Labour market impacts of the China shock: Why the tide of Globalisation did not lift all boats[☆]

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ABSTRACT

The 1990s and 2000s saw a dramatic expansion in global goods trade. China rapidly emerged as the world's leading exporter while manufacturing employment in many high-income countries plummeted. Guided by textbook models that assumed frictionless labour markets and balanced trade, economists long maintained the view that trade had only modest labour market impacts and was not an important contributor to rising inequalities in high-income countries. We review recent evidence on the impacts of rapidly rising import competition from China on a broad range of outcomes in high-income countries. Import competition led to employment and wage losses that were heavily concentrated among the employees of exposed industries and individuals residing in local labour markets where such industries clustered, while consumer gains from lower goods prices were much more evenly distributed in the population. The disruptive effects of trade were particularly salient in countries such as the United States and the United Kingdom where a rapid growth of imports did not coincide with a commensurate expansion of own exports. Local labour markets facing greater import competition also experienced deteriorations in terms of health outcomes, crime, and family structures, and they became more likely to support far right politicians. We discuss several policy options to support the losers from globalisation.

1. Introduction

The popular introductory economics textbook *Principles of Economics* (Mankiw 2021) states the principle that "trade can make everyone better off." This premise is based on the notion that international trade allows countries to specialize in the production of goods for which they possess comparative advantage, which results in efficiency gains, lower prices, and higher average real incomes. While basic trade theory predicts an increase in average welfare in all trading countries, higher average real incomes do not necessarily imply higher incomes for all people. Real wages may decline for workers whose labour is not in high demand in a

country's comparative advantage sector and their incomes will fall unless the winners from globalisation support the losers via sufficiently large transfers.

Whether or not the tide of globalization lifts all boats is thus an empirical question. The period of the 1990s and 2000s provides ample opportunity to study this issue. A spectacular increase in international trade, driven partly by the emergence of China as the world's largest exporter of manufactured goods, created a massive wave of globalization. The rapidly changing geographic organization of industrial production during this period had large impacts on labour markets in high-income countries, which economists were initially slow to recognize.

In this paper, we discuss recent literature on the impact of growing trade on labour markets with a focus on the effects of rising Chinese import competition (the 'China shock') in the United States and Europe. We begin by reviewing patterns of trade expansion during the 1990s and 2000s (Section 2) and then discuss the labour market impacts of such trade that economists expected based on the framework of the Heckscher-Ohlin model (Section 3). We next review empirical studies on the impact of China trade on workers and labour markets in high-income countries (Section 4), consumer prices and transfers (Section 5), as well as broader social and political outcomes (Section 6), before considering policy responses to support globalization's losers (Section 7). We refer the reader to Dorn and Levell (2024) for a more extensive coverage of all these topics.

2. The globalisation wave of the 1990s and 2000s and the rise of China

Global trade in goods expanded dramatically over the last several decades. The real value of merchandise that crosses international borders surged from $5.21 trillion in 1980 to $22 trillion by 2022.[1] This expansion of trade outpaced global GDP growth and thus reflects an increasingly globalized structure of the world economy rather than just an aggregate expansion. Panel a of Fig. 1 shows that the ratio of world goods exports to world GDP grew substantially over the last four decades, with all of this growth taking place in the 1990s and 2000s, when the trade-to-GDP ratio nearly doubled from 13.5% in 1993 to 24.0% in 2008.

The massive trade expansion of the 1990s and 2000s coincided with important changes in the distribution of trade flows across countries. Panel b of Fig. 1 indicates that low-income countries (defined as having a per-capita annual income below $480 in 1987) accounted for less than 5% of worldwide goods exports throughout the 1980s, but their contribution to world exports subsequently rose from 4.1% in 1990 to 18.8% in 2022, with most of that growth occurring in the 2000s. The emergence of major exporting countries did not always coincide with a commensurate expansion of these countries' imports, however. Instead, some countries export considerably more than they import and other countries import more than they export. Panel c of Fig. 1 shows that such global trade imbalances nearly quadrupled from $717 billion in 1990 to $2,745 in 2008, after which they stabilized at a high level.

The globalization wave of the 1990s and 2000s resulted from a coincidence of several factors that stimulated greater trade. New low-cost electronic communication methods facilitated coordination between geographically distant trading partners (Malgouyres, Mayer and Mazet-Sonilhac, 2021) and contributed to a decline in the costs of international air and sea freight shipping (Hummels, 2007). Countries reduced trade barriers, in part through the establishment or expansion of free-trade zones such as the EU, Mercosur, ASEAN and NAFTA, and worldwide average tariffs for goods shipments declined from 13.6% in 1986 to 7.5% in 2008 (Antràs, 2020). The 1990s were also a period of geopolitical realignment following the end of the 'Cold War' between the US, the USSR, and their respective allies. Whereas world trade in the 1980s was strongly dominated by trade among countries that belonged to the US-led capitalist bloc, trade between these countries and members of the former communist bloc surged in the 1990s and 2000s.

China stands out as the country that contributed more than any other to the growth of the global export-to-GDP ratio (Fig. 1 panel a), the rising export share of low-income countries (Fig. 1, panel b), and increasing international trade imbalances (Fig. 1, panel c). Panel d of Fig. 1 shows that Chinese exports to the US and the 15 member countries of the European Union in the 1990s grew from just $4 billion in 1980 to $987 billion in 2022—an astonishing 246-fold increase driven by a trade

expansion that commenced in the 1990s and advanced most rapidly in the 2000s. Within just a couple of decades, China moved from being a relatively minor player in international trade to being the world's largest exporter of goods. The growth of Chinese exports accounts for 90% of the expanding share of low-income countries in world exports from 1980 to 2015, and the trade surplus of China with regard to the US alone accounted for 18% of world trade imbalances in 2018 (although this had fallen to 11% by 2022).

The astonishing rise of China was preceded by several decades of poor economic performance during the Maoist era that had left the country well inside its production frontier. A series of domestic economic reforms then allowed China to realize rapid catch-up growth as it transitioned from strong central planning and little foreign trade to a market-oriented economy with a sizeable private sector and vibrant trade. Productivity in the Chinese manufacturing sector grew by 8% annually from 1998 to 2007 (Brandt, Van Biesebroek and Zhang, 2012). By the end of the 2000s, China had realized much of the catch-up growth that was enabled by earlier reforms, and the industrial planning of the Chinese government gave state-owned enterprises greater prominence again. China's productivity growth slowed considerably from 2009 onwards (Brandt et al., 2020), as did the growth of its goods exports to high-income countries (Fig. 1 panel d) and the progress of globalization overall (Fig. 1 panel a).

The dramatic rise in China's manufacturing power during the 1990s and 2000s confronted manufacturers in the United States and Europe with a surge in Chinese import competition. This 'China shock' (Autor, Dorn and Hanson, 2016) has become widely studied in economics because of its dominant role in the globalisation wave of the 1990s and 2000s, and it is also the main focus of the present article.

Panel a of Fig. 2 shows that the China import shock was pervasive across many leading economies in North America and Western Europe. The value of annual imports from China amounted to less than 0.3% of domestic GDP in all countries in 1990 but subsequently grew to between 0.8% and 2.4% by 2007. The US had the highest China import-to-GDP ratio throughout this period, though other countries like Germany were not far behind, or even experienced larger growth rates of Chinese imports. Autor, Dorn and Hanson (2016) show that high-income countries on different continents all imported similar types of goods from China, which is consistent with the notion that imports surged primarily because productivity growth in the Chinese manufacturing sector created an exogenous goods supply shock in international markets.

While patterns of import growth from China are quite similar in many countries (Fig. 2, panel a), there is considerable heterogeneity in exports to China (Fig. 2, panel b). The dramatic growth of US imports from China during the 1990s and 2000s was not matched by a commensurate expansion of US exports, which contributed to a rapid growth of trade imbalances across countries (Fig. 1, panel c). Since trade expansion between the US and China consisted very largely of growing US imports, studies of China trade's impact on the US largely focus on import competition rather than exports. The US experience is shared by many European economies like the UK or Spain where exports to China also considerably lagged imports from China. Conversely, Germany and Switzerland stand out as economies that managed to maintain a relatively balanced trade relationship with China, as both their imports and exports expanded rapidly. These countries partly benefited from their strength in sectors that faced a large increase in China's import demand, such as cars (in the case of Germany), machinery, and medical products (Dorn and Levell, 2024).

3. Trade's impact on the labour market: what the Heckscher-Ohlin model missed

The Heckscher-Ohlin factor proportions model (Heckscher, 1919; Ohlin, 1933) provides a simple and intuitive framework for the study of trade's impact on the labour market. A popular textbook version of the model assumes that two countries produce goods in two sectors that

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[1] Trade values from World Bank (2024) deflated to 2019 dollars using the US GDP deflator.

(a) Global goods exports

(b) Low income country share of global goods exports

(c) Global goods trade imbalances

(d) Volume Chinese exports to the US and EU15

Fig. 1. The globalisation wave of the 1990s and 2000s.
Source: Dorn and Levell (2024) using data from World Bank (2024) for panels a, b and d. The World Bank defined low-income countries as those that had a per-capita gross national income (GNI) less than $480 in 1987. Countries that did not exist in 1987 or were not in the data in 1987 were assigned their World Bank income designation for their first available year. Panel c is based on data from International Monetary Fund (2024). It shows the total goods trade deficits of all countries whose trade balance in goods was negative in a given year. Dollar values are deflated to $2019 with the US GDP deflator.

each use the two production factors high-skilled and low-skilled labour, which are both paid wages equal to the marginal products of their labour. Since the two countries differ in their factor endowments, there is scope for gains from specialization and trade. Once the two countries start trading with each other, the relatively more skill-abundant country specializes in the sector that uses skilled labour more intensively and it becomes an exporter of the skill-intensive good. It imports the good produced by the sector that intensively uses low-skilled labour and reduces its domestic production in that sector. Frictionless mobility in the domestic labour market ensures that workers smoothly relocate from the shrinking import sector to the expanding export sector until wages equate across sectors for each skill group. Relative to autarky, skilled workers in the skill-abundant country experience an increase in their real wage while the real wage of their unskilled peers declines. Since aggregate gains are larger than aggregate losses, trade could in principle improve everyone's fortunes subject to appropriate redistribution.

The Heckscher-Ohlin framework long guided economists' analyses of trade's impact on the labour market to an extent that "people's visions of reality were blinkered by HO theory" (Wood 2018b). The model notably focused researchers' attention on changes in the national skill wage premium while other margins of labour market adjustment were often overlooked.

Empirical research connecting trade to the labour market gained momentum in the 1990s when economists debated the causes of the rapidly rising wage differential between college-educated and high-school-educated workers in the US. However, the contribution of trade to the rising skill premium was estimated to be modest at best. A literature review by Krugman (1995) concluded that "a preponderance of

the research to date suggests that the impact of third world exports on first world labour markets has been small, or at least elusive". Economists thus increasingly rejected the hypothesis that trade had major repercussions for the labour market. Wood (2018a) recounts that "by the year 2000, the debate [about causes for rising income inequality] was over. Most economists joined a consensus that the main explanation was skill-biased technological change".

It is tempting to think that empirical studies from the 1990s failed to detect a sizable impact of trade on the labour market mainly because they studied a period which largely predates the large globalization wave shown in Fig. 1. Indeed, by the late 2000s, Krugman (2008) warned that "the consensus that trade has only modest effects on inequality rests on relatively old data". However, new data did not change the conclusions that were derived from old models. Irwin (2008) notes that a simple factor proportions model by Krugman (1995) which explained only 11% of the rise in the US skill premium over the period of 1979 to 1992 continued to explain only 11% of the rising skill premium when the underlying data was extended to the years 1979 to 2005 by Bivens (2007).

The consensus that trade has little impact on inequality was upended not by newer data, but by a conceptual shift away from some of the restrictive assumptions of the Heckscher-Ohlin framework and its narrow focus on national wage levels by skill. Researchers recognized that

(i) workers are not perfectly mobile across sectors and domestic regions
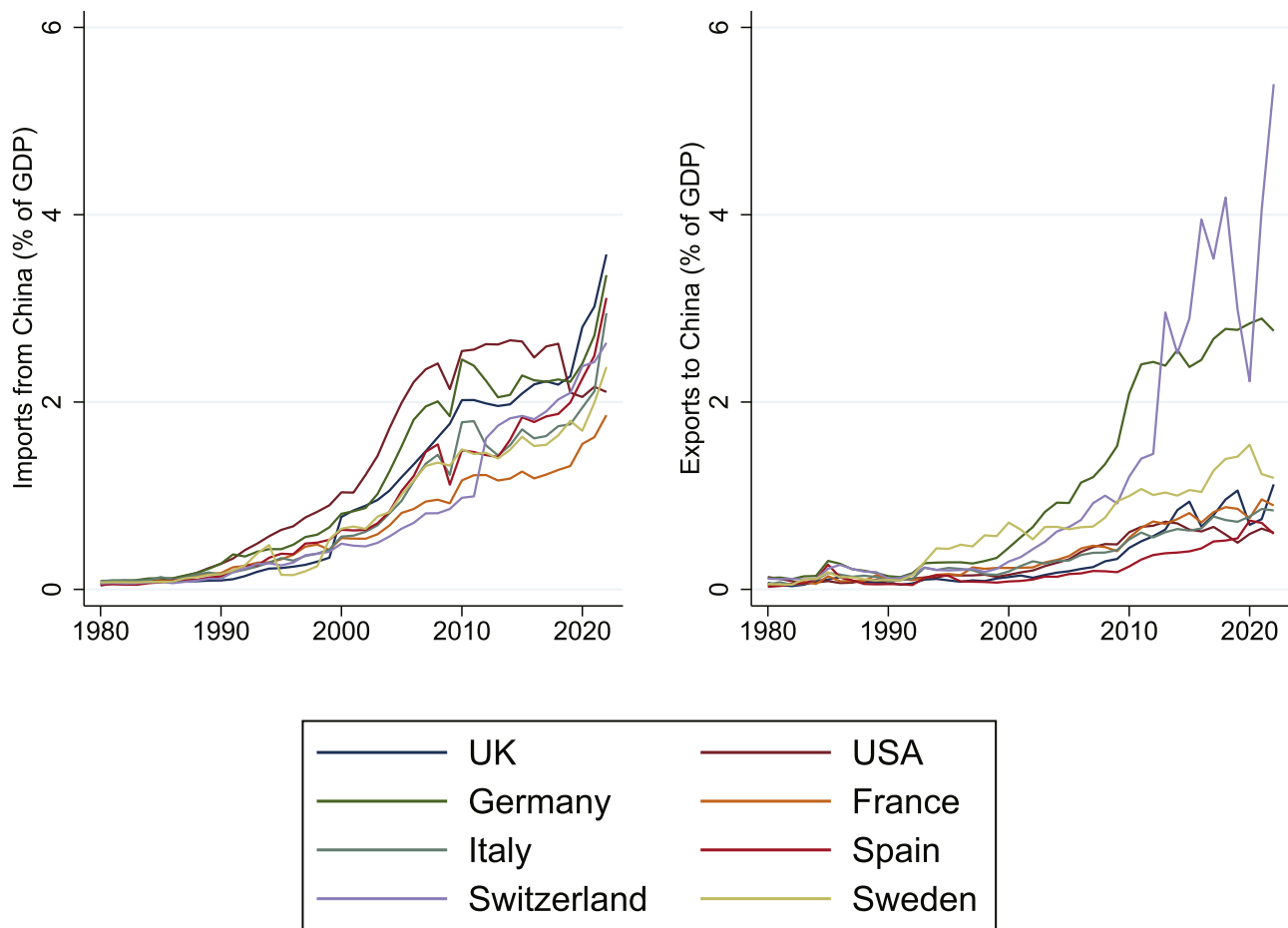(ii) labour markets adjust to shocks not only via wages but also through changes in employment levels

Fig. 2. Change in imports from and exports to China as a share of national GDP in developed economies, 1980-2022.
Source: Dorn and Levell (2024) using data from International Monetary Fund (2024) and World Bank (2024).

(iii) a country's import growth can deviate substantially from its export growth

Each of these insights has important empirical repercussions, which we now discuss.

Limited mobility of workers across sectors and regions implies that the law of one price for workers' wages within a skill group no longer holds. When rising import competition reduces the labour demand of a sector, then outmigration of workers to other sectors may be too weak to equilibrate wages across sectors, and the individuals who are employed in the contracting sectors are thus more adversely affected than their equally skilled peers elsewhere in the economy. Similarly, wages may fall more in geographic regions where the contracting sector is present than in other locations. Because of limited sectoral and spatial mobility, the effects of an adverse labour demand shock will not dissipate quickly to a broader national labour market but will instead remain concentrated among workers of specific sectors and regions.[2] This insight

motivates empirical analyses that study the differential impact of trade shocks not on national wage levels by skill group but on the wages of workers whose industries or regions were differentially exposed to the change in trade.

Labour market shocks can affect both wage and employment levels. It is for instance well known that falling labour demand during recessions results in substantial employment losses rather than large wage declines. Empirical analyses of trade's impact on the labour market that focus exclusively on wage changes among employees but ignore adjustment on the employment margin will thus at best be incomplete. But wage analyses can also paint a substantively misleading picture if they are unable to sufficiently account for workforce composition changes. If a declining segment of the labour market eliminates primarily the jobs of lower-ability workers, then the observed change in average wages of the employed will suffer from a positive composition bias (Böhm, Gaudecker, Schran, 2024). It is thus possible that observed average wages in a declining industry are stable even if wages per effective unit of labour service fall.

Most basic trade models assume that a country's goods trade is always balanced. An opening to trade generates both a growth of imports in some sectors and an equally large growth of exports in other sectors. The Heckscher-Ohlin framework thus predicts that workers will reallocate from import-competing to exporting industries within manufacturing. However, Fig. 1 reveals that global imbalances in goods trade increased sharply during the globalization wave especially during the 2000s, implying that some countries primarily expanded goods imports while others experienced mostly export growth. While many major economies in Europe and North America experienced a sharp increase in imports from China during that period, only a few of them

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[2] In addition, when workers face frictions moving across local labour markets, and labour markets are not perfectly competitive, trade can also influence wages through its effects on firms' market power. In particular, if trade shocks reduce the amount of competition between employers, they can affect the markdowns firms can impose on the wages of their employees. The growing availability of micro data that matches information on firms, customs transactions and workers in recent years has enabled more detailed study of the role of monopsony power on the pass-through of trade shocks to workers. So far, the importance of this channel on wages however appears to be small (Mackenzie, 2019, Felix 2022).

also strongly expanded exports to China, as seen in panel b of Fig. 2. In practice, the bilateral imbalances these countries experienced with China largely translated into multilateral trade deficits – that is, growing imports from China did not just displace imports from elsewhere, or lead to growth in exports to third countries. The empirical implication of this is that rising trade with China should be seen as a simultaneous import competition and export demand shock for a country like Germany that maintained relatively balanced trade, whereas rising China trade of the US or the UK can be primarily modelled as an import competition shock. The lack of export growth in the latter countries also implies that workers displaced from the import-competing sectors may find it difficult to find new employment in exporting sectors, which complicates the sectoral reallocation envisioned by the Heckscher-Ohlin model.

The combination of the above three insights conveys why trade with China could be more bruising for advanced countries labour markets than what economists would have expected based on a Heckscher-Ohlin view: If globalization leads to a large increase in goods imports combined with little growth of goods exports, then job losses in import-competing industries will not readily be offset by job creation in exporting sectors. If workers are not very mobile across industries and regions, then adverse labour market consequences of import competition will remain concentrated among the workers that were initially employed in these industries and the regions where they concentrated. And if labour markets adjust on the employment margin, then the workers of exposed industries and regions may experience prolonged periods of unemployment or even permanent departure from the labour force. The empirical results we review in the next section provide evidence for all these effects.

4. Labour market impacts of the 1990s and 2000s globalisation wave

4.1. Manufacturing industries and workers

Cross-country patterns

The globalisation wave of the 1990s and 2000s substantially changed the international distribution of manufacturing activity and had major repercussions for employment. Fig. 3 shows that the number of manufacturing jobs declined in most OECD countries during the period of 1999 and 2007 when global trade and especially Chinese exports increased dramatically. The job loss was massive in some countries. Two out of every ten manufacturing jobs in the United States and three out of every ten manufacturing jobs in the United Kingdom were eliminated over a span of just eight years. Fig. 3 indicates that employment growth in manufacturing displayed a systematic correlation with patterns of trade: Countries that faced a large growth of net imports from China—a major increase in imports with no commensurate expansion of own exports—experienced the largest manufacturing employment declines. Conversely, manufacturing employment was relatively stable in countries where net imports from China changed little as exports to China grew at a similar pace as imports from China. The patterns in Fig. 3 raise the hypothesis that many OECD countries lost manufacturing jobs due to trade with China as job loss in import-competing industries was not compensated by a comparable job growth in exporting industries. Consistent with this notion, estimates from a structural trade model by Dix-Carneiro et al. (2023) indicate that job loss in US manufacturing due to trade with China would have been substantially smaller if trade between the two countries had been balanced.[3]

Industry-level exposure to trade

Most empirical studies that investigate trade's impact on the labour market do not study cross-country patterns such as those in Fig. 3 but instead conduct within-country analyses. They either contrast the experiences of industries that become differentially exposed to trade based on the distinct goods they produce, or they compare workers, firms or local labour markets that are specialized in differently trade-exposed industries. The most widely used metrics of industry exposure to rising import competition from China first match customs data for international trade by detailed goods to the industries that produce such goods.[4] For instance, one can measure the dollar growth in the annual value of US imports from China for the goods that are produced by the "wood office furniture" or the "men's and boys' neckwear" industry. This growth of imports is then normalized by a metric of industry size such as domestic employment (Autor, Dorn and Hanson, 2013a) or domestic absorption (Autor et al., 2014) in a year that precedes the trade shock, where this normalization accounts for the fact that a given increase in the dollar value of imports implies a larger shock for a small industry.[5]

Import growth for an industry's products does not always reflect an import supply shock but can also be a response to rising demand. In the case of China trade, it seems plausible that the massive expansion of Chinese exports to the rest of the world in the 1990s and 2000s resulted primarily from reforms and developments in China, rather than rapidly changing demand conditions in high-income countries (see Autor, Dorn and Hanson, 2016 for a more detailed discussion). Autor et al. (2014) propose to additionally instrument for US imports from China in an industry with other high-income countries' China imports in that industry to isolate the import supply shock from demand shocks in US industries.[6] Causal identification in industry-level studies of trade is based on the assumption that trade shocks are as-good-as-randomly assigned to manufacturing industries conditional on control variables. To make this assumption more plausible, empirical studies typically control for other industry-level shocks such as measures of exposure to automation.[7] Moreover, pre-period analyses allow tests of whether industries already experienced differential growth rates prior to a trade shock.

While measures of industry import competition match goods imports to the US or European industries that produce similar manufactures, it may be the case that foreign and domestic goods are poor substitutes within industries. For instance, mass-produced low-cost furniture from

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[3] While this article focuses on the impact of China trade on high-income countries, it is worth noting that China's rapidly growing demand for commodities may have benefited the labour markets of many lower-income countries (Costa, Garred and Pessoa, 2016).

[4] Physical goods accounted for 79% of the value of total world trade of goods and services in 2021 (Eurostat, 2023). Customs agencies record the value of goods trade for thousands of detailed products whereas statistics for trade in services are often available only for aggregate sectors.

[5] A normalization of import growth by initial domestic industry employment can be problematic if a country has little domestic production of the corresponding good. The normalization by initial domestic absorption divides the dollar growth in trade by the sum of a country's initial domestic production and its initial net imports. This metric is well-defined even for industries where a country has no domestic manufacturing, but its construction requires information on domestic production by detailed industry which can be more difficult to obtain than industry employment data.

[6] Autor, Dorn and Hanson (2013a) alternatively construct measures of Chinese import competition that estimate China's changing comparative advantage from a gravity regression model of trade. Other researchers argue that Chinese exports to the US surged after 2001 because China's accession to the World Trade Organization in that year provided Chinese exporters with greater certainty that they would continue to face the same low US tariffs that already applied prior to WTO accession (Pierce and Schott, 2016; Handley and Limao, 2017).

[7] Autor, Dorn and Hanson (2013b) show that the geography of US local labour market exposure to Chinese import competition correlates little with local exposure to routine-biased technological change, although both contribute to a decline in production jobs of the manufacturing sector (Autor, Dorn and Hanson, 2015).
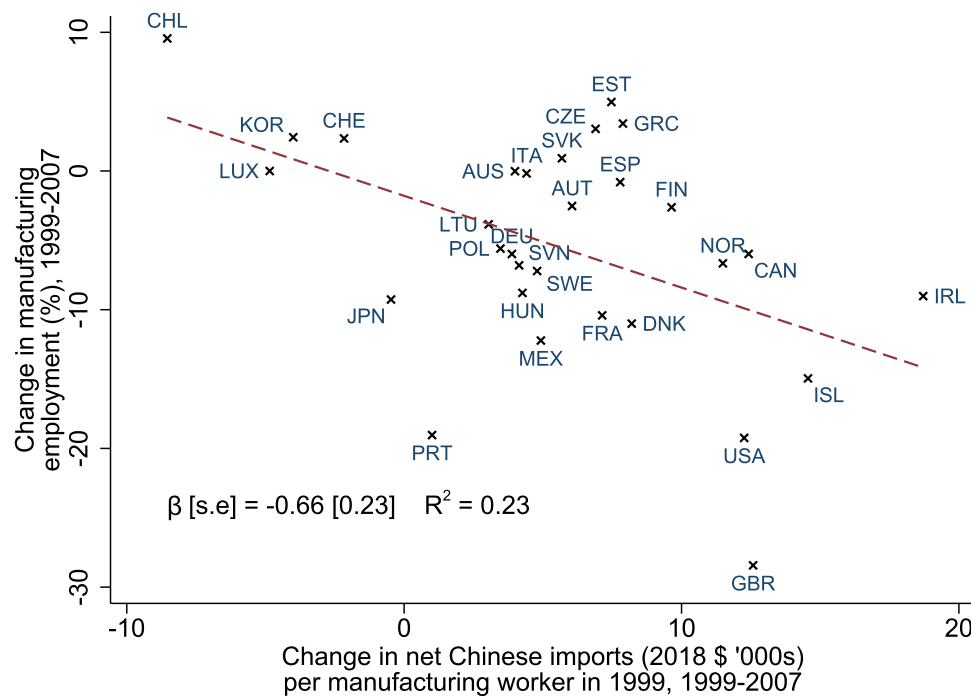
Fig. 3. Growth of net Chinese import competition and percentage change in manufacturing jobs in OECD countries.
Source: Dorn and Levell (2024) based on data from OECD STAN and UN Comtrade. Figures are for OECD countries excluding Israel, Latvia, New Zealand and Turkey which do not report manufacturing employment over the relevant time period, and the Netherlands and Belgium whose trade statistics tend to be inflated due to their major ports that serve large parts of Western Europe.

China likely presents little competition to US firms that produce hand-crafted high-end furniture (Holmes and Stevens, 2014). During the 1990s, some economists predicted that even a major expansion of imports from China would not be harmful to workers in high-income countries because these countries no longer produced the kind of goods that China had to offer (Wood, 1995). However, many empirical studies subsequently confirmed that firms which became exposed to rising import competition by China or other low-income countries experienced falling employment and a greater likelihood of firm exit (see Bernard, Jensen and Schott, 2006, Asquith et al., 2019, and Autor et al., 2019 for the US; Mion and Zhu, 2013 for Belgium; Branstetter et al., 2019 for Portugal; and De Lyon and Pessoa, 2020 for the UK).[8]

A rapidly growing import of one industry's goods may change labour demand not only in the directly exposed industry, but also in its supplier and customer industries. If suppliers and customers strongly rely on the presence of a local industry to which they sell their outputs or from which they source their inputs, then the decline of that local industry may lead to an additional contraction among supplier and customer industries. If firms are instead able to form new international supply chain relationships, then greater imports to a country may beneficial especially for customer industries that are able to obtain cheaper input goods that are imported from abroad. Several studies use industry input-output tables to estimate the impact of Chinese import competition along national industry supply chains. For the US and Australia, Acemoglu et al. (2016) and Blanco et al. (2020) find that employment losses in directly exposed industries are compounded by employment declines in supplier industries while employment effects in customer industries are neutral. Kainuma and Saito (2022) document negative employment effects in directly exposed industries combined with job gains in

customer industries in Japan, while Kiyota, Maruyama and Taniguchi (2021) document similar patterns for both Japan and Germany.

Worker-level adjustment

What happens to the employees of manufacturing firms that contract due to import competition? Autor et al. (2014) contrast the career trajectories of workers whose 1991 employers subsequently became exposed to increasing Chinese import competition to workers with comparable characteristics whose initial employers faced little Chinese competition. The more trade exposed workers accumulate fewer employment years with their initial firm. They are more likely to spend time working for other firms, but the extra earnings from these subsequent employers is not enough to offset the shortfall of earnings from the initial firm. Over the period of 1992 to 2007, a manufacturing worker at the 75th percentile of import exposure earned about half an annual salary less than a worker at the 25th percentile of exposure, corresponding to about a three percentage point decline in earnings in the average year. This adverse earnings effect is even considerably larger if the analysis focuses just on low-income workers. De Lyon and Pessoa (2020) find quantitatively similar results for the impact of Chinese import competition on earnings accumulation among manufacturing workers in the United Kingdom, while Nilsson Hakkala and Huttunen (2016), Utar (2018) and Dauth, Findeisen and Südekum (2021) document adverse impacts of import competition on earnings trajectories of exposed workers in Finland, Denmark, and Germany, respectively.

The finding that workers in import-exposed industries fared worse than equally skilled workers in other industries is a violation of the Heckscher-Ohlin framework where perfect mobility of workers across industries allows no earnings differentials to emerge within skill groups. Structural analyses of workers' industry choice confirm that observed industry mobility patterns are not consistent with costless mobility. For instance, Ashournia (2017) estimates that Danish workers who switch sectors face a one-time switching cost corresponding to 10-19% of their annual earnings. This cost slows the labour market's adjustment to shocks to the extent that it would take nearly a decade to complete 90%

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[8] Studying an earlier episode of trade liberalisation, Kovak and Morrow (2020) find that the 1988 Canada–US Free Trade Agreement had little impact on the earnings trajectories of workers in Canada, possibly because declining employment opportunities in import-competing industries were offset by growing labour demand in expanding export industries.

of the sectoral adjustment induced by a hypothetical 10% decline in manufacturing prices. Artuç, Chaudhuri and McLaren (2010) document slow adjustment processes for the US labour market, and Dix-Carneiro (2014) emphasizes that imperfect capital mobility across sectors can contribute to such limited mobility of workers.

A successful adjustment of the labour market to trade shocks may also require workers to move spatially from regions whose industries suffer from import competition to other regions that offer better employment prospects. However, Autor et al. (2014) and De Lyon and Pessoa (2020) strikingly find that US and UK workers who were employed in import-competing firms do not become more likely to move to employers in other locations.[9] In the presence of limited spatial mobility, trade shocks can lead to substantially different outcomes across local labour markets.

4.2. Local labour markets

Local labour market exposure to trade

Local labour markets are geographic regions that are only weakly connected to other such regions by work commuter flows.[10] When there is little commuting or worker relocation across such regions, then there can be persistent spatial differences in employment and earnings levels.

Local labour markets are differentially exposed to trade shocks based on their industry employment structure. Measures of local labour market exposure to Chinese import competition are thus typically derived as an employment-weighted average of the industry-level trade shocks faced by the industries that locate in the region.[11] An example for a US local labour market with massive exposure to import competition from China is the region of Hickory, North Carolina. Hickory is heavily specialised in furniture production and thus faced rapid economic decline as import competition from China put great pressure on the US furniture industry (Davis and Hilsenrath, 2016).[12]

One strength of local labour market analyses is that they capture local spillover effects of trade shocks that are not usually included in firm- or industry-level studies. Such spillovers can result from local demand multipliers, the propagation of industry-level shocks along local supply chains, or worker reallocation across industries within a region (Acemoglu et al., 2016). Consistent with the presence of local spillovers,

the individual-level analyses of Autor et al. (2014) and De Lyon and Pessoa (2020) show that workers in the US and the UK accumulated lower earnings not only when their initial firm was exposed to rapidly growing Chinese import competition, but also when many other firms in the same local labour market faced import competition.[13] Another strength of local labour market analyses is that they allow the study of outcomes for all individuals in a region, including young labour market entrants or unemployed workers who did not hold a job at the onset of a trade shock and for whom a measure of trade exposure based on an initial employer cannot be constructed.

Local labour market employment and earnings

A large number of studies investigates the impact of Chinese import competition on local labour markets in high-income countries that were differentially exposed to trade due to their industry employment structure. Initial work for the US (Autor, Dorn and Hanson, 2013a) subsequently inspired similar investigations in Germany (Dauth, Findeisen and Suedekum, 2014), Norway (Balsvik, Jensen and Salvanes, 2015), Spain (Donoso, Martin and Minondo, 2015), the UK (Foliano and Riley, 2017), France (Malgouyres, 2017a), Italy (Citino and Linarello, 2022), and Australia (Coelli, Maccarone and Borland, 2023).[14]

These studies produce three shared findings:

(i) regions with greater exposure to Chinese import competition experienced a significant differential decline in manufacturing employment[15]

(ii) in all countries considered except Norway and Spain, local job losses in manufacturing were compounded by additional employment declines in non-manufacturing industries[16]

(iii) the subset of studies that also analyse changes in local wage rates all find negative but often small local wage effects of import competition

These findings imply that local exposure to trade shocks did not simply induce a reallocation of employment across sectors. Instead, the loss of manufacturing jobs in trade-exposed regions was to a sizable extent offset by rising local unemployment and labour market non-participation. The impact of trade on workers' overall earnings hence operated not only via wage adjustments for those who hold a job but also via a change in the fraction of working-age individuals who have a job. Autor, Dorn and Hanson (2013a) calculate that a US$ 1,000 increase in Chinese imports per U.S. worker, corresponding to roughly the difference between local labour markets at the 75th and 25th percentile of trade exposure, caused a decline of household wage and salary income per adult of US$ 549 per year. About two thirds of this effect is due to a lower employment rate (i.e., a higher likelihood of having no earnings)

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[9] In the case of Germany, Dauth, Findeisen and Suedekum (2014) find some evidence for small positive migration responses of workers whose industries were exposed to rising import competition from Eastern Europe and China.

[10] Most recent local labour market analyses in the US study outcomes at the level of 722 commuting zones, which consist of counties that are connected by strong commuting ties in 1990 (Autor, Dorn and Hanson, 2013a). In the European context, researchers often use the European Union's NUTS-3 geographic areas as a measure for local labour markets. There are 1,390 such areas across the EU28 and EFTA countries, which usually correspond to administrative regions in the respective countries.

[11] Measures of local labour market exposure to trade such as those used in Autor, Dorn and Hanson (2013a) use a shift-share design that combines a shift (industry-level growth in import competition) with shares (employment shares of industries in the local labour market). Causal identification in this empirical design assumes a quasi-random assignment of trade shocks to industries while employment shares could be endogenous (Borusyak, Jaravel and Hull, 2023).

[12] Hickory's large exposure to Chinese import competition results from its high employment share in the furniture industry combined with rapidly growing US imports from China in that industry. The underlying assumption is not that large volumes of Chinese furniture were shipped to Hickory, but that rising import competition in the national US market for furniture reduced demand for Hickory's manufactures.

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[13] One channel through which workers are affected by shocks to other firms is a change in their employment opportunities outside the current firm. Borusyak, Dix-Carneiro and Kovak (2023) build on this notion to show that worker mobility across sectors and regions is reduced when the sectors and regions to which a given type of worker often moved experience a trade-induced contraction.

[14] Choi et al. (2021) use the local labour market design to reanalyze the impacts of the 1994 North American Free Trade Agreement (NAFTA). They find that locations whose industries were more vulnerable to NAFTA experienced persistent job losses.

[15] A notable exception is Japan where manufacturing employment increased in local labour markets that were primarily exposed to the import of intermediate goods from China (Taniguchi, 2019; Kainuma and Saito, 2022). Japan differs from countries in Europe, the United States or Australia because it is a geographic neighbour of China and a major investor in the Chinese economy.

[16] A decline of a local labour market's manufacturing sector can reduce demand for local services such as transportation and warehousing that cater to manufacturing firms, and it can lower general consumer demand as workers' incomes fall.

while the remaining third of the earnings decline is due to lower wages for the employed.

The US and most other OECD countries experienced a much larger growth of imports from China than of exports to China (see Fig. 3 above). For these countries, results that simultaneously consider imports from and exports to China tend to differ little from an analysis of imports alone. A notable exception is the case of Germany which is a major producer and exporter of manufactured goods. Dauth, Findeisen and Südekum (2014) emphasize that Germany not only experienced a strong increase in goods exports to China (as shown in Fig. 2) but also to the formerly communist countries in Eastern Europe during the 1990s and 2000s. Whereas employment declined in German local labour markets whose industries faced growing import competition from China and Eastern Europe, regions specialized in exporting industries experienced job gains. While rising trade with China and Eastern Europe had important distributional effects across German local labour markets, Dauth, Findeisen and Südekum (2014) estimate that the aggregate employment effect was positive.[17]

Several local labour market analyses find that import competition not only had differential impacts across regions, but that it also contributed to greater inequality within regions. Chetverikov, Larsen and Palmer (2016) show that import competition increased wage inequality in local labour markets as the 20th wage percentile declined twice as much as the 80th wage percentile. Much of the adverse labour market impacts of China trade concentrated on lower skilled workers. For instance, while import competition led to similar declines in manufacturing employment among college- and non-college-educated workers in the US and Norway, in both countries the increase in unemployment was much larger among the non-college-educated group (Autor, Dorn and Hanson, 2013a; Balsvik, Jensen and Salvanes, 2015).[18]

5. Consumer prices and transfers

The notion that trade can make everyone better off rests on the premise that even the workers whose earnings decline may be net beneficiaries from trade thanks to falling consumer prices and transfers to the losers of globalisation. Whether globalization can lift all boats thus depends also on the magnitude and incidence of price declines and transfers.

5.1. Consumer prices

The analysis of trade's impact on prices is interested both in an average price impact as well as distributional effects that may result if trade differentially lowers the prices of goods that are consumed by particular segments of the population, such as poorer and richer households. Dorn and Levell (2024) provide a comparative analysis of the impacts of Chinese import competition on employment and consumer prices in 48 manufacturing industries of the United Kingdom. Panels a and b of Fig. 4 show that industries with strong exposure to Chinese imports such as shoes, garments, or audio-visual equipment experienced large price declines of 20 to 60 percent during the eight-year period of 1999 to 2007 while these same industries also lost between 30 and 70 percent of their manufacturing jobs in the UK. Industries with little exposure to Chinese imports, such as cars, beer or newspapers, lost fewer jobs and their products did not dramatically decline in price.

A more detailed regression analysis that accounts for secular trends in consumer prices and employment by industry yields the result of a 0.7% decline in UK prices for a one percentage point greater increase in Chinese import penetration in a UK industry's domestic market. Thanks to the comparable analyses for prices and jobs, one can readily benchmark this consumer price effects against the employment impacts of Chinese imports. Dorn and Levell (2024) estimate that consumers in the UK gained between £19,400 and £32,900 per displaced manufacturing job, depending on the specifications of the underlying regression models.

For the US, Jaravel and Sager (2019) estimate that consumer prices declined by 1.4% for a one percentage point increase in industry import penetration, which is double the effect of the UK. They further show that much of the consumer price benefit is not due to the cheaper Chinese products per se, but due US firms lowering markups on their products in response to the Chinese competition.

An important question is whether these consumer gains accrue differentially to the lower-income individuals who were more exposed to the adverse labour market impacts of import competition. Panel c of Fig. 4 shows that consumers from the lowest income quintile in the UK differ from those of the highest income by spending a larger fraction of their expenditure for various food products while they have lower expenditures for cars and motor fuel. However, none of these product groups is strongly exposed to Chinese imports. Spending of the poor and the rich is more similar for the goods categories that are strongly affected by China trade, with the poor spending slightly more on shoes or appliances and the rich devoting a higher fraction of their spending to furniture or IT equipment. The negative slope of the regression line in panel c of Fig. 4 indicates low-income consumers' spending on goods is slightly biased towards goods categories with little imports from China. However, households in the lowest income quintile spent a slightly larger fraction of their overall consumption on goods compared to top quintile households (57% vs. 52%). The combination of these two effects implies that declining prices in goods categories with rising Chinese imports equally benefited poor and affluent households.

One limitation of the simple analysis in panel c of Fig. 4 is that it does not reveal whether poor and affluent households are differentially likely to buy import products within a goods category. However, Levell, O'Connell and Smith (2017) show UK households of different income levels do not systematically differ in their relative purchases of domestic versus imported goods in the case of food products. Borusyak and Jaravel (2021) provide broader evidence for the US, where the college-educated and those with lower educational attainment spend similar fractions of their overall expenditure on imported goods. Three separate analyses by Hottman and Monarch (2018), Bai and Stumpner (2019) and Borusyak and Jaravel (2021) all find that rising Chinese imports to the US reduced consumer prices roughly evenly for households of different education groups or income strata. Bai and Stumpner (2019) additionally show that Chinese imports led to similar consumer price declines across different geographic regions of the US. Whereas import competition led to earnings losses that were concentrated among workers of the most trade-exposed industries and local labour markets, the gains from lower consumer prices appear quite homogenous across individuals and thus neither offset nor exacerbate trade's impact on within-country inequality.

5.2. Government transfers and spatial differences in welfare effects

The losers from globalisation could in principle be made whole through a transfer system that redistributes from winners to losers. Autor, Dorn and Hanson (2013a) show that government transfers increased in US local labour markets with greater exposure to Chinese import competition, as many transfer program cater primarily to individuals who are jobless or have low earnings. Comparing local labour markets at the 75th and 25th percentiles of import exposure over the 2000–07 period, the social security and welfare payments per

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[17] An industry-level analysis for South Korea finds that China trade induced an expansion of manufacturing employment thanks to job gains in exporting industries (Choi and Xu, 2019).

[18] Worker-level analyses such as Autor et al. (2014) and De Lyons and Pessoa (2020) find that exposure to import competition in worker's initial industry of employment caused greater earnings losses for lower-income workers compared to their higher-earning peers.

(a) Price change

(b) Employment change

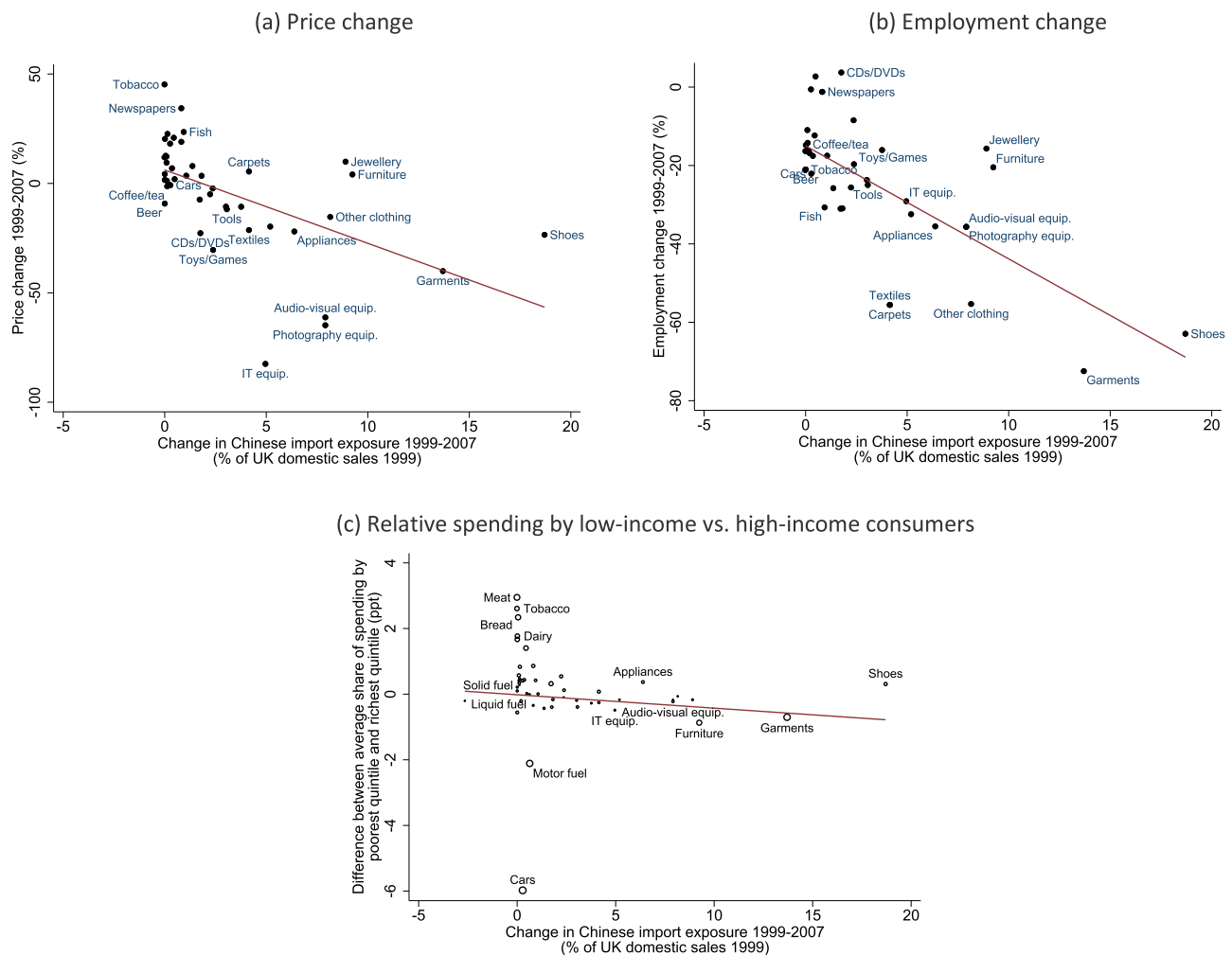### (c) Relative spending by low-income vs. high-income consumers

Fig. 4. Change in Chinese import exposure, price changes and employment changes, 1999–2007.
Source: Dorn and Levell (2024) based on data from the UK CPI, Office for National Statistics, UN Comtrade and the Business Structure Database. Panels (a) and (b) exclude services and fuel. Chinese imports include imports from Hong Kong.

working-age adult increased by 2.2% more in the former location. This elasticity is very similar to that of wage and salary incomes, which declined by a differential 2.3%. However, when measured in dollar rather than percentage terms, the estimated increase in social security and welfare income amounts to just an additional $18 per adult and year, which falls far short of an estimated $581 decline in wage and salary income. The US thus largely failed to compensate losers from globalisation via transfers.[19]

Autor, Dorn and Hanson (2021) argue that import competition reduced not just the real incomes of a few individual workers, but even average real incomes declined in some local labour markets. If trade increased nationwide real income proportional to Jaravel and Sager's (2019) consumer price estimates, then a combination of that national effect with estimates for import competition's differential impact on

incomes across local labour markets implies that average real incomes declined in more than a tenth of US local labour markets (Autor, Dorn and Hanson, 2021). If the average welfare gain from Chinese imports is calibrated based on the smaller welfare estimates from structural trade models such as Caliendo, Dvorkin and Parro (2019) or Galle, Rodriguez-Clare and Yi (2023), then the fraction of local labour markets with declining average real income is considerably larger.

6. Societal and political repercussions

Economists traditionally evaluate trade's impact on welfare through the lens of consumption opportunities that are determined by such factors as nominal earnings, consumer prices, and transfer payments. However, economic shocks can affect many other outcomes that may also be relevant for people's well-being. The broader societal repercussions of trade shocks have been investigated perhaps most comprehensively for US local labour markets that differed in their exposure to Chinese import competition.

6.1. Fissures in the fabric of society

Autor, Dorn and Hanson (2019) show that the trade-induced decline in manufacturing jobs in the United States reduced job opportunities more for men than for women. This gender differential arises because two in three manufacturing jobs are held by men. Consequently, job loss

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[19] Two papers on trade's impact on Danish workers suggest higher but still imperfect compensation through transfers there. Utar (2018) shows that workers in firms that faced greater trade competition due to the expiration of the Multifibre Agreement experienced a 3.7% decrease in annual earnings while a measure of personal income that includes government transfers, business income and self-employment earnings declined by only 1%. Hummels et al. (2014) estimate that a doubling of offshoring reduced low-skilled workers earnings by 1.5% in the following year while a measure of gross earnings that includes unemployment benefits and social assistance declined modestly less by 1.3%.

due to import competition is greater for men than for women, and men's earnings decline both in absolute terms and relative to the earnings of women in the same local labour market. These changing labour market opportunities make younger men economically less attractive partners for the local women. Consistent with that notion, rates of marriage and cohabitation decline in trade-exposed regions. Fertility also declines but to a lower extent than marriage and cohabitation, and a greater fraction of children grows up in single-parent households as a consequence. Since single parents are more likely to be poor than two-parent households, this compositional change in children's living circumstances exacerbates the import competition shock's impact on rising child poverty.[20]

What do young men, who are neither integrated into the structure of a workplace nor of a partnered household, do? One possibility is that they invest in human capital to improve their employment prospects. Indeed, import-exposed US local labour markets experience growing rates of high school graduation (Greenland and Lopresti, 2016) and the reduced employment rate among young adults between the ages of 18 and 25 combines with a higher fraction of individuals who are not employed but in education. However, whereas lower employment among young women is fully offset by greater educational enrolment, the same is not the case among young men for whom also the probability of being neither employed nor in education rises (Autor, Dorn and Hanson, 2019). While Aguiar et al. (2021) note that young men in the US spend an increasing amount of their time with leisure activities such as video gaming, some men may also be drawn to socially damaging activities. Feler and Senses (2017) and Che et al. (2018) show that import-exposed local labour markets experience greater rates of property crime, while Autor, Dorn and Hanson (2019) observe higher rates of male mortality due to drug and alcohol consumption.[21] Both crime and drug problems can have considerable negative spillovers on local labour market residents, even those whose own labour market prospects were not adversely affected by trade.

6.2. Attitudes towards trade and electoral impacts

Rapidly rising Chinese import competition disrupted labour markets and social structures in the US and other high-income countries in the 2000s. An analysis of international survey data by Davenport, Dorn and Levell (2020) shows that popular support for trade declined during the same period. The fraction of US residents who rated trade with other countries as 'very good' or 'somewhat good' declined from 78% to 60% between 2002 and 2007, while attitudes towards trade also became more negative in major European economies such as Germany, France, Italy or the UK. The less educated segments of the population who had suffered the most negative labour market impacts voiced the most skepticism towards trade. Interestingly, only a minority of survey respondents in the US and in major European economies stated that trade reduces prices, suggesting that people either did not notice some of the dramatic price declines that Fig. 4 shows for the case of the UK, or that they did not identify such price changes as being a consequence of trade

(Davenport, Dorn and Levell, 2020). However, attitudes towards trade improved again in the period of 2007 to 2018 when the growth of world trade and Chinese exports to high-income countries slowed down.

A sizable literature analyses the impact of Chinese import competition on electoral outcomes. Autor et al. (2020) show that from 2000 to 2016, US local labour markets with greater exposure to Chinese imports become more likely to elect far-right Republican candidates in Congressional elections, and to vote for Republican candidates in presidential elections. These regions also attracted more campaign donations from right-wing donors, and residents became more likely to watch the pro-Republican TV channel Fox News. The ideological and electoral shift to the right was not monotone, however. Trade-exposed local labour markets also received more campaign contributions from left-wing donors and the electoral success of left-wing candidates increased in regions with predominant Hispanic or non-white populations. Conversely, the share of campaign contributions from politically moderate donors declined, as did the electoral success of moderate politicians, especially from the Democratic party.

The pattern of right-wing gains in regions facing Chinese import competition is also pervasive in Europe. Colantone and Stanig (2018a) and Milner (2021) document this result for large geographic regions in 15 Western European countries, while Malgouyres (2017b) and Dippel et al. (2022) provide evidence for local labour markets in France and Germany. Further studies link local import competition to a rise in nationalist sentiments and declining support for EU membership in the UK (Colantone and Stanig, 2018b; Harms and Steiner, 2021).

One interpretation of these results is that voters reacted to the economic and social toll of import competition by supporting politicians who were more skeptical towards international integration. The presidential campaign of Donald Trump voiced more protectionist stances than any other major-party candidate over the prior decade (Cerrato, Ferrara and Ruggieri, 2018), and supporters of Donald Trump differed from the supporters of other candidates in the 2016 Republican or Democratic primary elections by being more likely to state that their families had been hurt by trade. Once elected, Trump followed up on his campaign promise to introduce new import tariffs, especially on goods from China.

Another interpretation is that voters in import competing labour markets became more likely to support right-wing politicians not due to their stances on trade, but because a local economic and social decline contributed to a cultural backlash with rising nationalism and skepticism towards immigrants and ethnic minorities. Consistent with this view, survey evidence suggests that US and UK residents in local labour markets facing greater Chinese import competition became more likely to support anti-immigration stances (Cerrato, Ferrara and Ruggieri, 2018; Colantone and Stanig, 2018b). More broadly, the rise of protectionist policies in recent years appears driven not primarily by a large change in public opinion towards trade but by a changing politicization of globalization (Walter, 2021).

7. Policies to support globalisation's losers

Politicians promote two types of policies to avert adverse impacts of trade on workers and local labour markets. The first type seeks to compensate the losers from globalization via transfers and support for finding new jobs. The second type instead aims to change the trade flows that generate undesirable outcomes for some workers and regions.

7.1. Transfer, active labour market and regional policies

A globalisation that lifts all boats usually requires a transfer system that channels resources from globalisation's winners to the workers whose labour market opportunities deteriorate because of trade. U.S. President John F. Kennedy already argued in 1962 that a greater opening to trade should be accompanied by government support for trade's losers: 'When considerations of national policy make it desirable

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[20] Related work by Keller and Utar (2022) shows female workers whose jobs became exposed to Chinese import competition became more likely to marry and have children. Irastorza-Fadrique, Levell and Parey (2024) also find a reduction in divorce rates among young women employed in industries exposed to growing Chinese import competition, but no effects on fertility. Majlesi (2016) studies the impact of trade-induced changes in labour market opportunities on intra-household bargaining in Mexican households.

[21] Additional US local labour market analyses indicate that exposure to Chinese import competition contributed to higher rates of mental health problems (Lang, McManus and Schaur, 2018), diabetes, obesity and pain (Adda and Fawaz, 2020) and mortality (Pierce and Schott, 2020), while Colantone, Crino and Ogliari (2019) observe adverse mental health outcomes in the UK. Feler and Senses (2017) document that local governments of trade-exposed regions in the US generate less tax income and reduce spending on local public goods.

to avoid higher tariffs, those injured by that competition should not be required to bear the full brunt of the impact. Rather, the burden of economic adjustment should be borne in part by the Federal Government' (Kennedy, 1962). Residents of US local labour markets with greater exposure to Chinese import competition indeed report a higher receipt of transfer income but this falls far short of fully compensating for the decline in labour earnings (see section 5.2 above).

In addition to transfer and insurance systems that compensate for earnings losses, governments also support displaced workers through active labour market policies that facilitate the transition to new jobs. The US Trade Adjustment Assistance (TAA) scheme that was originally introduced by the Kennedy administration primarily covers the costs of retraining workers who lost their jobs because of trade competition, and it provides wage subsidies to older displaced workers who are willing to accept a lower-wage job. To obtain TAA benefits, groups of workers or their representatives such as unions file a petition with the US Department of Labor which then determines whether the workers are entitled to TAA benefits because they were laid off by a firm that experienced declines in sales or production due to trade. Local labour markets that faced rising Chinese import competition (Autor, Dorn and Hanson, 2013a) and declining employment (Kondo, 2018) experienced large growth rates in TAA payments to the local population. However, the scale of the TAA program is very small relative to other programs that provide transfer payments and in-kind benefits for the unemployed and the poor. TAA payments account for less than 1% of the transfer growth in import-competing local labour markets, while most of that growth is due to programs that provide medical and disability benefits, income assistance or subsidies for training and education.[22]

Recent evaluations of the TAA program indicate that workers who got access to subsidized retraining achieved considerably higher earnings several years after the initial job displacement compared to workers whose applications for TAA benefits were rejected (Hyman, 2018), whereas wage subsidy policies provided little lasting improvements (Hyman et al., 2021). These findings echo results for general active labour market policies that are not conditional on trade displacement. A meta-analysis of several hundred active labour market policy programs finds that about two-third of such programs increased workers' employment probabilities two or three years after the end of the program, with best results for those programs that supported human capital accumulation (Card, Kluve and Weber, 2015).

Dorn and Levell (2024) explore whether a differential use of active labour market policies across countries helps to explain heterogeneous impacts of the China trade shock. Their analysis finds tentative support for that hypothesis. Among the countries they compared, the US and the UK have the lowest spending on active labour market policies and some of the highest employment losses in local labour markets per unit increase in Chinese import competition. Conversely, Norway had the highest spending on active labour market policies per unemployed worker and experienced the smallest adverse impact of the trade shock on employment.

US local labour markets which faced greater Chinese import competition in the 1990s and 2000s still suffered from depressed employment and earnings levels almost a decade later in 2019 (Autor, Dorn and Hanson, 2021). Localized trade shocks failed to trigger a rapid mobility of workers from trade-exposed locations to regions with better job opportunities that would have equated labour market outcomes across space.[23] When workers don't sufficiently move to locations that offer jobs, then governments can instead encourage the creation of jobs in depressed locations. One example for such a policy is the UK's Regional Selective Assistance (RSA) programme that subsidizes investment projects of firms that create jobs in disadvantaged regions. Criscuolo et al. (2019) estimate that this programme, which primarily stimulated investment in the manufacturing sector, created a sizable number of jobs at a relatively low cost. Reviews of spatially targeted programmes (e.g. Kline and Moretti, 2014; Neumark and Simpson, 2015; Ehrlich and Overman, 2020) however suggest that there is substantial heterogeneity in the effectiveness and efficiency of place-based policies, just as there is large variation in the success of active labour market policies.

7.2. Protective trade policy

The globalization wave of the 1990s and 2000s occurred in a period when high-income countries lowered their average tariffs by more than half, from about 12% in the mid-1980s to less than 5% by 2016 (World Bank, 2019). The observation that some domestic sectors suffered from import competition however subsequently strengthened calls for protective measures such as import tariffs, import quotas or subsidies of domestic sectors.[24]

The rules of the World Trade Organization (WTO) allow its members to impose safeguard measures such as temporary tariffs that provide temporary protection from import competition. Safeguard measures need to be justified by a sharp increase in imports that causes, or threatens to cause, serious injury to a domestic industry. Temporary safeguards can give domestic firms some respite to adjust their business model so that they are able to withstand intensified import competition after the protective measures expire. However, the US and the European Union rarely used protective tariffs, and empirical studies question whether the protective steel tariffs that the US introduced in 2002 (Read, 2005) or the more widely used anti-dumping tariffs (Jabbour et al., 2019; Bown et al., 2021) indeed had a positive aggregate effect on domestic jobs.

A long period of falling tariffs came to an end in 2018 and 2019, when the US government of President Donald Trump implemented farreaching tariff increases, to which affected trading partners reacted with retaliatory tariffs. These tariffs came at a time when the US neither experienced a rapid growth of imports nor a decline in manufacturing jobs, and thus could not be justified as temporary safeguard tariffs. Instead, most of the US tariffs targeted Chinese goods as a reaction to alleged unfair trade practices by the Chinese. While the average US import tariff levied on Chinese goods increased from 3% to 21%, China reacted by raising tariffs on US goods from 8% to 22% (Bown, 2021).

A key goal of the US tariff hikes was to 'bring back jobs to America' (Tankersley, 2019). However, there is so far little evidence that these tariffs created significant job gains in protected manufacturing sectors (Flaaen and Pierce, 2020) or that local labour markets where protected industries concentrate experienced rising employment rates (Autor et al., 2024) or an increase in local job ads (Javorcik et al., 2022). Instead, a sizable literature shows that US import tariffs contributed to

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[22] The European Union also maintains a small program that specifically seeks to support losers from globalization. Between 2015 and 2020, an average of about 4,000 trade-displaced workers per year became eligible for support by the European Globalisation Adjustment Fund (EGF).

[23] Autor, Dorn and Hanson (2013a), Greenland, Lopresti and McHenry (2019) and Autor, Dorn and Hanson (2021) all show that local trade shocks led to only weak and sluggish population responses. One reason for the muted mobility effects is that trade-exposed locations had relatively small populations of the typically more spatially mobile foreign-born workers (Autor, Dorn and Hanson, 2023).

[24] The use of such measures spiked in the years 2020 to 2022 under the impression of the Covid-19 pandemic and the war in Ukraine (Global Trade Alert, 2024).

an increase in prices faced by US firms and consumers (Amiti, Redding and Weinstein, 2019; Fajgelbaum et al., 2020; Flaaen, Hortaçsu and Tintelnot, 2020; Cavallo et al., 2021). While tariff hikes may have political appeal in some contexts, their track record as a tool for creating aggregate employment gains remains quite weak (Autor et al., 2024, Bown et al., 2024).

8. Conclusion

The wave of globalisation that occurred in the 1990s and 2000s brought significant benefits to rich countries by lowering the costs of final consumer products and manufacturing inputs. But the rising tide did not lift all boats. Studies of workers and local labour markets from many high-income countries indicate that employees whose industries faced rising import competition from China were displaced from their manufacturing jobs and failed to readily find equally gainful employment elsewhere. The disruptive effects of trade are particularly salient in countries such as the US and UK where import growth was not matched by a commensurate rise in exports.

The recent evidence for substantial impacts of trade on employment and earnings in local labour markets contrasts with classical models of trade and labour market interactions that assumed a frictionless adjustment of workers to shocks, and empirical literature that analysed labour markets through the lens of such models and noted little repercussions of trade. The sluggish adjustment of workers to trade shocks has important distributional consequences. While consumer gains from access to cheaper products are evenly distributed in the population, the adverse labour market impacts of trade fall heavily on the employees of import-exposed industries and the residents of geographic regions where such industries clustered. Local labour markets that faced greater import competition also saw a deterioration in various social outcomes, including rising crime, greater drug mortality, and a breakdown of family structures. Residents of these trade-exposed regions became more likely to vote for non-centrist parties, especially far-right movements with nationalist agendas.

A key question for policymakers is how to help the losers from globalization. Retraining programmes and place-based interventions hold some promise, though there is considerable heterogeneity regarding the effectiveness of specific interventions. Recent years have also seen an increase in the number of trade restrictions being imposed amid growing geopolitical tensions and strategic competition. The United States introduced substantial new tariffs in 2018 and 2019 especially on Chinese goods, but these measures did not accomplish their goal of substantially strengthening domestic manufacturing employment.

CRediT authorship contribution statement

David Dorn: Writing – original draft. **Peter Levell:** Writing – review & editing.

Data availability

Data will be made available on request.

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