s.e. 0.001), which indicates that a one standard deviation increase in import competition lowers utility in one year by about 1 p.p.. Hence, the compensation for this utility loss is between 184 pounds (i.e., 0.009*£20,000) and 276 pounds (i.e., 0.009*£30,000) in one year. This makes up 1.5% of the average yearly net wage in our sample (19,000 pounds).

[7] In this algorithm, each answer of the GHQ-12 questionnaire is associated to a coefficient. The sum of these coefficients, after adjusting for sex and age, is the utility score. See Serrano-Aguilar et al. (2009) for further details.

[8] EQ-5D scores refer to the health utility of an individual, assessed over five dimensions: mobility, pain and discomfort, self-care, anxiety and depression, and the ability to perform usual activities. Each of the five dimensions has three levels: no problems, some problems and major problems. Each combination of health states receives a different utility score. See euroqol.org for more information.

5.1.2 Robustness Checks

In this section, we submit our baseline estimates to an extensive sensitivity analysis.

Alternative IV strategies The exclusion restriction behind our instrument is that, conditional on the other covariates, changes in non-UK exports to non-UK markets are orthogonal to industry-specific shocks occurring in the UK. We believe this assumption to be plausible, given that our specification includes a comprehensive set of industry dummies, year dummies, and time-varying controls. Nevertheless, we now show that our main coefficient remains strikingly stable across a large set of alternative IV approaches, which deal with possible remaining correlation between the instrument and the error term. The results are reported in Table 4, panel a).

In row (1), we reconstruct our instrument excluding the US and Canada from the importing countries. These two economies are similar to the UK in various respects, and their business cycle is significantly correlated with that of the UK (Artis et al., 2005). Therefore, higher imports into these markets may be correlated with the error term, if they are triggered by demand shocks correlated with those occurring in the UK. In row (2) we do the same, but this time we also exclude the US and Canada from the exporting countries. This eliminates the additional concern that US and Canadian exports may be driven by some shocks originating in the UK. In both cases, our main evidence is unchanged, and the coefficient β_1 is remarkably close to the baseline estimate.

Next, we re-estimate our baseline specification excluding industries in which demand or technology shocks are more likely to be correlated across countries. Following Colantone and Crinò (2014), the excluded industries are: the five industries that are most sensitive to the business cycle, i.e. those characterized by the highest correlation between their own output and UK GDP (row 3);[9] the five most energy-intensive industries (row 4);[10]

[9]These industries are: Manufacture of coke, refined petroleum products and nuclear fuel (NACE 23); Manufacture of rubber and plastic products (NACE 25); Manufacture of radio, television and communication equipment and apparatus (NACE 32); Air transport (NACE 62); Post and telecommunications (NACE 64).

[10]These industries are: Manufacture of pulp, paper and paper products (NACE 21); Manufacture of coke, refined petroleum products and nuclear fuel (NACE 23); Manufacture of chemicals and chemical products (NACE 24); Manufacture of other non-metallic mineral products (NACE 26); Manufacture of basic metals

and the seven industries originally identified by Autor et al. (2013) as having experienced substantial fluctuations over the sample period across countries, due to technological innovations, housing booms, and the rapid growth of emerging economies (row 5).[11] Our coefficient of interest is always positive, significant, and essentially identical to the baseline estimate.

Finally, we use an alternative instrument that exploits variation in effective exchange rates both over time and across industries. We construct the instrument by weighting bilateral exchange rates with each partner country's share in UK imports. These shares are computed separately for each industry in 1995 and kept constant throughout. As a result, the instrument varies over time only due to movements in bilateral exchange rates, which are mostly driven by macroeconomic factors. It instead varies across industries only due to pre-sample differences in import shares. Accordingly, this instrument is unlikely to reflect domestic industry-specific shocks and is thus widely used in the empirical literature on the labor market effects of import competition (Revenga, 1992; Bertrand, 2004; Bernard et al., 2006; Cuñat and Guadalupe, 2009; Khandelwal, 2010; Lu and Ng, 2013). Using this instrument yields a coefficient that is remarkably close to our previous estimates (row 6).

Contemporaneous shocks and underlying trends So far, we have shown that our estimates are robust to several alternative instrumentation approaches. In this section, we estimate a number of very demanding specifications, which are obtained by augmenting our baseline IV regression (column 5 of Table 3) with large sets of fixed effects and time trends. These are meant to absorb remaining contemporaneous shocks and underlying trends, thereby further raising confidence in the validity of the exclusion restriction. The results are in Table 4, panels b) and c).

We start, in row (7), by replacing the year dummies with a full set of year-month dum-

(NACE 27).

[11] These industries are: Manufacture of textiles (NACE 17); Manufacture of wearing apparel; dressing and dyeing of fur (NACE 18); Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear (NACE 19); Manufacture of other non-metallic mineral products (NACE 26); Manufacture of basic metals (NACE 27); Manufacture of fabricated metal products, except machinery and equipment (NACE 28); Manufacture of office machinery and computers (NACE 30).

mies. In the BHPS, individuals are interviewed in different months. Given that mental health responds to seasonal factors such as the weather (e.g., Connolly, 2013), one may be concerned that our results are partly driven by the staggered timing of interviews in the BHPS. However, the inclusion of year-month dummies leaves our coefficient of interest unchanged.

Next, we include additional controls for contemporaneous shocks at the industry level. Following Colantone and Crinò (2014), in rows (8)-(13) we divide industries into five bins of equal size, based on the observed change over the sample period in the variable indicated in each row. Then, we augment our baseline specification by including a full set of interactions between the year dummies and dummies for all bins. The idea is that industries that have experienced different changes in a given observable characteristic may have also been exposed to different shocks. These interactions soak up all time-varying differences across industries belonging to different bins. Accordingly, identification now only comes from the remaining variation in import competition across industries belonging to the same bin, which are relatively homogeneous. In a similar vein, in rows (14) and (15) we include full sets of interactions between the year dummies and either 2-digit industry dummies or major occupation dummies. These interactions absorb shocks that hit all narrowly defined industries belonging to the same aggregate industry, or all minor occupations belonging to the same major occupational category. Strikingly, our evidence is unchanged across the board.

In rows (16)-(19), we extend the specification to allow for heterogeneous trends based on pre-existing industry characteristics. In particular, we augment our baseline regression by adding a full set of interactions between the year dummies and the initial value of the industry variables indicated in each row. In all cases, our main evidence is largely unchanged.

Placebo tests We now perform two placebo tests to further show that our results do not reflect underlying factors correlated with general health and import competition. The results are in Table 4, panel d). In row (20), the dependent variable is our indicator of physical health rather than GHQ-12. The coefficient on import competition is now negative, very

small and imprecisely estimated. This suggests that our results are unlikely to reflect underlying factors that correlate with import competition and the general health conditions of individuals. In row (21) we instead regress current mental health on future values of the import competition shock. In particular, we use observations on mental health between 1994 and 2001, and regress GHQ-12 at time t on the import competition shock evaluated between $t+1$ and $t+6$, thereby exploiting all our trade data between 1995 and 2007. The estimated coefficient is negative and not statistically significant, which further suggests that our results are not picking up common trends in imports and mental distress.

Sorting In panel e) of Table 4, we address concerns with the sorting of individuals across industries. As mentioned in Section 4, we use two complementary approaches. In row (22), we focus on individuals who stay in the same industry for two or more consecutive years, and add a different fixed effect for each individual-industry combination. Hence, in this specification, the coefficient β_1 is identified from variation in mental distress and import competition for a given worker while employed in the same industry. In row (23), we instead compute the import competition shock at the more aggregate 2-digit industry level, rather than at the 3-digit level as in all other specifications. The reason is that most of the switches in our sample occur across 3-digit industries within the same 2-digit aggregate industry. Our coefficient of interest remains positive, precisely estimated, and close to the baseline estimate. This suggests that the sorting of individuals across industries is not inducing any noteworthy bias in our estimates.

Alternative proxies for mental distress In Table 5, we finally show that our results are robust to the use of alternative measures of mental health. In row (1), we use the Caseness version of GHQ-12. The estimated coefficient is very close to our baseline estimate. In rows (2)-(4), we separately consider the three main components of GHQ-12 (based on the Likert scoring method), i.e., anxiety and depression, social dysfunction, and loss of confidence. All coefficients are positive and very precisely estimated, suggesting that import competition affects all dimensions of mental distress. Finally, in rows (5)-(16), we use as dependent

variables the twelve individual components of GHQ-12. All estimated coefficients are positive and statistically significant, which further suggests that our results are not driven by just a few components of mental distress.

5.1.3 Heterogeneity

In this section, we study whether the aggregate results presented above mask heterogeneity across individuals, sectors, and trading partners. The results are reported in Table 6. In panel a), we analyze the response of different groups of individuals to import competition. To this purpose, we interact IC_{jt-1} with dummies for males, self-employed workers, older individuals (above 50 years of age), long-tenure workers (more than 10 years in the same job), permanent and full-time employees. We instrument each interaction with the interaction between our instrument and the corresponding dummy. We include these new variables both individually (columns 1-6) and jointly (column 7). We find no statistically significant differences across individuals of different gender and age, nor across full-time and part-time employees or across permanent and temporary workers. Overall, this suggests that the impact of import competition on mental health is relatively homogeneous across different groups of individuals. Nevertheless, we find significantly smaller effects for long-tenure and self-employed workers which, respectively, have a stronger attachment to their firms and are more likely to operate in low tradable jobs that are little exposed to foreign competition.

Next, we study heterogeneity across sectors. To this purpose, we split the sample in two parts, corresponding to manufacturing and service industries, and estimate our baseline specification separately on each sub-sample. The results are reported in panel b). The two coefficients are of roughly the same size, but only the one estimated on service industries is statistically significant. This suggests that in an economy such as the UK, which is highly specialized in services, the effect of import competition is particularly significant for service workers.

Finally, in panel c) we study heterogeneity across trading partners. In particular, we an-

alyze whether imports from China, which have grown rapidly over the sample period, have different effects compared to imports from other countries. To this purpose, we replace IC_{jt-1} with two similarly defined variables, corresponding to import competition from China and other countries, respectively. As an instrument for Chinese import competition, we use Chinese exports to the rest of the world (i.e., excluding the UK). The estimated coefficients are positive and significant in both cases, but the one on import competition from other countries is more than three times larger. This result is in line with our previous evidence on manufacturing vs. service workers. In fact, despite its strong increase over the sample period, import competition from China is mostly contained to manufacturing industries, in which the UK is nowadays no longer specialized. Hence, Chinese import competition tends to have a smaller impact on individuals' mental distress as compared to competition from other countries.

5.2 Mechanisms

Having shown that import competition has a positive effect on individuals' mental distress, we now exploit the unique richness of our data set to study some of the mechanisms through which this effect occurs. Our strategy is similar to the one developed by Heckman et al. (2013) for studying how early childhood programs affect adult outcomes. In particular, we adopt a two-stage approach, in which we run OLS regressions of: (*i*) mental distress on proxies for each mechanism; and (*ii*) each of these proxies on import competition. If a given mechanism is relevant, both regressions should deliver a statistically significant coefficient.

It is widely documented that job switching and income changes have strong implications for mental health (see, e.g., Clark, 2003; McInerney et al., 2013; Farrè et al., 2015). At the same time, several studies show that import competition affects both of these labor market variables (see, in particular, Autor et al., 2013, 2014, 2015b). Following these strands of research, we start by analyzing these two channels, which we refer to as 'standard labor market mechanisms'. The results are reported in Table 7. In panel a), we con-

sider job switching. Specifically, we focus on four mutually exclusive groups of switchers, corresponding to workers who in a given year switch, respectively, to unemployment, other job statuses,[12] other industries, and other jobs within the same industry. In column (1), we regress GHQ-12 on the four dummy variables capturing each type of switching, plus all controls included in our baseline specification (see column 5 of Table 3). Consistent with previous studies, we find switching out of employment to be strongly positively correlated with mental distress. At the same time, changing industry or job within the same industry is associated with a reduction in mental distress. In columns (2)-(5), we regress each of the four dummies on IC_{jt-1} and the whole set of controls. The number of observations drops as we move across columns, since each specification is estimated on a sub-sample of the workers used in the preceding one. For instance, the regression in column (4) uses only the sub-sample of workers who have remained employed, thus excluding those who have switched out of employment. We find little evidence of a correlation between import competition and the likelihood of changing industry or job within the industry. Instead, consistent with previous studies, we find a statistically significant and positive correlation between import competition and the probability of leaving employment. Hence, these results shed light on a first mechanism through which import competition affects mental distress, that is, by raising the risk of job displacement.

In panel b), we consider the role of wage changes. Column (6) regresses GHQ-12 on the yearly percentage change in each worker's gross wage, along with all the usual controls. Clearly, this regression is only estimated on workers who remain employed for at least two consecutive years, because wages are not observed for those who switch out of employment. We still include in the specification the two dummies for job switching (between and within industries) since wage changes may partly reflect job changes. The results of this regression thus describe the effect of wage growth on mental distress, conditional on job status. Consistent with the existing literature, lower wage growth is strongly associated with higher mental distress also in our sample. As a second step, in column (7) we regress

[12]Other job statuses include retirement, government training scheme, family care, maternity leave, long-term sickness and disability, and full-time education.

wage growth on IC_{jt-1} and all the controls used in the previous specification. Similar to previous studies (e.g., Autor et al., 2013, 2014), we find a significantly negative coefficient on import competition. Hence, we have evidence of a second channel through which import competition operates. That is, for continuously employed workers import competition raises mental distress by inducing a smaller increase in earnings.

Next, we ask whether import competition acts through additional, non-standard mechanisms. In particular, consider a continuously employed worker with unchanged wage growth. May this worker suffer from import competition? If so, why? A first possible reason is that, even though the directly observable working conditions have remained unchanged, the worker is less satisfied with her job, for instance because this has become more stressful. We investigate this mechanism in Table 8. In columns (1) and (3), we regress GHQ-12 on dummies equal to 1 if the individual declares to be completely satisfied with her job, controlling for wage growth and the dummies for job switching. The two job satisfaction dummies—labeled (a) and (b)—are based on two questions in the BHPS that are essentially identical. While the first question has a larger coverage, the second is accompanied by follow-up questions, which investigate the determinants of job satisfaction and will be used in our subsequent regressions. In both cases, the results show that a reduction in job satisfaction is associated with a significant increase in mental distress. Then, in columns (2) and (4), we regress the job satisfaction variables on import competition and all controls. We find import competition to substantially lower job satisfaction, independent of the proxy we use. Overall, these results shed light on a third mechanism through which import competition worsens mental distress, i.e., by decreasing individuals' job satisfaction.

The previous result may reflect different dimensions of job satisfaction. The BHPS asks individuals specific questions about several dimensions, including satisfaction with workload (hours worked), use of initiative, job safety, and relation with boss. To study which aspects are more relevant, we have repeated the above estimations replacing overall job satisfaction (variable b) with dummies equal to 1 if the individual declares to be completely satisfied with a given dimension. We have found that a significant aspect is workload. The

associated results are reported in columns (5) and (6), which show that import competition makes people less satisfied with their workload, and that this, in turn, is associated with an increase in mental distress.[13]

The last piece of evidence suggests that import competition makes people more stressed, by inducing firms to switch to longer and more demanding working schedules. In the next columns, we provide additional evidence that this is indeed the case. In column (7), we use the information on the total number of hours worked reported in the BHPS. When we regress the yearly percentage change in this variable on import competition, we find a positive and significant coefficient, suggesting that import competition implies an increase in total hours worked. To provide further evidence, in columns (8)-(11) we exploit four BHPS questions on job related stress. Coverage is limited, as these questions were only asked in the year 2004. The dependent variables are dummies taking the value of 1 if the worker reports being stressed much/most/all of the time, according to four criteria. In particular, the four questions are related to: (1) worrying about job problems after work; (2) finding it difficult to unwind at the end of the day; (3) feeling used up, and (4) feeling exhausted after work. Higher import competition is significantly associated with higher stress according to the first two measures, while for the other two the coefficients are positive but not statistically significant. By and large, all these findings hint to a significant role of import competition in increasing pressure on workers, who then become more stressed. This has a negative implication for their job satisfaction, and worsens their mental health.

The final mechanism we consider is related to the role of expectations. Indeed, even conditional on current job status, wage growth and job satisfaction, import competition may raise mental distress by worsening expectations about the future, along several dimensions. We exploit three questions about future expectations contained in the BHPS. The first one asks each individual whether she expects a job promotion with her current employer over the next year.[14] The second question is instead about expectations on get-

[13] Results on the other dimensions of job satisfaction are available upon request.

[14] Böckerman and Maliranta (2013) use a similar measure of expectations in a study on outsourcing in the context of Finland.

ting job training over the same period. In both cases, we construct a dummy variable taking the value of 1 in case of a positive answer. The third question we consider is about financial expectations. Specifically, we use a dummy equal to 1 if the individual expects the next year to be better than the current year in financial terms. In columns (1), (3) and (5) of Table 9, we regress GHQ-12 on each of these dummies for future expectations. We include our controls for job switching, wage growth, and now also for job satisfaction, so that results are conditional on the level of satisfaction with the current job. We always find better expectations to be associated with lower mental distress. Moreover, when regressing the expectation dummies on import competition, we always obtain negative and significant coefficients (columns 2, 4 and 6). Such evidence reveals a fourth mechanism through which import competition worsens mental health. That is, higher import competition is associated with worsened expectations about the future, which in turn are related to higher mental distress.

It is likely that the worsening of job prospects and financial expectations induced by import competition gets reflected in observable changes in individuals' behavior. In particular, individuals may decide to accumulate more savings for precautionary motives and change their consumption behavior accordingly. The BHPS contains information about consumption and saving decisions, which can be used to study how import competition influences individuals' behavior. Specifically, in column (7) we regress the percentage change in monthly savings on import competition and all control variables. The coefficient on import competition is positive and statistically significant, indicating that an increase in import competition does indeed lead individuals to accumulate more savings. Consistent with this result, in column (8) we also find import competition to reduce purchases of durable goods. The dependent variable in this case is the sum of 12 dummies, each taking the value of 1 if the individual has purchased a given durable good during the year.[15]

To sum up, in this section we have provided evidence that import competition increases

[15]The 12 durable goods considered are: color TV, video recorder, satellite dish, fridge freezer, washing machine, tumble drier, dish washer, microwave oven, home computer, cable TV, compact disc player, telephone. Results on each specific good are available upon request.

individuals' mental distress through four different mechanisms: (1) an increase in the probability of job displacement, (2) lower wage growth, (3) lower job satisfaction, and (4) worsened expectations about the future. How much of the overall effect of import competition on mental distress is mediated through these channels? In order to answer this question, we have estimated a system of equations allowing to simultaneously account for the role of all mediators. In the spirit of the traditional mediation analysis (e.g., Sobel, 1982; Baron and Kenny, 1986), this methodology essentially compares the coefficient on import competition in a regression without mediators, to the one obtained in a regression where mediators are added. The dependent variable is GHQ-12 in both cases. The results suggest that the identified mechanisms mediate a non-negligible 26% of the overall effect of import competition on mental distress.

6 Conclusion

We have studied the effect of import competition on mental distress, using a unique data set that combines individual-level information on the mental health of British workers with industry-level information on import competition, for more than 100 industries over 1995-2007. Our results show that import competition has a strong positive effect on mental distress. A one standard deviation increase in import competition in a given industry induces a 1.2 p.p. increase in the mental distress of workers employed in that industry, explaining 12.5% of the within-individual standard deviation in mental health. Mapping mental health scores into a utility index we have found that, following a one standard deviation increase in import competition, the average worker would need a yearly monetary compensation of 184-276 pounds (approximately 1.5% of the yearly net wage) to make up for her utility loss.

We have studied several mechanisms through which import competition works. Besides standard labor market channels, whereby import competition raises the probability of job displacement and lowers wage growth, we have documented that import competition also affects continuously employed individuals, by increasing stress on the job and

worsening expectations about the future. Overall, our results shed light on a new trade adjustment cost, which is *hidden* yet economically important. Hence, this study suggests that the response of individuals' mental health to globalization should be taken into account for an accurate assessment of the net welfare gains from trade.

References

[1] Acemoglu, D., D. Autor, D. Dorn, G. Hanson and B. Price, 2015, 'Import Competition and the Great U.S. Employment Sag of the 2000s,' *Journal of Labor Economics*, forthcoming.

[2] Adda, J. and Y. Fawaz, 2015, 'Trade-Induced Mortality,' *Mimeo*, Bocconi University.

[3] Artis, M., M. Marcellino and T. Proietti, 2005, 'Dating the Euro Area Business Cycle,' in Reichlin, L. (ed.), *The Euro Area Business Cycle: Stylized Facts and Measurement Issues*, CEPR.

[4] Autor, D., D. Dorn and G. Hanson, 2013, 'The China Syndrome: Local Labor Market Effects of Import Competition in the United States,' *American Economic Review*, 103, pp. 2121-2168.

[5] Autor, D., D. Dorn and G. Hanson, 2014, 'Trade Adjustment: Worker Level Evidence,' *Quarterly Journal of Economics*, 129, pp. 1799-1860.

[6] Autor, D., D. Dorn and G. Hanson, 2015a, 'The China Shock: Learning from Labor Market Adjustment to Large Changes in Trade,' *Mimeo*, University of Zurich.

[7] Autor, D., D. Dorn and G. Hanson, 2015b, 'Untangling Trade and Technology: Evidence from Local Labor Markets,' *Economic Journal*, 125, pp. 621-646.

[8] Baron, R.M. and D.A. Kenny, 1986, 'The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations,' *Journal of Personality and Social Psychology*, 51, pp. 1173-1182.

[9] Bernard, A., J. Jensen and P. Schott, 2006, 'Survival of the Best Fit: Exposure to Low-Wage Countries and the (Uneven) Growth of U.S. Manufacturing Plants,' *Journal of International Economics*, 68, pp. 219-237.

[10] Bertrand, M., 2004, 'From the Invisible Handshake to the Invisible Hand? How Import Competition Changes the Employment Relationship,' *Journal of Labor Economics*, 22, pp. 723766.

[11] Bloom, N., M. Draca and J. Van Reenen, 2016, 'Trade-Induced Technical Change: The Impact of Chinese Imports on Innovation, IT and Productivity,' *Review of Economic Studies*, 83, pp. 87-117.

[12] Böckerman, P. and M. Maliranta, 2013, 'Outsourcing, Occupational Restructuring, and Employee Well-Being: Is There a Silver Lining?' *Industrial Relations*, 52, pp. 878-914.

[13] Broda, C. and D. Weinstein, 2006, 'Globalization and the Gains from Variety,' *Quarterly Journal of Economics*, 121, pp. 541-585.

[14] Clark, A., 2003, ''Unemployment as a Social Norm: Psychological Evidence from Panel Data,' *Journal of Labor Economics*, 21, pp. 323-351.

[15] Colantone, I. and R. Crinò, 2014, 'New Imported Inputs, New Domestic Products,' *Journal of International Economics*, 92, pp. 147-165.

[16] Connolly, M., 2013, 'Some Like It Mild and Not Too Wet: The Influence of Weather on Subjective Well-Being,' *Journal of Happines Studies*, 14, pp. 457-473.

[17] Cooper, C. and P. Dewe, 2008, 'Well-Being - Absenteeism, Presenteeism, Costs and Challenges,' *Occupational Medicine*, 58, pp. 522-524.

[18] Cornaglia, F., A. Leigh and N. Feldman, 2014, 'Crime and Mental Wellbeing,' *Journal of Human Resources*, 49, pp. 110-140.

[19] Crinò, R. and P. Epifani, 2014a, 'The Skill Bias of the U.S. Trade Deficit,' *CEPR Discussion Paper 9899*.

[20] Crinò, R. and P. Epifani, 2014b, 'Trade Imbalances, Export Structure and Wage Inequality,' *Economic Journal*, 124, pp. 507-539.

[21] Cuñat, V. and M. Guadalupe, 2009, 'Globalization and the Provision of Incentives Inside the Firm: The Effect of Import Competition,' *Journal of Labor Economics*, 27, pp. 179212.

[22] Dauth, W., S. Findeisen and J. Suedekum, 2014, 'The Rise of the East and the Far East: German Labor Markets and Trade Integration,' *Journal of the European Economic Association*, 12, pp. 1643-1675.

[23] Di Tella, R., S. Galiani and E. Schargrodsky, 2007, 'The Formation of Beliefs: Evidence from the Allocation of Land Titles to Squatters,' *Quarterly Journal of Economics*, 122, pp. 209-241.

[24] Dustmann, C. and F. Fasani, 2015, 'The Effect of Local Area Crime on Mental Health,' *Economic Journal*, forthcoming.

[25] Farrè, L., F. Fasani and H. Mueller, 2015, 'Feeling Useless: The Effect of Unemployment on Mental Health in the Great Recession,' *IZA Discussion Paper 9235*.

[26] Feenstra, R.C., 1994, 'New Product Varieties and the Measurement of International Prices,' *American Economic Review*, 84, pp. 157-177.

[27] Goldberg, D., 1978, *Manual of the General Health Questionnaire*, Windsor: National Foundation.

[28] Goldberg, P., A. Khandelwal, N. Pavcnik and P. Topalova, 2010, 'Imported Intermediate Inputs and Domestic Product Growth: Evidence from India,' *Quarterly Journal of Economics*, 125, pp. 1727-1767.

[29] Heckman, J., R. Pinto and P. Savelyev, 2013, 'Understanding the Mechanisms through Which an Influential Early Childhood Program Boosted Adult Outcomes,' *American Economic Review* 103, pp. 2052-2086.

[30] Hummels, D., J. Munch, R. Jorgensen and C. Xiang, 2014, 'The Wage Effects of Offshoring: Evidence from Danish Matched Worker-Firm Data,' *American Economic Review*, 104, pp. 1597-1629.

[31] Hummels, D., J. Munch and C. Xiang, 2015, 'No Pain, No Gain: The Effects of Exports on Job Injury and Sickness,' *Mimeo*, Purdue University.

[32] Katz, K., J. Kling and J. Liebman, 2001, 'Moving to Opportunity in Boston: Early Results of a Randomized Mobility Experiment,' *Quarterly Journal of Economics*, 116, pp. 607-654.

[33] Khandelwal, A.K., 2010, 'The Long and Short (of) Quality Ladders,' *Review of Economic Studies*, 77, pp. 1450-1476.

[34] Kling J., J. Liebman and L. Katz, 2007, 'Experimental Analysis of Neighbourhood Effects,' *Econometrica*, 75, pp. 83-119.

[35] Levine, D. and D. Rothman, 2006, 'Does Trade Affect Child Health,' *Journal of Health Economics*, 25, pp. 538-554.

[36] Lu, Y. and T. Ng, 2013, 'Import Competition and Skill Content in U.S. Manufacturing Industries,' *Review of Economics and Statistics*, 95, pp. 14041417.

[37] Ludwig J., G. Duncan, L. Gennetian, L. Katz, R. Kessler, J. Kling and L. Sanbonmatsu, 2012, 'Neighborhood Effects on the Long-Term Well-Being of Low-Income Adults,' *Science*, 21, 337, pp. 1505-1510.

[38] Marcus, J., 2013, 'The Effect of Unemployment on the Mental Health of Spouses - Evidence from Plant Closures in Germany,' *Journal of Health Economics*, 32, pp. 546-558.

[39] McCabe, C., K. Claxton and A.J. Culyer, 2008, 'The NICE Cost-Effectiveness Treshold,' *Pharmacoeconomics*, 26, pp. 733-744.

[40] McCrone, P., S. Dhanasiri, A. Patel, M. Knapp and S. Lawton-Smith, 2008, *Paying the Price: The Cost of Mental Health Care in England to 2026*, King's Fund.

[41] McInerney, M., J. Mellor and L. Nicholas, 2013, 'Recession Depression: Mental Health Effects of the 2008 Stock Market Crash,' *Journal of Health Economics*, 32, pp. 1090-1104.

[42] McManus, T.C. and G. Schaur, 2015a, 'The Effects of Import Competition on Health in the Local Economy', *Mimeo*, Xavier University.

[43] McManus, T.C. and G. Schaur, 2015b, 'The Effects of Import Competition on Worker Health', *Mimeo*, Xavier University.

[44] Melitz, M., 2003, 'The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity,' *Econometrica*, 71, pp. 1695-1725.

[45] Oster, E., 2012, 'Routes of Infection: Exports and HIV Incidence in Sub-Saharan Africa,' *Journal of the European Economic Association*, 10, pp. 1025-1058.

[46] Owen, A. and S. Wu, 2007, 'Is Trade Good for Your Health,' *Review of International Economics*, 15, pp. 660-682.

[47] Pavcnik, N., 2002, 'Trade Liberalization, Exit, and Productivity Improvements: Evidence from Chilean Plants,' *Review of Economic Studies*, 69, pp. 245-276.

[48] Pierce, J.R. and P.K. Schott, 2015, 'Trade Liberalization and Mortality: Evidence from U.S. Counties,' *mimeo*, Yale School of Management.

[49] Revenga, A.L., 1992, 'Exporting Jobs? The Impact of Import Competition on Employment and Wages in U.S. Manufacturing,' *Quarterly Journal of Economics*, 107, pp. 255284.

[50] Ruhm, C., 2000, 'Are Recessions Good for Your Health?,' *Quarterly Journal of Economics*, 115, pp. 617-650.

[51] Serrano-Aguilar, P., Ramallo Fariña, Y., Del Mar Trujillo-Martin, M., Munoz-Navarro, S.R., Perestelo Perez, L. and C. De Las Cuevas-Castresana, 2009, 'The relationship among mental health status (GHQ-12), health related quality of life (EQ-5D) and health-state utilities in a general population,' *Epidemiology and Psychiatric Sciences*, 18, pp. 229-239.

[52] Schwandt, H., 2014, 'Wealth Shocks and Health Outcomes: Evidence from Stock Market Fluctuations,' *CEP Discussion Paper 1281*.

[53] Smith, J., 1999, 'Healthy Bodies and Thick Wallets: The Dual Relation between Health and Economic Status,' *Journal of Economic Perspectives*, 13, pp. 145-166.

[54] Sobel, M.E., 1982, 'Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models,' *Sociological Methodology*, 13, pp. 290-312.

[55] Sullivan, D. and T. von Wachter, 2009, 'Job Displacement and Mortality: An Analysis Using Administrative Data,' *Quarterly Journal of Economics*, 124, pp. 1265-1306.

Table 1 - Descriptive Statistics on the Individual-Level Variables

	Mean	Overall Std. Dev.	Within-Individual Std. Dev.	Obs.		Mean	Overall Std. Dev.	Obs.
GHQ-12 (Likert score)	30.0	14.2	9.6	52781	Never married	17.0	37.5	52753
GHQ 1 (Anxiety and depression)	30.8	20.1	13.0	52781	Self-employed	10.9	31.2	52779
GHQ 2 (Social dysfunction)	33.9	12.7	9.5	52781	Employed	82.2	38.2	52779
GHQ 3 (Loss of confidence)	17.1	20.8	13.1	52781	Unemployed	1.7	12.9	52779
GHQ-12 (Caseness score)	13.8	23.6	16.6	52781	Retired	1.6	12.4	52779
Physical health	7.8	9.9	-	52781	Maternity leave	0.8	8.8	52779
Age	41.1	12.2	-	52778	Family care	1.1	10.6	52779
Male	50.3	50.0	-	52781	FT student, school	0.7	8.5	52779
Higher degree	4.1	19.8	-	51805	LT sick, disabled	0.6	7.6	52779
First degree	15.0	35.7	-	51805	GVT training scheme	0.1	2.6	52779
Teaching QF	2.3	15.0	-	51805	Other job status	0.3	5.5	52779
Other higher QF	31.4	46.4	-	51805	Household size	3.0	1.3	52781
Nursing QF	0.9	9.6	-	51805	Single non-elderly	8.4	27.8	52781
GCE A levels	12.5	33.1	-	51805	Single elderly	0.8	9.0	52781
GCE O levels or equivalent	17.2	37.7	-	51805	Couple, no children	27.4	44.6	52781
Commercial QF, no O levels	1.7	12.8	-	51805	Couple, dep. children	37.7	48.5	52781
CSE grade 2-5, scot grade 4-5	3.3	17.9	-	51805	Couple, non-dep. children	14.9	35.6	52781
Apprenticeship	1.0	9.9	-	51805	Lone parent, dep. children	4.3	20.3	52781
Other QF	0.5	6.8	-	51805	Lone parent, non-dep. children	3.7	18.9	52781
No QF	10.0	30.0	-	51805	2+ unrelated adults	1.4	11.9	52781
Still at school, no QF	0.2	4.2	-	51805	Other households	1.4	11.6	52781
Married	59.5	49.1	-	52753	Owned house or on mortgage	82.7	37.8	52549
Leaving as couple	14.7	35.4	-	52753	Shared house ownership	0.4	6.5	52549
Widowed	1.3	11.4	-	52753	Rented house	15.6	36.2	52549
Divorced	5.5	22.9	-	52753	Rent-free house	1.0	10.1	52549
Separated	2.0	13.9	-	52753	Other house types	0.3	5.1	52549

Table 2 - Descriptive Statistics on Import Competition

Industries with lowest import competition shock	
Manufacture of steam generators, exc. central heating hot water boilers	-51.4
Production of salt	-40.1
Electricity, gas and water supply	-25.7
Water transport	-23.5
Manufacture of wooden containers	-20.4
Industries with highest import competition shock	
Manufacture of pesticides and other agro-chemical products	51.6
Manufacture of prepared animal feeds	55.5
Manufacture of refined petroleoum products	72.9
Manufacture of television, radio transmitters and phone apparatus	82.8
Mining and agglomeration of hard coal	87.3

The table reports industry-level averages of *IC* over the period 2001-2007.

Table 3 - Baseline Estimates

	(1)	(2)	(3)	(4)	(5)
IC	0.217***	0.493***	0.920***	0.729***	1.201***
	[0.014]	[0.129]	[0.193]	[0.122]	[0.103]
Estimator	OLS	2SLS	2SLS	2SLS	2SLS
Individual controls	no	no	yes	yes	yes
Household controls	no	no	yes	yes	yes
Industry controls	no	no	no	no	yes
Individual effects	yes	yes	yes	yes	yes
Industry effects	no	no	no	yes	yes
Year effects	no	no	no	yes	yes
Obs.	50154	50154	48510	48510	44043
R2	0.52	0.52	0.52	0.53	0.53
First-stage results					
World Exp.	-	0.310***	0.160***	0.250***	0.206***
	-	[0.021]	[0.009]	[0.027]	[0.009]
Kleibergen-Paap F-Statistic	-	222.8	321.9	85.4	511.1

The dependent variable is *GHQ-12*, normalized between 0 and 100. *IC* is the 5-year % change in import competition (the ratio of imports over apparent consumption) in the industry in which a given worker was employed during the previous year. Individual controls include: log age and its square, physical health, and dummies for education level, marital status and job status. Household controls include: household size and dummies for household type and home ownership. Industry controls include the 5-year % change in real output, output price, employment share of high-skill workers, value added, and export intensity. All controls refer to the year *t-1*; continuous variables are normalized by their standard deviation. *World Exp.* is the 5-year % change in non-UK exports to the rest of the world, defined for each worker's past industry of employment. Standard errors are corrected for two-way clustering at the individual and industry level. ***, **, * = indicate significance at the 1, 5 and 10% level, respectively.

Table 4 - Robustness Checks

	Coeff.	Std. Err.	Obs.	R2	KP F-Stat.
a) Alternative IV strategies					
1) Alt. instr.: excl. US and Canada from the importers	1.373***	[0.077]	44043	0.53	405.7
2) Alt. instr.: excl. US and Canada also from the exporters	1.434***	[0.102]	44043	0.53	460.4
3) Excl. industries most correlated with UK GDP	1.196***	[0.111]	42431	0.53	301.7
4) Excl. most energy-intensive industries	1.233***	[0.105]	43000	0.53	704.8
5) Excl. most volatile industries (Autor et al., 2013)	1.183***	[0.103]	42811	0.53	450.8
6) Alt. instr: industry-specific effective exchange rates	1.894***	[0.396]	44043	0.52	53.5
b) Contemporaneous shocks					
7) Year-month dummies	1.210***	[0.097]	44043	0.53	516.0
8) *Sector*-year dummies: Output growth (2001-2007)	1.170***	[0.225]	44043	0.53	67.8
9) *Sector*-year dummies: Employment growth (2001-2007)	1.171***	[0.092]	44043	0.53	456.4
10) *Sector*-year dummies: Material intensity growth (2001-2007)	1.325***	[0.168]	43915	0.53	233.9
11) *Sector*-year dummies: Capital intensity growth (2001-2007)	1.196***	[0.119]	43910	0.53	1370.9
12) *Sector*-year dummies: Skill intensity growth (2001-2007)	1.002***	[0.087]	44043	0.53	214.7
13) *Sector*-year dummies: Labor productivity growth (2001-2007)	1.966***	[0.277]	44043	0.52	192.7
14) 2-digit industry x year dummies	1.216***	[0.100]	44043	0.53	1222.5
15) Major occupation x year dummies	1.195***	[0.141]	38275	0.52	495.2
c) Underlying trends based on pre-existing industry characteristics					
16) Year dummies x initial (2001) import penetration	2.537***	[0.251]	42767	0.52	118.4
17) Year dummies x initial (2001) industry characteristics	1.807***	[0.251]	42767	0.53	45.2
18) Year dummies x initial (1998-2000) average mental health in the industry	1.166***	[0.112]	42777	0.53	423.6
19) Year dummies x initial (1998-2000) average individual characteristics in the industry	1.687***	[0.442]	42777	0.53	138.6
d) Placebo tests					
20) Dep. var.: Physical health	-0.145	[0.101]	45960	0.72	519.5
21) Mental health and future import competition	-0.916	[0.638]	42228	0.52	40.4
e) Sorting					
22) Individual-industry fixed effects	0.955***	[0.230]	26855	0.57	767.2
23) IC at the 2-digit industry level	1.104***	[0.087]	44045	0.53	539.6

The dependent variable is *GHQ-12*. Coefficients refer to the explanatory variable *IC*. All regressions include the same controls as in column (5) of Table 3 and are estimated by 2SLS. Standard errors are corrected for two-way clustering at the individual and industry level. ***, **, * = indicate significance at the 1, 5 and 10% level, respectively.

Table 5 - Alternative Proxies for Mental Distress

	Coeff.	Std. Err.	Obs.	R2	KP F-Stat.
1) GHQ-12 (Caseness score)	1.390***	[0.202]	44043	0.48	511.1
2) GHQ 1 (Anxiety and depression)	1.193***	[0.151]	44043	0.56	511.1
3) GHQ 2 (Social dysfunction)	1.345***	[0.116]	44043	0.41	511.1
4) GHQ 3 (Loss of confidence)	0.787***	[0.157]	44043	0.58	511.1
5) GHQ-12 (Have you been able to concentrate on whatever you're doing?)	1.432***	[0.204]	44043	0.35	511.1
6) GHQ-12 (Have you lost much sleep over worry?)	0.572**	[0.217]	44043	0.50	511.1
7) GHQ-12 (Have you felt that you were playing a useful part in things?)	1.139***	[0.162]	44043	0.36	511.1
8) GHQ-12 (Have you felt capable of making decisions about things?)	1.338***	[0.177]	44043	0.37	511.1
9) GHQ-12 (Have you felt constantly under strain?)	0.979***	[0.192]	44043	0.49	511.1
10) GHQ-12 (Have you felt you couldn't overcome your difficulties?)	0.624***	[0.174]	44043	0.48	511.1
11) GHQ-12 (Have you been able to enjoy your normal day-to-day activities?)	1.142***	[0.168]	44043	0.35	511.1
12) GHQ-12 (Have you been able to face up to problems?)	1.256***	[0.159]	44043	0.36	511.1
13) GHQ-12 (Have you been feeling unhappy or depressed?)	2.598***	[0.278]	44043	0.49	511.1
14) GHQ-12 (Have you been losing confidence in yourself?)	0.432**	[0.188]	44043	0.54	511.1
15) GHQ-12 (Have you been thinking of yourself as a worthless person?)	1.143***	[0.173]	44043	0.55	511.1
16) GHQ-12 (Have you been feeling reasonably happy, all things considered?)	1.763***	[0.207]	44043	0.37	511.1

The dependent variables are indicated in the rows' labels and are normalized between 0 and 100. Coefficients refer to the explanatory variable *IC* . All regressions include the same controls as in column (5) of Table 3 and are estimated by 2SLS. Standard errors are corrected for two-way clustering at the individual and industry level. ***, **, * = indicate significance at the 1, 5 and 10% level, respectively.

Table 6 - Heterogeneity

	a) Individual Characteristics							b) Manufacturing vs. Services		c) China vs. Other Countries
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
IC	1.152***	1.281***	1.348***	1.390***	1.087***	1.228***	1.095***			
	[0.103]	[0.104]	[0.145]	[0.124]	[0.331]	[0.117]	[0.274]			
IC * Male	0.088						0.080			
	[0.134]						[0.204]			
IC * Self-employed		-1.575***					-5.859***			
		[0.417]					[0.587]			
IC * Over 50			-0.530*				-0.406			
			[0.284]				[0.377]			
IC * Long tenure				-0.953***			-0.942**			
				[0.326]			[0.344]			
IC * Permanent					0.062		0.431			
					[0.339]		[0.353]			
IC * Full Time						-0.148	-0.227			
						[0.116]	[0.240]			
Dummy over 50			0.317				0.496*			
			[0.222]				[0.251]			
Dummy long tenure				1.328***			1.294***			
				[0.145]			[0.148]			
Dummy permanent					1.346***		1.177***			
					[0.145]		[0.156]			
Dummy full time						0.846***	0.757***			
						[0.087]	[0.139]			
IC (Manufacturing sub-sample)								1.473		
								[0.948]		
IC (Services sub-sample)									1.228**	
									[0.483]	
IC from China										0.419***
										[0.099]
IC from other countries										1.440***
										[0.201]
Obs.	44043	44043	44042	38294	44041	43674	38061	6129	37097	33075
R2	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.59	0.52	0.54
Kleibergen-Paap F-Statistic	175.2	204.2	308.3	215.3	260.1	240.7	56.8	56.6	729.7	42.8

The dependent variable is *GHQ-12*. All regressions include the same controls as in column (5) of Table 3 and are estimated by 2SLS. Standard errors are corrected for two-way clustering at the individual and industry level. ***, **, * = indicate significance at the 1, 5 and 10% level, respectively.

Table 7 - Mechanisms: Job Switching and Wage Growth

	a) Job switching					b) Wage growth	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Dummy for switching to:					
	GHQ-12	Unemployment	Other job status	Other industry	Other job	GHQ-12	Wage growth
Switch to unemployment	6.599***					-	-
	[0.419]					-	-
Switch to other job statuses	0.929***					-	-
	[0.230]					-	-
Switch to a different industry	-1.003***					-0.894***	0.005
	[0.104]					[0.093]	[0.004]
Switch to another job in the same industry	-0.296***					-0.243**	0.013***
	[0.104]					[0.101]	[0.002]
Wage growth		0.000	0.002***	0.002	0.003	-0.814***	
		[0.001]	[0.001]	[0.003]	[0.003]	[0.068]	
IC							-0.003**
							[0.001]
Obs.	43273	50620	49782	46988	30911	33935	34242
R2	0.53	0.33	0.34	0.44	0.45	0.53	0.15

The dependent variables are indicated in columns' headings. All regressions include the same controls as in column (5) of Table 3 and are estimated by OLS. Standard errors are corrected for two-way clustering at the individual and industry level. ***, **, * = indicate significance at the 1, 5 and 10% level, respectively.

Table 8 - Mechanisms: Job Satisfaction

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	GHQ-12	Job Sat Overall (a)	GHQ-12	Job Sat Overall (b)	GHQ-12	Job Sat Hours	Change in Tot Hours	Worry About Job	Difficult to Unwind	Feel Used Up	Feel Exhausted
Switch to a different industry	-0.636***	0.058***	-1.179***	0.062***	-1.682***	0.031***	0.103**	-0.005	-0.031***	-0.033***	-0.041***
	[0.121]	[0.006]	[0.285]	[0.008]	[0.233]	[0.008]	[0.044]	[0.005]	[0.006]	[0.007]	[0.007]
Switch other job same ind.	-0.267**	0.020***	-0.257	0.028***	-1.048***	0.012**	0.024	-0.004	0.002	-0.014	-0.025***
	[0.116]	[0.005]	[0.524]	[0.008]	[0.143]	[0.005]	[0.023]	[0.003]	[0.005]	[0.009]	[0.006]
Wage growth	-0.520***	0.043***	-0.215	0.049***	0.207	-0.020***	1.418***	0.003	0.017***	0.027***	0.014***
	[0.091]	[0.004]	[0.319]	[0.006]	[0.217]	[0.005]	[0.144]	[0.008]	[0.004]	[0.005]	[0.004]
Job sat overall (a)	-6.784***										
	[0.163]										
Job sat overall (b)			-7.415***								
			[0.742]								
Job sat hours					-4.730***						
					[0.236]						
IC		-0.008***		-0.014***		-0.006***	0.065***	0.172**	0.081***	0.046	0.066
		[0.001]		[0.003]		[0.002]	[0.014]	[0.074]	[0.026]	[0.064]	[0.059]
Obs.	28775	28774	4353	4418	6016	6073	30893	5162	5162	5159	5160
R2	0.57	0.50	0.69	0.84	0.67	0.83	0.21	0.05	0.05	0.05	0.05

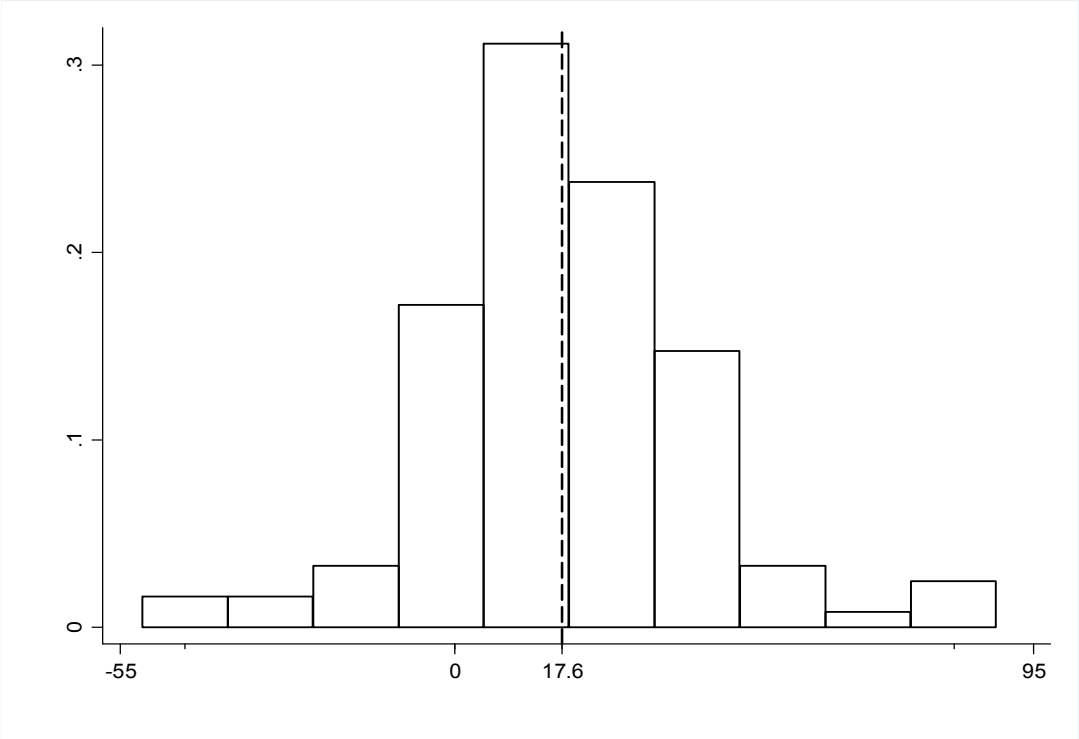
The dependent variables are indicated in columns' headings. All regressions include the same controls as in column (5) of Table 3 and are estimated by OLS. Standard errors are corrected for two-way clustering at the individual and industry level. ***, **, * = indicate significance at the 1, 5 and 10% level, respectively.

Table 9 - Mechanisms: Expectations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	GHQ-12	Exp. Job Prom.	GHQ-12	Exp. Train. on Job	GHQ-12	Exp. Financial	Change in Savings	Purchase of Durables
Switch to a different industry	-0.696***	0.018***	-0.716***	0.028***	-0.568***	0.032***	0.028	-0.084
	[0.150]	[0.004]	[0.131]	[0.005]	[0.127]	[0.006]	[0.027]	[0.140]
Switch other job same ind.	-0.297**	-0.003	-0.288**	0.022***	-0.301**	0.004	0.033**	0.174
	[0.115]	[0.004]	[0.107]	[0.003]	[0.122]	[0.008]	[0.013]	[0.109]
Wage growth	-0.454***	0.000	-0.465***	0.018***	-0.544***	-0.014**	0.195***	0.234*
	[0.099]	[0.004]	[0.100]	[0.004]	[0.091]	[0.007]	[0.010]	[0.124]
Job sat overall (a)	-6.673***	0.049***	-6.671***	0.059***	-6.682***	0.007	0.024**	0.037
	[0.178]	[0.004]	[0.168]	[0.004]	[0.145]	[0.004]	[0.011]	[0.119]
Expectations: job promotion	-0.850***							
	[0.173]							
Expectations: training on job			-0.362***					
			[0.081]					
Expectations: financial					-0.274***			
					[0.092]			
IC		-0.003***		-0.004**		-0.004**	0.036***	-0.146***
		[0.001]		[0.001]		[0.002]	[0.007]	[0.039]
Obs.	27209	27208	27730	27729	27934	27933	9457	28622
R2	0.58	0.46	0.58	0.56	0.58	0.46	0.20	0.35

The dependent variables are indicated in columns' headings. *Purchase of Durables* is the sum of 12 dummies and is normalized between 0 and 100. Each dummy takes the value of 1 if the individuals have purchased a given durable good during the year. The 12 durable goods considered are: colour TV, video recorder, satellite dish, fridge freezer, washing machine, tumble drier, dish washer, microwave oven, home computer, cable TV, compact disc player, telephone. All regressions include the same controls as in column (5) of Table 3 and are estimated by OLS. Standard errors are corrected for two-way clustering at the individual and industry level. ***, **, * = indicate significance at the 1, 5 and 10% level, respectively.

Figure 1 - Distribution of the Import Competition Shock across Industries



The figure reports industry-level averages of *IC* over the period 2001-2007.

Table A1 - GHQ Questions and Answers

GHQ Index	Question
	Have you recently:
GHQ 1: Anxiety and depression	1) lost much sleep over worry?
	2) felt constantly under strain?
	3) felt you couldn't overcome your difficulties?
	4) been feeling unhappy or depressed?
GHQ 2: Social dysfunction	5) been able to concentrate on whatever you're doing?
	6) felt that you were playing a useful part in things?
	7) felt capable of making decisions about things?
	8) been able to enjoy your normal day-to-day activities?
	9) been able to face up to problems?
	10) been feeling reasonably happy, all things considered?
GHQ 3: Loss of confidence	11) been losing confidence in yourself?
	12) been thinking of yourself as a worthless person?
	Answer:
	not at all; no more than usual; rather more than usual; much more so than usual