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Exposure to OFDI and regional labour markets: evidence for routine and non-routine jobs in Great Britain

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Abstract

This article explores the role of subnational geography in the analysis of the consequences of Outward Foreign Direct Investment (OFDI) for workers performing different typologies of jobs. We qualify jobs according to their knowledge content, degree of tradability and response to agglomeration economies. While the former two dimensions are key to signal the intensity to OFDI exposure of different typologies of jobs, the latter contributes to explain the unequal spatial distribution of benefits and losses from OFDI in terms of job creation/destruction. We theorise areas that are more severely exposed to OFDI experience job losses in routine occupations, whereas they do not necessarily benefit from job creation in non-routine jobs. To test our hypothesis, we make use of a balanced panel dataset at the local labour market level, exploiting variations in OFDI exposure and in the job composition of local areas. Our findings—robust to numerous checks, including unobserved global and local trends—indicate that job losses concentrate in regions that were more exposed to OFDI based on their initial industry mix, and affect individuals performing mainly routine tasks. In these same areas, however, no significant effects are found when looking at job creation in non-routine occupations.

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1. Introduction

Governments worldwide, especially in advanced economies, have become increasingly concerned about the rapid globalisation of production and its impact on the geography of labour. This is mainly due to the negative public perception of the consequences of Outward Foreign Direct Investment (OFDI), rather than to the predictions of academic research (e.g. Mankiw and Swagel, 2006 and Yeaple, 2006 for the USA; Abramovsky et al., 2004 and Hijzen et al., 2005 for the UK; and Hijzen et al., 2010 for Japan). The latter in fact converge towards an overall positive impact of investments abroad via new jobs generated at home as a result of productivity gains accrued from the geographical fragmentation of the value chain (e.g. Barba Navaretti and Castellani, 2004; Desai et al., 2005; Herzer, 2008, 2010). Evaluating the credibility of this negative public perception is

crucially important, as measures to prevent companies to invest abroad may represent a significant burden for public finances, and ultimately lead to a suboptimal allocation of production and labour across space. This article suggests that a deeper reflection on potential benefits/losses linked to the exposure to OFDI cannot overlook the subnational scale of the phenomenon. In fact, whereas most academic research claiming an overall positive effect of OFDI on the home economy refers mainly to the national or firm level, the consequences on jobs are seemingly felt differently at the local and regional scale.

To give account of the role of the subnational geography in the analysis of the consequences of OFDI exposure, we start from the intuition that different regions—and workers within them—are heterogeneously exposed to OFDI on the basis of their existing industry mix. This concept of exposure is especially well suited as it encompasses both the actual impact of OFDI and its potential effect via the diversion of domestic investments.[1] When a firm in a given industry decides to invest abroad, the home region specialised in that same industry is more likely to be impacted by this decision, either because some jobs are relocated abroad and/or others are created at home—thus changing the local employment composition—or because of a reduction of perspective domestic investments that, at least in the short term, are redirected toward foreign locations. Within the exposed region, however, not all workers are equally affected by this process. Rather, its effect depends on the nature of the tasks they perform (e.g. Baldwin and Robert-Nicoud, 2007; Grossman and Rossi-Hansberg, 2008; Robert-Nicoud, 2008; Crinò, 2009; Baldwin and Venables, 2013). Accordingly, in this article we classify job tasks based on three characteristics: their knowledge content, defined by the requirements in terms of knowledge or field-specific information, and its codifiability; their degree of tradability; and whether they respond to agglomeration economies. Non-routine jobs, which represent the higher echelons of the value chain, require abstract thinking, problem-solving, intuition, persuasion and creativity. Due to their knowledge content, these jobs are less tradable—as the cost of transferring complex knowledge across space has increased rather than decreased in the global economy (e.g. McCann and Acs, 2011; Leamer and Storper, 2014)—and benefit to a larger extent of agglomeration externalities, as productivity is higher in contexts where concentration of innovation, creativity and talent is stronger (Florida, 2002). Non-routine tasks, which rely on higher tacit or non-codified knowledge, are more prone to spatial agglomeration (e.g. Gertler, 2003) and therefore more likely located in core regions (e.g. Robert-Nicoud, 2008).

Routine jobs instead are well understood and codifiable in a set of sequential instructions. They are more easily tradable as they entail procedural, rule-based tasks, and their productivity mainly depends on individual efforts rather than externalities from co-workers. A typical routine worker may be a call centre operator or an accountant, whose capacity to carry out successfully their tasks benefits to a lower extent of knowledge externalities. As a result, firms have higher incentives to locate these jobs in peripheral/less advanced areas and maximise efficiency gains.

Knowledge content and degree of tradability qualify the heterogeneity of the impact of OFDI exposure across workers performing diverse tasks, such that those involved in routine jobs are more severely affected. The extent to which different typologies of jobs respond to agglomeration economies, instead, is the missing link in existing research that

1 The term exposure stems from the different probability of industries, and functions within them, to experience OFDI. The focus on exposure is not new in existing research looking at the consequences of globalization (see, e.g. exposure to import competition (Autor et al., 2013a), to trade and technological change (Autor et al., 2013b), to technological competition (Gagliardi, 2019)).

explains the unequal spatial distribution of benefits and losses from OFDI. As the lowest and highest echelons of the value chain manifest heterogeneous responses to agglomeration economies, functional specialisation within industry implies that areas where high value-added activities are concentrated differ from those specialised in low value-added activities (McCann and Acs, 2011). As a result, regions that specialise in routine tasks differ from those where non-routine tasks flourish, meaning that the indirect positive effect of OFDI exposure linked to the creation of new non-routine jobs presumably takes place in regions other than those loosing routine jobs. This evidence correlates with the tendency of Multinational Corporations (MNCs) to locate different functions according to a geographical hierarchy of subnational locations (Vernon, 1957; Hymer, 1970, 1972; Cantwell and Iammarino, 2003).

We thus hypothesise job losses to concentrate in regions that are more exposed to OFDI based on their pre-existing industry mix, and to affect individuals performing mainly routine tasks. In these same areas, however, we do not expect to see job creation in creative occupations. We test empirically this main proposition by looking at jobs across local labour market areas in Great Britain that are heterogeneously exposed to OFDI on the basis of their previous industry mix, further disentangling the impact between routine and non-routine occupations. In constructing our measure of exposure, we employ an interactive fixed effect model (Bai, 2009) that satisfies the exogeneity conditions discussed by Gobillon and Magnac (2016). Our findings provide support for the uneven spatial distribution of the benefits and costs of OFDI: in regions mostly exposed to OFDI we observe a reduction in the number of routine jobs, seemingly not compensated by job creation in non-routine occupations.

This article contributes to the existing literature on three grounds. First, the spatial implications of OFDI for labour markets remain largely underexplored: we develop our theory by looking at job typologies through the lenses of both their knowledge content and their degree of tradability—as in previous research—as well as with respect to their response to agglomeration economies in explaining the unequal impact of OFDI exposure across space. Secondly, this study is one of the first attempts to account for the endogeneity between OFDI exposure and the typology of jobs across local labour markets, as our estimation approach allows factoring out the concurrent role of changes in the industrial composition of local labour markets. Thirdly, our analysis bridges the academic and public debate on the consequences of OFDI. Our findings, despite being reconcilable with existing research assuming that job creation in non-routine jobs outpaces job losses in mundane occupations at the aggregate level, point to the concentration of economic costs in the most exposed regions—i.e. those not reaping the benefits of globalisation—thus providing some grounds for the rising discontent in the public opinion.

The article is organised as follows. Section 2 discusses the literature background of the study. Section 3 describes the data and reports some stylised facts on the relation between jobs and OFDI in Great Britain, whilst Section 4 presents the methodological approach. Section 5 discusses the main results and robustness checks. Section 6 concludes, highlighting the implications of the analysis.

2. Literature background

To evaluate the consequences of OFDI on the home labour market it is important to revise the alternative motives why firms may decide to invest abroad and to understand how

they affect different typologies of jobs. In this vein, we qualify the main job characteristics—in terms of knowledge content, degree of tradability and scope of agglomeration economies—that channel the impact of OFDI on different categories of workers performing heterogeneous tasks, and underline the spatially unequal effects of OFDI.

2.1. OFDI exposure and jobs: the role of knowledge content and tradability

A priori, firms invest abroad following two leading motivations: (i) market-seeking (or horizontal) motives and (ii) resource-seeking (or vertical) motives (Dunning, 1993). This conventional wisdom has been further expanded to account for more complex internationalisation strategies based on a combination of the two motives (e.g. Yeaple, 2003; Grossman et al., 2006).

In the case of advanced economies such as the UK, vertical OFDI often involves the relocation, or international offshoring, of low value-added activities that can be performed more cheaply under the host country's factor prices. The decision to invest financial resources abroad may be associated to a reduction in the likelihood of concurrent investments at home, meaning that foreign operations could substitute for internal investments (e.g. Stevens and Lipsey, 1992; Blomstrom et al., 1997; Desai et al., 2005; Herzer and Schrooten, 2008). The negative consequences linked to this substitution effect are expected to be more pronounced among workers performing job tasks that are abundant in low value-added activities and that are routinised, well understood and codifiable in a set of sequential instructions (e.g. Levy and Murnane, 2007; Markusen, 2005; Blinder, 2006, 2009; Jensen and Kletzer, 2010; Becker et al., 2013; Leamer and Storper, 2014). Routine tasks are typical of many mid-skilled cognitive and manual jobs, such as clerical work, repetitive production chores, and monitoring duties for which the cost of transmitting codified knowledge over space has declined substantially over time. As a result, these jobs have become increasingly tradable and therefore subject to be carried out in foreign worksites (e.g. Jensen and Kletzer, 2008; Blinder and Krueger, 2009). More recently, whereas routine jobs have mainly characterised manufacturing activities, the rising tradability of services has increased the number of service jobs falling in this category (e.g. Jensen and Kletzer, 2010), an example being customer contact and support services.[2]

The overall effect of vertical OFDI on domestic jobs, however, may not necessarily be negative. As workers' productivity in the tasks performed abroad increases, efficiency gains lead to job creation in higher value-added activities at home, according to shifts in functional specialisation towards more high-skilled and technology-intensive stages of the value chain (e.g. Baldwin and Robert-Nicoud, 2007; Grossman and Rossi-Hansberg, 2008; Robert-Nicoud, 2008; Baldwin and Venables, 2013). These new job opportunities mainly involve creative tasks that require abstract thinking, problem-solving, intuition, persuasion, and creativity (Acemoglu and Autor, 2011). These tasks are typical of professional, managerial, technical, and creative occupations, such as law, medicine, science, engineering, design, and management, among many others, but they also qualify manual tasks that require interpersonal and environmental adaptability, such as food preparation and serving, in-person health assistance and numerous jobs in security services. They are characterised by limited tradability, either because the transmission costs associated with non-codifiable

2 https://www.theguardian.com/business/2019/dec/06/john-lewis-to-offshore-contact-centre-jobs-as-uk-staff-laid-off.

knowledge have remained stable or even increased over time, or because they require proximity and personal interaction between provider and user (Dorn, 2009; Autor, 2013).

Horizontal motives are, instead, more frequently associated with investment decisions that involve similar countries. They have proved to be an important component of overall flows and a primary tool firms use to expand their markets (e.g. Dunning, 1998; Dunning and Lundan, 2008), especially when the mother firm attracts enough demand in the host country and transportation costs are substantial, and/or when OFDI is directed towards markets where firms can access specific, localised knowledge pools (Bathelt and Buchholz, 2019). The first set of conditions emerge when the home country has a comparative advantage, which for a country like the UK should be the case in high value-added activities (Driffield et al., 2009). The second set of conditions, instead, characterises the cases in which firms explore new markets as a source of new knowledge. This category encompasses the increasing role played by the location of R&D functions for knowledge-creation purposes in centres of excellence where technological activities of particular industries are geographically agglomerated (Cantwell and Janne, 1999; Santos-Paulino et al., 2014; Bathelt and Buchholz, 2019). In either case, OFDI has a modest impact or, at best, the potential to generate new non-routine jobs at home, which either reflects higher demand for head quartered coordination activities (e.g. Castellani et al., 2008; Hijzen et al. 2011), or spills over from the expansion of the domestic knowledge base of the firm (Bathelt and Buchholz, 2019).

Yet, in evaluating different OFDI motives, it should be noted that 'the distinction between horizontal and vertical FDI is useful for pedagogic purposes but otherwise not very helpful' (Neary, 2009, 215). Such a distinction seems to have gradually diminished its power to describe the main organisational forms of the MNC global operations, which followed over time increasingly complex integration strategies rather than those in either category (e.g. Yeaple, 2003; Grossman et al., 2006; Neary, 2009; Iammarino and McCann, 2013). Contemporary MNCs are mostly both horizontally and vertically integrated and pursue strategies of specialisation and diversification in global production networks and value chains across products and places, as firstly described by Caves (1982). Geographical space, thus, emerges as an ever more crucial element to grasp the home impact of OFDI.

2.2. Introducing geography: the role of agglomeration economies

Regardless of the motive behind the decision to invest abroad, OFDI is generally associated to either an overall positive or modestly negative impact on employment at home. Most of the research supporting this claim looks at the net effect at the country level, where potential losses in routine occupations are often compensated by new non-routine jobs. To the best of our knowledge, very few contributions address the impact of OFDI on employment at the subnational scale. Mariotti et al. (2003) study the relationship between Italian MNCs employment abroad and labour intensity of home production by aggregating firm level data into (broad) region-sectors to capture OFDI direct (firm) and indirect (environment) effects: the relationship turns out to be negative for vertical investments toward less developed economies, and positive for horizontal investments toward advanced countries. Federico and Minerva (2008) assess the impact of Italy's outward FDI on local (provincial) employment growth between 1996 and 2001. In their setting, OFDI is associated with faster local employment growth, relatively to the national industry average, though they do not provide evidence on the effect across heterogeneous categories of workers.

Elia et al. (2009), looking at the impact on low- versus high-skilled labour, find skills and capabilities' increases within the investing MNC, but a negative impact on low-skilled workers in the MNC (broad) region-industry; the latter affects also the highly skilled if investments are directed toward high income countries. More recently, Bathelt and Buchholz (2019) look at the spatial impact of greenfield OFDI from the USA, suggesting that it operates as a catalyst for economic development for those urban regions that are more globally connected: OFDI seems to increase income inequality, with the effect driven by the positive impact on highly educated workers.

This scanty evidence, focussed on the Italian and USA cases, show that neglecting the geographical structure of labour markets leads to underestimate the consequences of OFDI on spatial inequality across areas that are heterogeneously exposed to this trend and differently able to reap the benefits associated with globalisation. Accounting for spatial heterogeneity in OFDI exposure, and in the capacity to benefit from the international reorganisation of the value chain, requires working at two different levels of analysis: across and within industries. The industry level is in fact crucial, as it encompasses differences in both technological regimes and competitive environments (Bramucci et al., 2017). Regions specialised in industries that have been more extensively involved in investments abroad are more likely to be impacted by this decision, either in terms of existing activities relocated elsewhere and/or reorganised domestically, or because of lower resources potentially invested locally.

The within-industry level, instead, responds to the observation that specialisation following OFDI has been mainly functional within industry, rather than across the industry mix (Crinò, 2009; Kemeny and Rigby, 2012). That is, within the same industry, OFDI mostly affects routine occupations based on codifiable knowledge and easy tradability, whereas non-routine jobs are both less directly exposed and eventually benefitting from the reorganisation of the value chain across geographical boundaries. Functional specialisation, however, is not an a-spatial phenomenon and is generally associated with a progressive polarisation between higher order locations, where high value-added/non-routine activities are concentrated, and lower order locations that are the actual losers of globalisation (Cantwell and Iammarino, 2003).

The rationale for this spatial dichotomisation needs to be searched into the heterogeneous role that agglomeration economies play for different types of jobs. Accordingly, Robert-Nicoud's (2008) NEG model sets a theoretical framework for analysing the spatial distribution of gains and losses of the geographical fragmentation of production. The model is based on the classic rationale that the functional organisation of production abroad comes at the expenses of workers employed in routine occupations, whose jobs are subject to relocation, while generating efficiency gains that translate in greater job opportunities for workers performing high value-added, creative tasks. It then incorporates the observation that agglomeration economies differ substantially between routine and non-routine occupations, being much stronger for the latter. The geography in the model is the stylised North–South, predicting international divergence at a macro geographical level. However, it also offers a powerful theoretical motivation to look at the spatially differentiated impact of OFDI within developed countries. On the one hand, agglomeration forces in higher order regions strengthen specialisation in high profile professional, managerial and technical occupations (raising the local demand for non-routine jobs in manufacturing and services, e.g. Autor and Dorn, 2013). These are areas where inward and outward FDIs are generally balanced in a variety of functions that favour capabilities upgrading (Crescenzi and Iammarino, 2017; Bathelt and Buchholz, 2019). In these higher-order

locations, agglomeration forces trigger job creation from both foreign MNCs looking for hotspots of talent and creativity (e.g. Florida, 2002) and domestic MNCs that capitalise the returns of efficiency gains accumulated through the geographical slicing up of their value chain. On the other hand, the role of agglomeration economies is less crucial in the case of routine occupations, such that in regions mostly specialised in these activities, the negative consequences of OFDI are especially pronounced, whereas the opportunities linked to the reorganisation of the value chain are difficult to reap out.

By accounting for the role of agglomeration economies as a third characteristic of routine versus non-routine jobs, we introduce the geographical (subnational) element into the analysis of the consequences of OFDI exposure. Functional specialisation brings along a 'geographical specialisation' (Hymer, 1972) that reflects the hierarchy of corporate decision making. This geographical specialisation takes place because firms choose to separate their strategic—non-routine intensive—activities, i.e. management and R&D, from their ordinary—routine intensive—activities, i.e. actual production and customer support; the basic motivation for this split being the possibility to maximise the benefits from regionally bound location factors (Audretsch et al., 2011; Iammarino and McCann, 2018). Accordingly, highest-level MNC functions tend to concentrate in the world's major hubs, surrounded, in turn, by regional subcapitals. This process generates a geographical hierarchy, with 'intermediate' and 'lower-level' activities distributed across lower-tier urban centres and regions (Hymer, 1970): internationalisation reinforces disparities between core and peripheral areas, creating territorial hierarchies *within* and *across* countries (Cantwell and Iammarino, 2003). As a result of this geographical specialisation that reflects the nature of the distribution of business functions across space, the locus where routine jobs are lost hardly coincides with those where non-routine occupations are generated. This further implies that the distribution of benefits and costs following OFDI remains highly spatially unequal and exacerbates the polarisation between areas that lose employment and competitiveness and those that gain from globalisation.

2.3. Proposition

On the basis of the above characterisation of jobs according to their knowledge content, degree of tradability and responsiveness to agglomeration economies, we formulate a testable proposition that relates the regional degree of exposure to OFDI to labour markets' impacts.

We postulate that *regions that are most exposed to OFDI experience a reduction in routine jobs. At the same time, limited job creation in non-routine occupations takes place in these same regions.*

Routine jobs, due to the codified nature of the knowledge required to perform them and their relatively high degree of tradability, are more severely affected by OFDI. As they also exhibit limited responsiveness to agglomeration economies, their patterns of geographical specialisation differ from that of non-routine occupations: places in which routine jobs are destroyed as a consequence of OFDI do not coincide with those where new employment opportunities are generated in non-routine occupations.

3. Data and descriptive evidence

3.1. Data and main variables' definition

In order to analyse the impact on jobs of OFDI exposure at the subnational level, this article relies on a novel dataset based on the combination of different microdata sources

aiming at creating a balanced panel for Great Britain's local labour market areas (Travel to Work Areas—TTWAs), defined as self-contained labour markets, for which at least 75% of the resident economically active population works and lives in the same area. We collected information on 229 TTWAs out of a total of 232, as the remaining 3 TTWAs coincide with remote rural areas in Scotland for which data on some of the main variables of interest were not available.

The construction of our main variables responds to two main considerations. First, our interest is in measuring the typology of job tasks effectively performed by workers. Data for job occupations are extracted from the Annual Survey of Hours and Earnings, sampled using 1% of the total population of workers on the PAYE register. Data contain detailed geographical information on the location of each employee, allowing for the identification of those who live and work in each TTWA. Occupational categories—routine and non-routine—come from the Standard Occupational Classification (SOC) revised in 2000, based on two main criteria: (i) type of job task performed and (ii) type of competences (skills) required for performing tasks and duties. Following Acemoglu and Autor (2011), we classify occupations as either routine or non-routine. Though workers performing non-routine tasks normally have high or specialist levels of education and analytical capabilities, the routine/non-routine distinction does not fully overlap with the high/low-skills classification. Both routine and non-routine jobs can, in fact, qualify as cognitive or manual, with cognitive occupations requiring on average higher formal educational achievements than manual jobs. Therefore, more than with respect to the 'size' of the knowledge required, this classification refers to its intrinsic nature. The list of occupations in each broad group according to the SOC 2000 is reported in the Supplementary Appendix Table A1.

Secondly, as mentioned in the previous section, we adopt an actual measure of OFDI flows. Data for OFDI come from the ONS Annual Survey into Foreign Investments, which exploits national account data from the balance of payment. The survey contains information on OFDI carried out by Great Britain-based MNCs for the period 1998–2008 by country of destination and industrial sector of the OFDI (SIC2003 classification).[3] OFDI is qualified as a financial flow, covering the financial amount invested in an affiliate enterprise abroad by the parent company.[4] Our data cover investments abroad for both manufacturing and services, and by country of destination.[5] This is an important information as it allows to distinguish, at least in general terms, between vertical and horizontal

3 The years 1996 and 1997 were excluded from the analysis due to a major coding change for waves before 1998. As the OFDI variable is entered in a lagged form, only data until 2007 are used in the estimates.

4 A direct investment abroad is recorded when it is made for a 'lasting interest', and only when the firm owns more than a 10% equity stake in the company in which it is investing. Unfortunately, the data files do not differentiate between associates abroad (10–50% capital owned by the parent) and subsidiaries abroad (more than 50% capital owned by the parent)—as they are both classified as 'foreign subsidiaries'. Consequently, the analysis takes into account both categories as one. The investment indicator depicts net figures, i.e. investments net of disinvestments. FDI flows include acquisitions/disposals of equity capital, reinvestment of earnings, and intercompany debt. This definition of OFDI is in accordance with the international standards set out in the third edition of the OECD Benchmark Definition of FDI (BD3) and the fifth edition of the IMF Balance of Payments Manual (BPM5), ensuring that UK FDI statistics are internationally comparable.

5 Developed and transition economies include EU27 (pre-2013), Iceland, Norway, Switzerland, Australia, Canada, Japan, New Zealand, USA, Albania, Bosnia-Herzegovina, Croatia, Montenegro, Serbia, the former Yugoslav Republic of Macedonia, Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. Emerging economies include Brazil, India, China and South Africa. All remaining countries are classified as either developing or less-developed economies. The classification is taken from the World Economic Situation and Prospects.

OFDI. Descriptive statistics on OFDI flows by industry and recipient country are reported in the Supplementary Appendix Table A2.

In addition, we collected a set of demographic controls by TTWA, such as the shares of manufacturing employment, youth population, and highly educated population, from the UK Labour Force Survey (LFS). The LFS is a quarterly representative survey of households living at private addresses in the UK. The quarterly data, sampling around 60,000 households, were pooled to construct annual figures.

The full list of variables used in the analysis and their sources is reported in the Supplementary Appendix Table A.3.

3.2. Descriptive statistics on job composition and OFDI in Great Britain

Great Britain represents a particularly interesting case for analysing how OFDI may alter occupational composition at the subnational scale. First, the country underwent a progressive transformation of its labour market, with disadvantages increasingly concentrated in specific occupational categories (e.g. Goos and Manning, 2007). Routine occupations declined rapidly, whereas a moderate increase was recorded in the number of non-routine jobs (Figure 1).

These trends, however, were not uniform across the country conditional on the initial composition of the local workforce. Routine occupations have traditionally been overrepresented in some parts of Britain, mainly in the Midlands, the North and the North–West, Wales, and parts of Scotland. Non-routine activities are concentrated in London and the South–East, with spokes elsewhere in cities such as Aberdeen, Edinburgh, Harrogate, Manchester, Bristol. Labour market disadvantages have become increasingly concentrated

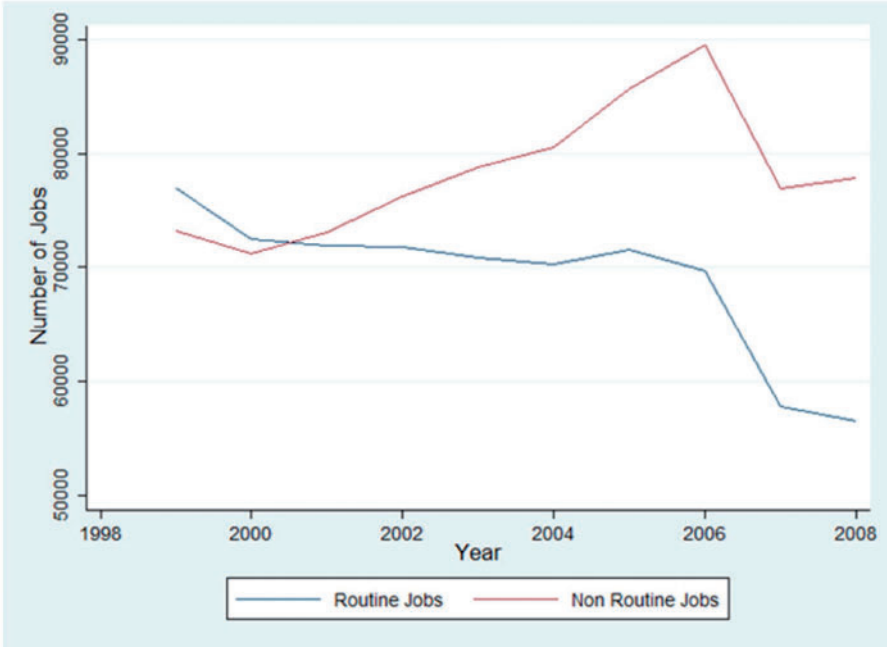

Figure 1. Routine and non-routine jobs in Great Britain—1999–2008.
Source: ONS/ASHE.

both geographically within the country, with a strong spatial clustering at the extreme of the occupational distribution, and sectorally, with some industries undergoing a pronounced change in their occupational composition (McCann, 2016).

Great Britain has also experienced sizable OFDI trends, with a growing percentage of international investments, outsourcing, and offshoring concentrated in the service industries (e.g. Abramovsky et al., 2004; Hijzen et al., 2005; Sako, 2006). Previous literature pointed at the uneven spatial pattern of employment change due to aggregate trends in technological progress and outward internationalisation, resulting in a progressive deindustrialisation of the UK over time: during the 1980s and 1990s, job destruction was not limited to old industrial hubs, as Inner London lost nearly a quarter of a million jobs (e.g. Cowling, 1984; Turok and Edge, 1999). Although job losses were relatively spread across the country, the response of local markets to such changes was significantly different. Sizeable and growing job gaps became evident in cities like Glasgow, Liverpool and Sheffield, which fared considerably less well than Edinburgh, Cardiff and, especially, London (Turok and Edge, 1999). This evidence, enduring in the 2000s, can be explained by differences in local capabilities of shifting industrial structures towards higher value-added activities.

More generally, the decreasing share of routine occupations has been matched by a within-industry rise in the relative skill intensity of production in almost all advanced countries (e.g. Bernard and Jensen, 1997; Berman et al., 1998; Kemeny and Rigby, 2012). For Great Britain this is confirmed when comparing, over the period 1999–2008, the growth rate of routine with that of non-routine occupations by macro-sectors (Figure 2). Whereas the former declined in both manufacturing and services, the latter followed a

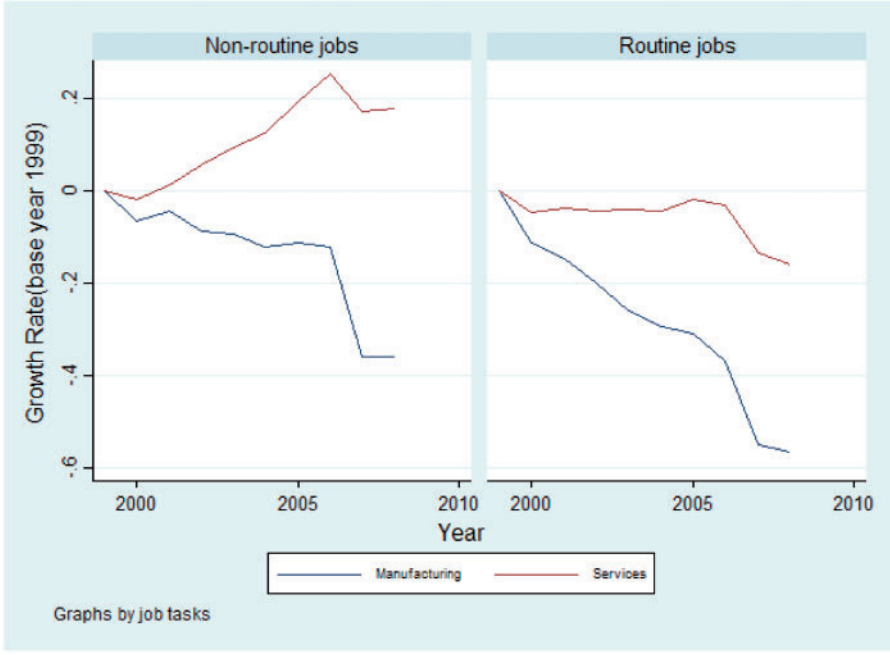

Figure 2. Routine and non-routine jobs, macro-sectors, 1999–2008.
Source: ONS/ASHE. Note: Sectors classified by broad industrial group.

more heterogeneous trend, with a pronounced loss in manufacturing and a general increase in service industries.

Among the most plausible explanations behind such profound transformations, the progressive international fragmentation of production via OFDI carried out by UK-based MNCs ranks high. Our data for Great Britain show that over the period 1998–2008 the total flow of OFDI remained fairly stable, but the share toward developing and emerging countries—although in aggregate still small in absolute terms—increased steadily (with the exception of the Internet bubble bursting of 2002), reaching almost the value of OFDI towards advanced and transition economies in 2008. This is consistent with previous evidence indicating that, in the period 1987–1996 (just before the years, we observe) UK outward FDI in manufacturing were mostly directed to lower labour costs locations, reducing in particular the demand for domestic unskilled labour but also, to some extent, that for skilled labour (Driffield et al., 2009). In the words of Driffield et al. (2009, 197): 'The only form of outward investment that increases labour demand is the effect on skilled labour where the UK sector has an unambiguous technology advantage; but this form of investment (type 1) typically accounts for less than 10 per cent of total UK outward FDI'.

In addition, investments abroad over time originated increasingly from service industries, consistently with the evidence of the steady growth in the tradability of services (Lewin et al., 2009; Crinò, 2010; Jensen and Pedersen, 2011). Over the years 1998–2008 here observed, the largest investing service industries were Transport, storage and communication, Financial intermediation, Wholesale and retail trade, and Real estate, renting and business activities; the top investors industries in manufacturing were Coke, chemicals, plastic and non-metal products, Food, beverage and tobacco, and Transports; Mining and Quarrying ranked third in OFDI over the period.

4. Empirical framework: econometric model and identification approach

The estimation strategy for the effect of OFDI exposure on different types of domestic jobs across local labour markets is based on panel data techniques to control for time and area specific characteristics. The estimation equation takes the following form:

$$\text{Jobs}_t^c = \alpha_c + \mu_t + \beta_1 \text{OFDI}_t^c + \beta X_t^c + \varepsilon_t^c \quad (1)$$

where Jobs_t^c is the dependent variable, measuring the number of routine or non-routine jobs in each TTWA c at time t. The variable is standardised by using the standard deviation across all periods and TTWAs.[6] This definition allows us to look at variations in the number of routine/non-routine jobs in local labour markets relative to the rest of the country, providing insights on the evolution of the spatial distribution of different types of occupations.

The independent variable of interest, OFDI_t^c measures the degree of exposure of local labour markets to OFDI. We draw from the econometric literature on common shocks (Bai, 2009) to model the impact of an observable time trend component (i.e. OFDI) on

6 Our dependent variable is interpreted in terms of the relative variation in the number of routine/non-routine occupations across TTWA. It could also be constructed as employment rate in routine/non-routine occupations: unfortunately, ASHE data are restricted to people in employment, preventing us from setting-up an appropriate denominator.

different population units (i.e. TTWAs) by means of a factor loading (i.e. the share of workers by sector). The regressor of interest is thus constructed as an interaction term, which for identification purposes keeps the factor loading as time invariant (Gobillon and Magnac, 2016). Local labour markets are supposed to be heterogeneously exposed to OFDI based on their pre-existing industry specialisation. The variable is constructed as follows:

$$\mathrm{OFDI}_{t}^{c} = \sum_{s} (\mathrm{Employment}_{c\ ,\ 1997}^{s} \times \mathrm{OFDI}_{t-1}^{s}) \tag{2}$$

The financial amount of OFDI by two digits sector s (SIC2003) at $t-1$ is attributed to each TTWA c by means of the share of people employed in sector s in 1997. This variable reflects the exogeneity conditions of the shift-share approach (e.g. Moretti, 2010; Faggio and Overman, 2014), since it attributes the impact of a national trend (i.e. OFDI) to local labour markets on the basis of their industry specialisation before the time window of analysis. This implies assuming that each TTWA is exposed to OFDI as if its industry mix had remained unchanged since 1997. We are thus able to limit concerns about simultaneous changes in the industry specialisation of TTWAs, which may be potentially correlated with OFDI (see also Gagliardi, 2019).

4.1. Endogeneity concerns

The possibility of estimating the causal effect of OFDI exposure on jobs relies on the absence of any additional bias that may affect the relation of interest. We identify two possible sources of endogeneity concerns in our framework.

4.1.1.Concurrent global trends

Existing research has recognised the concurrency and interdependence between a variety of global trends that may induce changes in the occupational composition of TTWAs to the same extent and in the same direction as those theorised for OFDI exposure. The main candidates are exposure to computerisation (Taylor and Driffield, 2005; Goos et al., 2014; Kok and Weel, 2014), and import competition (Autor et al., 2013a; Kemeny et al., 2015). Goos et al. (2014) show that routine-biased technological change is a much more important determinant of job polarisation than offshoring. We therefore include in our baseline estimation controls for both exposure to ICT investments and import competition: we expect both computerisation and import competition to be negatively correlated with routine occupations. Both regressors are constructed following a structure similar to that adopted for our main independent variable, such that investments in ICT and import flows by industry are attributed to each TTWA on the basis of its industrial composition in 1997.[7] In addition, we also control for changes in each local labour market job composition due to international migration by collecting information on immigrant inflows in each TTWA

7 Data on ICT investments, measured by means of cross industry differences in the value of acquisitions of new or existing fixed assets in ICT in the previous 3 years, come from the EU-KLEMS database. Alternative specifications using 5 and 1 years were also used for robustness checks. Data on import competition come from COMTRADE provided by the World Bank by industry and refer to import flows from China and India in the last 3 years. Robustness checks involved using a 5-year lag and by varying the sample of partner countries and focusing on all non-OECD countries, as in Machin and Van Reenen (1998).

from the ONS Population Estimates. As shown by Gagliardi and Lemos (2015), the UK has undergone significant immigration inflows in the last decades, which may have altered labour supply especially for specific occupational categories.

4.1.2.Unobserved local trends

A remaining primary concern is associated with the correlation between the factor loading (e.g. the initial industry mix of each TTWA) and the error term due to unobserved endogenous local trends (Gobillon and Magnac, 2016). As mentioned above, the construction of the independent variable of interest by means of a shift-share methodology—which keeps the factor loading as fixed—should limit this possibility. Nonetheless, we perform three key robustness checks. First, we control for unobserved local trends to factor out any additional unobserved determinants of the endogenous evolution of local labour markets.[8] We interpret this as the most conservative estimates for the impact of OFDI exposure on jobs, which should reasonably provide a lower bound of the effect. Secondly, we employ an instrumental variable that exploits variations across industries in the observed minimum tariff rates as an exogenous shifter of firms' incentives towards OFDI. To this scope, we collect information on changes in product level tariffs over time and recover cross-industry figures of tariff levels by means of product import by sector. The instrument is constructed exploiting cross industry variations in the previous three years in the minimum tariff rate for import in Europe from the rest of the world:

$$\text{Tariffs}_{c,t} = \sum_{s} (\text{Employment}^{s}_{c,1997} \times \text{MinimumTariffRate}^{s}_{t-(t-3)}) \tag{3}$$

The rationale behind the IV strategy exploits the relation between changes in tariffs and firm OFDI strategies, as both provide incentives for firms to exploit the benefits coming from the fragmentation of their value chain. Unlike OFDI, however, changes in tariffs mirror international financial, macro, and policy determinants that should not reflect in specific trends in Great Britain (Mion and Zhu, 2013). As such, they hardly correlate with any endogenous local labour market dynamics. As the bulk of international trade nowadays is explained by intra-firm exchanges, an increase in the minimum tariff level should reduce firms' incentives to invest abroad/offshore their activities. We thus expect the instrument to be negatively correlated with the instrumented variable.

Finally, we control for internal labour mobility to account for the possibility that part of the effect of OFDI exposure on routine jobs is reflected into people employed in these occupations moving out from the most exposed regions into the least affected ones.

5. Results

5.1. Baseline model

The results for our main specification are reported in Table 1. Panel I relates to routine occupations while Panel II estimates the model adopting non-routine occupations as the dependent variable. OFDI exposure is negatively and significantly associated at 1% to

8 TTWA-specific linear trends are constructed by interacting TTWA dummies with a linear trend, as customary in previous studies. In our specification, they control for any unobserved time varying TTWA-specific trend potentially driving the results.

Table 1. OFDI exposure and local labour market effects (1999–2008)—main results

Dependent variable: Standardised number of routine/non-routine jobs						
	(1)	(2)	(3)	(4)	(5)	(6)
	Routine jobs			Non-routine jobs		
	Panel I			Panel II		
OFDI	−0.0064***	−0.0064***	−0.0063***	0.0007*	0.0007*	0.0007
	(0.0014)	(0.0014)	(0.0014)	(0.0004)	(0.0004)	(0.0004)
Manufacturing	0.0023	0.0022	0.0012	−0.0082**	−0.0082**	−0.0061*
	(0.0091)	(0.0090)	(0.0094)	(0.0035)	(0.0035)	(0.0035)
Wage non-routine jobs					0.0026	0.0050
					(0.0120)	(0.0120)
Wage routine jobs		0.0038	0.0038			
		(0.0034)	(0.0034)			
Skilled population			−0.0096			0.0202***
			(0.0095)			(0.0064)
Young population			−0.0051			0.0097**
			(0.0081)			(0.0048)
Observations	2290	2290	2290	2290	2290	2290
R^2	0.1613	0.1614	0.1616	0.1885	0.1885	0.1905
TTWA dummies	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes

Note: $N = 2290$ (229 TTWA × 10 years). All variables expressed in logs. Clustered–robust standard errors at TTWA level in parentheses. Estimates are mean centred by TTWA and include time dummies.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

variations in the number of routine occupations (Panel I, Column 1). This implies that a one per cent increase in the amount of OFDI leads to a 0.006 standard deviation reduction in the number of routine occupations across TTWAs.[9] Hence, places more exposed to OFDI on the basis of their pre-existing industry specialisation have witnessed a significant decline in routine jobs, as a consequence of MNE investment strategies abroad during the period of analysis. This result holds also after controlling for wages and other TTWA controls, including the share of skilled population—as a shortage of qualified resources may drive firms' choice to locate in the region low value-added functions—and the share of young population to account for demographic aspects that may influence the set of skills available in the population. The evidence on non-routine occupations shows that the impact of OFDI, although positive, is not statistically significant in areas more exposed to OFDI. All other controls display the expected sign. The share of manufacturing employment is positively associated with routine jobs, though not significantly, and negatively and significantly associated with non-routine occupations. The shares of skilled and young population correlate positively and significantly with the number of non-routine job tasks, and negatively—but, again, both regressors are not statistically significant—with routine jobs. These results confirm our prior regarding the spatially heterogeneous effect across

9 Note that the standard deviation in Y is equal to 651.5074. Therefore, a 1% increase in the amount of OFDI generates a reduction of 4.17 routine jobs.

Table 2. OFDI exposure and local labour market effects (1999–2008)—by recipient area

Dependent variable: Standardised number of routine/non-routine jobs				
	(1) Routine jobs	(2) Non-routine jobs	(3) Routine jobs	(4) Non-routine jobs
OFDI (Developing and emerging)	−0.0065***	0.0043***		
	(0.0017)	(0.0013)		
OFDI (Developed and transition)			−0.0036***	0.0002
			(0.0011)	(0.0004)
Manufacturing	0.0015	−0.0063*	0.0013	−0.0061*
	(0.0095)	(0.0035)	(0.0095)	(0.0035)
Wage non-routine jobs		0.0081		0.0046
		(0.0122)		(0.0120)
Wage routine jobs	0.0034		0.0033	
	(0.0034)		(0.0033)	
Skilled population	−0.0088	0.0191***	−0.0101	0.0203***
	(0.0094)	(0.0065)	(0.0095)	(0.0064)
Young population	−0.0040	0.0087*	−0.0054	0.0097**
	(0.0081)	(0.0048)	(0.0081)	(0.0048)
Observations	2290	2290	2290	2290
R^2	0.1615	0.1950	0.1598	0.1904
TTWA dummies	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes

Note: $N = 2290$ (229 TTWA × 10 years). All variables expressed in logs. Clustered–robust standard errors at TTWA level in parentheses. Estimates are mean centred by TTWA and include time dummies.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

job types of OFDI exposure and support our claim on the uneven distribution of benefits and losses across labour markets.

Our baseline model is also estimated by looking at OFDI across macro-areas of destination (Table 2), distinguishing between developing and emerging, and developed and transition economies. This information is relevant as it may help capturing the broad distinction between market-seeking (or horizontal) and resource-seeking (or vertical) motives of OFDI, respectively. The negative impact of OFDI on routine occupations is confirmed in both cases, although sensibly lower in the case of developed countries as recipients.[10] In contrast, a significant positive effect on non-routine jobs emerges for OFDI towards developing and emerging countries. In general, such evidence is qualitatively consistent with similar studies at the national level (Abramovsky et al., 2004; Hijzen et al., 2005; Driffield et al., 2009). Yet, in our case, it points to a further element of spatial heterogeneity in the effect of OFDI exposure: the possibility to compensate job losses in routine occupations with the creation of non-routine jobs—often evoked by the literature—is neither straightforward nor automatic, as it occurs prevalently in regions where the industry mix favours OFDI of this type. During the period under analysis, British OFDIs are highly skewed towards developed and transition economies: almost 63% of the number of

10 The negative effect on routine jobs of OFDI towards developed and transition economies is reasonably driven by investments towards the latter category of recipients, particularly relevant in the time frame under analysis (1999–2008) that covers the 2004 and 2007 EU enlargements to Central and Eastern European countries.

Table 3. OFDI exposure and local labour market effects (1999–2008)—concurrent global trends

Dependent variable: standardised number of routine jobs				
	(1) Routine jobs	(2) Routine jobs	(3) Routine jobs	(4) Routine jobs
OFDI	−0.0050***	−0.0062***	−0.0080***	−0.0081***
	(0.0013)	(0.0014)	(0.0017)	(0.0017)
Manufacturing	0.0046	0.0009	−0.0050	−0.0049
	(0.0086)	(0.0094)	(0.0163)	(0.0164)
Wage routine jobs	0.0081**	0.0037	−0.0367***	−0.0368***
	(0.0038)	(0.0032)	(0.0130)	(0.0129)
Skilled population	−0.0072	−0.0093	0.0003	−0.0001
	(0.0092)	(0.0095)	(0.0191)	(0.0188)
Young population	−0.0015	−0.0048	0.0166	0.0171
	(0.0078)	(0.0080)	(0.0135)	(0.0131)
Computerisation	−0.0296***			
	(0.0087)			
Import competition		−0.0007		
		(0.0008)		
Immigrant inflows			−0.0138	
			(0.0498)	
Observations	2290	2290	1110	1110
R^2	0.1708	0.1617	0.2392	0.2385
TTWA dummies	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes

Note: $N = 2290$ (229 TTWA × 10 years) in columns 1 and 2. In columns 3 and 4, the number of observations is lower because only TTWAs in England and Wales are included and only for the time interval 2002–7. All variables expressed in logs. Clustered–robust standard errors at TTWA level in parentheses. Estimates are mean centred by TTWA and include time dummies.***$p < 0.01$,**$p < 0.05$,*$p < 0.1$.

OFDI went to advanced economies, and this percentage rose to 87% when considering the actual financial amount of total OFDI (see Supplementary Appendix Table A2). Overall, this suggests that compensation mechanisms via job creation in non-routine occupations were rather weak and spatially concentrated in the observed period, and that those regions most affected by job destruction in routine jobs were unlikely to be compensated, at least in the relative short term captured in our estimates.[11]

5.2. Robustness checks

Table 3 addresses the concerns about the role of other concurrent global trends that may correlate with OFDI exposure and affect the local job composition in the same direction. Omitting to control for this dimension would imply an overestimation of the actual effect

11 Additional specifications were run exploiting further dimensions: by decomposing manual and cognitive routine occupations to check whether differences in skill levels play any role over and above the typology of task performed; by looking at differences in the tradability of jobs across industries (and using two different definitions of tradable and non-tradable); and by analyzing the effect across predominantly urban and non-predominantly urban TTWA, which should capture the intensity of agglomeration economies. Results are reported in the Supplementary Appendix Table A.4.

Table 4. ODFI exposure and local labour market effects (1999–2008)—unobserved local trends

Dependent variable: standardised number of routine jobs						
	(1) Routine jobs	(2) OFDI	(3) Routine jobs	(4) OFDI	(5) Routine jobs	(6) Routine jobs
		First stage	IV	First stage	IV	
OFDI	−0.017***		−0.0419**		−0.0418**	−0.0078***
	(0.0006)		(0.0199)		(0.0197)	(0.0017)
Manufacturing	−0.0083*	−0.0055	0.0006	0.0170	0.0011	−0.0053
	(0.0050)	(0.1729)	(0.0090)	(0.1742)	(0.0090)	(0.0169)
Wage routine jobs	0.0019	0.0933	0.0071	0.1013	0.0073	−0.0383***
	(0.0036)	(0.2299)	(0.0096)	(0.2270)	(0.0095)	(0.0139)
Skilled population	0.0091	0.1261	−0.0032	0.0967	−0.0039	0.0005
	(0.0065)	(0.1835)	(0.0110)	(0.1837)	(0.0109)	(0.0184)
Young population	0.0067	0.0803	−0.0018	0.0595	−0.0023	0.0159
	(0.0059)	(0.1778)	(0.0094)	(0.1751)	(0.0093)	(0.0132)
Minimum tariff rate		−2.2082***		−2.2164***		
		(0.5922)		(0.5792)		
Import competition				0.0653**	0.0016	
				(0.0272)	(0.0016)	
Labour mobility						−0.0821
						(0.1123)
Observations	2290	2290	2290	2290	2290	1110
R^2	0.7907	0.2998	0.0673	0.3079	0.0683	0.2397
TTWA dummies	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Area trends	Yes	No	No	No	No	No
F-first stage		13.91		14.64		

Note: $N = 2290$ (229 TTWA × 10 years) in columns 1–5. In column 6, the number of observations is lower because only TTWAs in England and Wales are included and only for the time interval 2002–7. All variables expressed in logs. Clustered–robust standard errors at TTWA level in parentheses. Estimates are mean centred by TTWA and include time dummies.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

of OFDI. Column 1 reports our main specification further augmented to control for measures of exposure to computerisation trends. The exposure to computerisation is—as expected—negatively and significantly correlated with routine jobs, as automation is more likely to substitute for standardised tasks. The inclusion of this control reduces slightly the magnitude of the OFDI exposure coefficient, though it remains significant and negatively correlated to routine job tasks. In columns 2 and 3, we include the controls for exposure to import competition and immigrant inflows. According to our prior, both regressors are negatively associated with routine occupations but not statistically significant (baseline specification reported in Column 4 for the restricted sample for which migration data is available). Overall, our findings show a remarkable consistency across different specifications, suggesting that the negative effect of OFDI on routine occupations found in Table 1 is indeed robust to concurrent global trends.

The last set of robustness checks is performed to account for unobserved local trends. Table 4 (Column 1) presents the most demanding specification, which controls for any unobserved local trends at the TTWA level. The coefficient for OFDI increases in magnitude

and remains negatively and significantly correlated with routine jobs. Column 3 reports the estimation employing the instrumental variable discussed in Section 4.1; first-stage results are shown in Column 2. As expected, the instrument is negatively and strongly correlated with the instrumented variable (the *F*-statistics for the first stage is well above the value of 10 proposed by the 'rule of thumb' of Staiger and Stock (1994) and consistent with Stock and Yogo (2005) threshold values). Our OFDI exposure regressor remains significant and negatively correlated with routine jobs. Column 5 presents the IV specification further controlling for import competition (first stage in Column 4). This is to rule out the concern that our instrument correlates with international trade, rather than just with OFDI exposure, which would imply a break in the exclusion restrictions. The first stage with an *F*-statistics of 14.64, against 13.91 for the baseline specification, confirms that this is not the case. Finally, in column 6, for the restricted sample with available data, we include a control for outward mobility from the focal TTWA to other TTWAs, which turns out to be negatively correlated with routine jobs but not statistically significant.

6. Conclusions and discussion

This article provides a novel perspective to examine the impact of OFDI on labour market outcomes. Through the lens of the subnational distribution of benefits and costs in terms of job tasks and accounting for the geographical destination of OFDI, this study uncovers that OFDI—from an economy as internationalised as that of Great Britain—has generally led to job destruction in routine occupations. Our most novel finding is that this negative effect is significantly stronger in those local labour markets that were more exposed to OFDI due to their initial industry specialisation, unable to retain locally production activities and/or domestic investments. In these same local labour markets, job losses in routine occupations are hardly compensated by the upgrading of the local industrial structure and the creation of new opportunities associated to shifts to high value-added non-routine jobs.

Our findings also suggest that the impact of OFDI is influenced by the global strategies pursued by MNCs. We found that OFDI towards both advanced/transition economies and developing/emerging countries displays a clear negative impact on routine occupations, a sign of the complexity of MNC strategies in global value chains, mixing up horizontal integration associated with proximity to demand, and vertical integration linked to the search for lower costs or better knowledge sources in increasingly spatially fragmented production systems. The benefits in terms of creation of non-routine jobs emerge only for OFDI towards developing and emerging markets, and originate mainly from places that are likely involved in this type of investments abroad, which still explain a residual (although growing) amount of actual outflows.

Nothing in our results indicates that, as the overall home impact of OFDI might help sustain non-routine job creation in dynamic agglomerations, automatic mechanisms—i.e. internal labour mobility—acting through the increase in the domestic demand of non-routine tasks would compensate the costs elsewhere. As non-routines tasks are subject to far stronger agglomeration forces than routine occupations, specialisation following OFDI has been mainly functional within industry, rather than across the industry mix. This has spurred the growth of advanced service-based large cities, implying that adjustments in industry structures within local labour markets—particularly those suffering the greatest losses in terms of routine jobs—can take time, or simply not occur at all. This has certainly contributed to fuel discontent about the inequality caused by globalisation, progressively

translating into social distress and rising populism (e.g. Rodríguez-Pose, 2018; Rodrik, 2018; Storper, 2018; Iammarino et al., 2019).

This research has some limitations. First, our data capture both vertical and horizontal OFDI, and our measure of OFDI—based on actual net financial flows directed abroad by resident firms—does not distinguish between relocation/substitution of domestic activities and investments that may be additional to or complement those carried out at home. In addition, we acknowledge that our data refer to a relatively short time span: longer term may witness greater opportunities for workers performing non-routine job tasks, strengthening the overall effect of job creation. More generally, the inadequacy of data availability—particularly serious with respect to OFDI disaggregated by industry and subnational geography has long been highlighted in the debate on the impact of globalisation, and it underlies the clear void in regional development policy design (Iammarino, 2018; Comotti et al., 2020). Secondly, although the distinction between routine and non-routine jobs—and their cognitive and manual dimensions—allows us to consider the tasks effectively performed, arguably more relevant in terms of internationalisation than the typical high/low skilled dichotomy, there is still scope for improvement. More sophisticated disaggregations (see, for studies in this direction at the national level, Morrison and Siegel, 2001; Falk and Koebel, 2002; Hijzen et al., 2005, 2010; Ekholm and Hakkala, 2006), able to combine together tasks, competences and education, and to better grasp other aspects of the increasing heterogeneity of the labour force—such as intermediate and technical and generic versus specific occupational profiles—would significantly enhance our understanding of the spatial distribution of costs and benefits of OFDI.

Our study entails important implications. One of the most noticeable effects of globalisation and technological change—by nature profoundly intertwined—is rising within-country socio-economic inequality, putting the rather modest achievements of traditional industrial policies for internationalisation seriously in question. These remain still firmly grounded on the maximisation of inward FDI and on the view that location advantages are shaped by the nation-state of origin or destination. Despite recent economic geography contributions emphasizing the influence of the 'cluster-of-origin' over that of the 'country-of-origin' in explaining MNC investment location choices (e.g. Bathelt and Li, 2014; Li and Bathelt, 2017), the vast literature on agglomeration economies and spillover mechanisms has downplayed the role of connectivity through, especially outward, FDI in the dynamics of regional specialisation and comparative advantages. Recent academic work in the context of smart specialisation strategies emphasises the crucial link between regional internationalisation and innovation upgrading (Uyarra et al., 2014; Radosevic and Stancova, 2018; Barzotto and De Propris, 2018). Yet, further evidence on the spatial distribution of benefits and costs of OFDI for the labour markets is urgently needed: the case of Great Britain here analysed may differ from that of other European economies, less historically internationalised, less service-driven, with diverse labour market regulations and subnational production and governance structures. The case studied here is also structurally different from that of the US labour market: nonetheless, it points in the same direction of Buchholz et al. (2020) in implying that the benefits of OFDI primarily accrue to already successful and globally integrated city-regions, spurring positive cumulative cycles. History has seen before rising and declining industrial regions and cities characterised by local specialisations. Globalisation makes structural change more evident, faster, and not only as a response to endowment-based regional comparative advantages: local labour markets are increasingly built up, transformed and destroyed through the location and relocation of international production (Storper and Walker, 1989).

The incorporation of connectivity, particularly but not exclusively through OFDI, and of increasingly complex modes of internationalisation among the goals of regional development policies still remains a 'missing strategy' (Bailey and Driffield, 2007) and a missing opportunity to counterbalance the diverse impact of globalisation on the fate of people, firms and regions.

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Supplementary material

Supplementary data for this article are available at *Journal of Economic Geography* online.

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