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ORIGINAL ARTICLE

South to north investment linkages and decent work in Brazil

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Abstract

Over the last 25 years, the BRICs asserted themselves as drivers of globalization. But what does their new-found prominence mean for working conditions at home? Using a novel sub-national database covering outward investment linkages and working conditions in Brazilian municipalities, this study tests whether a direct investment in Europe leads to the introduction of decent working conditions in Brazil. The empirical results provide strong support for the investing-up effect using a mixture of panel data analysis and text analysis. The results suggest that economic integration with high-standard developed countries can act as a powerful mechanism for labor standard improvements in developing countries.

1 | INTRODUCTION

Outward foreign direct investment (OFDI) by emerging market multinational enterprises (EMNEs) is becoming increasingly common. Of particular note, since 2000, OFDI from Brazil, Russia, India, and China (the BRICs) increased by a factor of nearly 20, representing over 30% of global FDI stocks by 2015. Nearly half of these investments went to developed economies and one third just to the EU (UNCTAD, 2013, 2015). Partly as a function of this explosive growth, scholarly interest in the effects of OFDI from large, emerging economies has also grown. When discussing the effect these investments might have on labor standards, in particular, research has often focused on abuses in Chinese subsidiaries (Fei, 2020), worsening inequality and wages in developing countries (Coniglio et al., 2015; Deng & Lin, 2013), or renewed fears of the proverbial "race to the bottom" (Burgoon & Raess, 2014; Duanmu, 2014; Meunier, 2014). But, these concerns do not necessarily

reflect the reality of South–North investment, and, arguably, the social consequences are variegated and context-dependent.

One body of research on the general effects of globalization on labor standards found the two to either be in harmony (Flanagan, 2006; Vadlamannati, 2015), in tension (Olney, 2013; Rodrik, 1997), or unrelated (Kucera, 2002; Neumayer & De Soysa, 2006). In response, subsequent research attempted to make sense of these inconclusive results, incorporating domestic institutions (Mosley, 2008) and differential effects of types of globalization, finding that trade led to suppression of labor standards while investment had an overall positive impact (Mosley, 2011; Mosley & Uno, 2007). However, this ignored the importance of *with whom* countries traded and assumed investment flowing only from developed to developing countries. Partly addressing this omission, Greenhill et al. (2009) considered the importance of partners in trade, finding that better practices can diffuse from high to low-standard countries via consumer and market pressure and Adolph et al. (2017) found that better practices can disappear when a low standard country (i.e., China) supplants high standard developed countries as a primary importer. To this point, however, research has largely focused on trade and global value chains dominated by the global North, largely ignoring outward investment from rapidly developing emerging economies. Does investment from developing to developed countries lead to an "investing up" effect in labor standards? If so, are the mechanisms institutional or normative (or both)? We answer these questions, considering for the first time what effect South to North investment has on labor standards in the home-country, looking at Brazilian investment in European countries, specifically.

High standard, developed countries are home to a different spectrum of stakeholder groups and norms than the home context of EMNEs. Driven by the desire to acquire intangible assets and gain access to more stable markets, EMNEs went on a spree of mergers and acquisitions in the first two decades of the 2000s, particularly following the Global Financial Crisis (GFC). In order to maintain access to these new markets, we argue working conditions within the network of EMNEs improve, even in home country locations. These improvements occur, on the one hand, through institutional mechanisms including union networks and consumer preferences, and also, on the other hand, through normative socialization as management in EMNEs are exposed to European concepts of society and business.

We test our theory using municipality-level indicators of decent working conditions in sectors of the Brazilian economy and an entirely novel dataset of Brazilian OFDI linkages between municipalities and Europe, cross-indexed by economic sector. The former are derived from official Brazilian government microdata and the latter are an expansion on the FDI indicator used in Arbix and Caseiro (2012). Our statistical results support our hypothesis, namely, that OFDI linkages between a relatively low-standard, emerging economy and high-standard developed countries result in upgrading of in-practice labor standards (reduced overworking and informality rates, and increased shares of permanent contracts and well-paying jobs). Moreover, in order to explore proposed mechanisms, we utilize web-scraping and text analysis of official worker and employer union documents that mention Brazilian multinationals and European countries. What we find indicates strong support for the institutional mechanism though only circumstantial support for the role of socialization.

The empirical contribution of this study provides evidence for the positive impact that host countries with high standards can have on the home-countries of EMNEs through stakeholder group (e.g., union) activity as well as diffusion via socialization. Moreover, we push forward questions regarding data generation and measurement in this literature by constructing and utilizing a novel geolocated and subnational dataset on Brazilian OFDI linkages with Europe and

working conditions. Our FDI linkage data is arguably superior in this context to data measuring financial amounts due to its direct linkage to the phenomenon we seek to measure (Kerner, 2014). In addition, the narrow focus of our data provides a considerably more direct linkage between employees and employers than past research, which has largely depended on aggregate, national data to test theories occurring at a much less aggregate level. Furthermore, we leverage a mixed-methods research design in order to not only establish a relationship through econometric analysis but also include qualitative text analysis to substantiate our results and theoretical mechanisms. Finally, in a larger sense, our results may provide some hope regarding the effects that this latest period of globalization may have on labor outcomes in fast-developing emerging economies. In the wake of the GFC, when developed countries were starved for capital and the largest emerging economies, the BRICs, were in a particularly advantageous position, the resulting reversal of the traditional relationship between the global North and South vis-a-vis globalization provided novel opportunities for social upgrading.

2 | LITERATURE & THEORY

2.1 | Globalization-labor nexus

Many are by now familiar with the concept of the 'race to the bottom:' globalization applies liberalizing pressures on labor market institutions and workers by allowing free, transnational movement of capital and encouraging international competition, leading to competitive deregulation in an effort to attract investment or gain price advantages over export competitors. The evidence for this competitive lowering of standards, however, is mixed (e.g., Davies & Vadlamannati, 2013). There is another body of literature that proposes a (frequently conditional) 'race to the top,' which can occur through normative socialization between high and low standard markets (Vadlamannati, 2015) or a combination of consumer preferences and leveraged purchasing power and market access by developed country retailers (Distelhorst & Locke, 2018). Mosley and Uno (2007), Mosley (2011), and Ronconi (2012) argue that trade and FDI should lead to very different results, largely stemming from differences in the complexity in the structure of incentives. In a direct investment context, MNEs from developed countries have an incentive to invest in their host-country workforce in order to ensure better skill acquisition and higher quality products and to avoid negative exposure in developed consumer markets whereas trade follows the familiar race to the bottom argument as developing countries seek to make themselves attractive, low-cost options for upstream production or service provision.

In a second generation of research, Greenhill et al. (2009) adapt Vogel's (1995) concept of the California Effect, introducing the idea that it is not just how much countries engage in the global economy, but with whom they engage, when it comes to whether participants up- or downgrade labor standards. Import destinations with large markets, concerned consumers, and influential, coalesced interest groups can leverage their purchasing power to force regulatory upgrading in low-standard exporter countries, though this occurs more for *de jure* than de facto labor standards. Adolph et al. (2017) extend the logic of the California Effect, proposing a complimentary Shanghai Effect in which, as developed countries decreased their consumption of goods imported from Africa after the GFC, China began to purchase more of the slack exports, removing incentives for regulatory upgrading and leading to a depressing effect on labor rights. Malesky and Mosley (2018) further refine the "trading up" literature, conditioning the established relationship between labor outcomes and trade flows from developing to developed

countries with inter-firm heterogeneity, characterized by the degree of cross-market differences in product price mark-ups.

A complementary body of research developed around the application of the California Effect to foreign investment, a phenomenon appropriately referred to as "investing-up." Investing-up often builds on the idea that there are reputational and financial benefits to adopting higher standards as these standards are marketable to firm stakeholders (consumers, investors, unions, and potential business partners) (Zeng & Eastin, 2012). Moreover, MNEs are known to transfer superior standards to subsidiaries in lower standard countries, because the costs involved in conforming to various regulatory environments as well as those associated with reputational damage are too great (Perkins & Neumayer, 2012). Negative exposure from 'naming and shaming' campaigns can harm firms' long-term survival as controversy makes stakeholders less willing to engage with them. Generally, this literature has focused on the role of investment by MNEs from developed countries (DMNEs) in bringing above-compliance environmental practices to developing host countries, which can then diffuse to domestic or local firms (e.g., Perkins & Neumayer, 2012). However, Zeng and Eastin (2012) analyzes the impact of investment originating in developing countries on regulatory upgrading *in host-countries*, arguing that the same pressure applied to DMNEs also applies to EMNEs and that they too will upgrade their environmental standards (e.g., adoption of ISO 14001) as they internationalize and even lead to spillover to low-regulation, developing countries.

A shortcoming of earlier research (especially regarding the impact on labor standards) is that it frequently relegates developing countries to exporters of primary or intermediate goods and passive recipients of direct investment from developed countries. Yet, as the leading emerging economies have grown over the last two decades, they shifted away from exporting primary products or low-skill manufactures and their largest and most productive firms became significant outward investors. Many of these EMNEs have moved beyond regional investments and begun investing further abroad in pursuit of intangible assets such as brand names and technological and productive expertise. As of yet, with rare exception, little to no research has been conducted on what effect these knowledge-seeking South to North investments have on labor, either in the host or home countries. Moreover, existing research has largely depended on data that is aggregated across sectors and geographic areas (the notable exception being Perkins & Neumayer, 2012). This is problematic because the data arguably may not be capable of testing the proposed mechanisms underlying the authors' hypotheses. The data we have generated represents a substantial improvement over nationally aggregated data in that the narrow geographic and sector indices allow us to more directly connect our measures of working conditions in Brazil with the investment linkages that we propose serve as a means for diffusion from European host markets back to the workplace in Brazil.

2.2 | Theoretical mechanisms

We identify two mechanisms through which the transmission of better standards and practices diffuse. The first can generally be described as institutional and reputational, broadly in line with the California Effect, driven by compliance with European laws and the preferences of consumers, unions, and other stakeholders. The second concerns socialization to norms concerning worker relations and the potential benefits of better working conditions.

For the first mechanism, reputation and access to developed-country markets are key. EMNEs bring with them problems of reputation and legitimacy, largely derived from the poor

institutional quality of their home countries (Khanna & Palepu, 1997) which translates into credibility and legitimacy deficits (Fiaschi et al., 2017; Park, 2018). As EMNEs become increasingly global they increase their exposure to active, vocal stakeholder groups scrutinizing their behaviour (Prakash & Potoski, 2007). As one manager of a Brazilian multinational put it: "[rights abuses] are among the worst nightmares of managers responsible for obtaining social license for [a] firm's operations" (Fiaschi et al., 2017, p. 547). In order to avoid reputational harm and ensure continued access to developed markets, EMNEs adopt policies to match host-country standards. Developed markets are attractive to EMNEs for two reasons. The most obvious of the two is that developed countries, such as those in Europe, are more stable, which historically has not been the case in many developing countries (see below). The second reason relates to the importance of asset-exploration through FDI from developing to developed countries. EMNEs often lack the firm-specific advantages that traditional multinationals rely on in their process of internationalization. They instead rely on *country*-specific advantages such as low production costs and state support as they seek market access for exports or early-stage FDI (often in other emerging economies) (Ramamurti & Singh, 2009). Driven by the desire to internationalize further, EMNEs continue their expansion beyond their home regions searching for ways to become more competitive (i.e. to obtain firm-specific advantages), for example, through mergers and acquisitions (M&As) with producers in developed countries (Fleury & Fleury, 2016; Meyer, 2015). Gaining and maintaining access to these vital sources of intangible assets is arguably of great importance to EMNEs, and they will adapt accordingly. In the case of working conditions in Brazil, this means not only avoiding the most egregious abuses but also avoiding working conditions in their home-country that could be viewed unfavourably by stakeholders (especially unions) in high-standard, host-countries. International union networks have become a valuable tool for exerting pressure on potentially intransigent firms and represent a direct, intra-firm source of stakeholder pressure (Framil Filho & e Silva, 2019). By linking workers between locations in a multinational firm, unions within a union network are able to share information, work in solidarity to pursue upgraded wages and working conditions, and bring attention to unequal treatment, especially in high-standard host countries. Moreover, unacceptable practices can lead to outreach and support by home-country labor unions or activist groups leading to coordinated strikes, protests, and negotiations (Evans, 2014; Framil Filho & e Silva, 2019; Helfen & Fichter, 2013).

For the second mechanism, FDI involves establishing a physical presence in another country. EMNE investment in developed countries heavily favours M&As over greenfield investment with the majority of Brazilian M&As in Europe in productive sectors "as diverse as petrochemicals, engineering and construction, industrial equipment, steel, automotive parts, and meat processing" (Nölke, 2014, p.143). With the deep integration that Brazilian MNEs typically practice, frequently interacting with educational and social institutions, they are heavily exposed to practices and standards through managers, consumer groups, educational institutions, and unions. This means novel experiences with relatively more humane treatment of workers, which can have productivity and human capital enhancing effects (Bassanini & Venn, 2008). In addition, developing country firms are exposed to high-road labor management practices in Europe which accrue benefits to the firms in areas that are particularly problematic in the Brazilian labor market (e.g, high turnover, low capital accumulation, etc.) (Milberg & Houston, 2005). These practices are defined not only by the stringent labor laws in European countries but also by de facto standards in European markets, both of which are of a comparatively and historically high standard.[i] This includes limitations on excessive hours, occupational health and safety regulations, good pay, relatively generous benefit packages, and use of formal

employment that ensures access to the full range of protections afforded by law and collective agreement. To demonstrate, Figure 1 maps violations of labor rights throughout Europe and neighbor countries, as measured by the Overall Labour Rights Indicator (Center for Global Workers' Rights, 2021) which scores countries according to violations of collective labor rights. While there is some variation between countries in Europe, that variation is minor relative to immediate neighbors such as Belarus or Turkey or compared to the United States, which has an overall score in 2015 closer to Algeria and Colombia than to the Netherlands or Sweden. Moreover, unions and works councils remain relatively strong and prevalent in social capitalist Europe, and take a major role in negotiating wages, hours, employment conditions, and non-wage remuneration and benefits (Marginson & Sisson, 2004).[ii]

Once EMNEs have invested abroad in high-standard host-countries, subsidiary managers seek to transfer new practices and standards back home (Ferner & Varul, 2000). Although popular conception of how multinationals function may make this seem implausible, there is evidence that it occurs within non-US, DMNEs (e.g., Edwards & Tempel, 2010) and even is

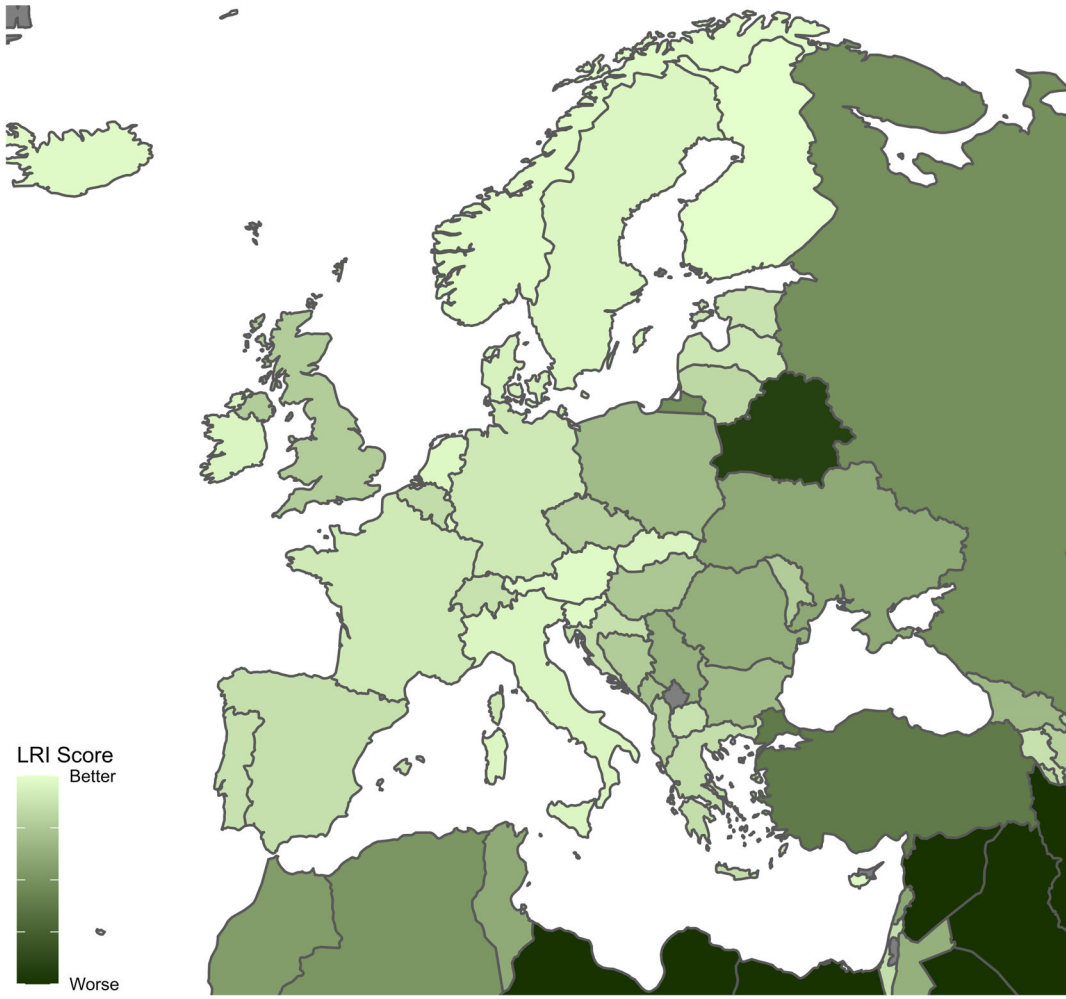

FIGURE 1 Average overall LRI score in Europe 2000–2017. *Source*: Center for Global Workers' Rights (2021).

common in EMNEs operating in developed countries (Rui & Yip, 2008). Furthermore, EMNE subsidiaries frequently have sufficient operational autonomy and organizational influence to experiment with best practices based on locally acquired knowledge in their location which then diffuse backward (e.g. Edwards & Tempel, 2010) to headquarters. Fleury and Fleury (2011), find that half or more of Brazilian MNC subsidiaries consider themselves superior to headquarters in commercial, financial, and human resources management competences and are influential within their corporate network.

These two mechanisms form the core of our hypothesis which contends that as outward investment linkages from developing countries (here, Brazil) to developed (here, EU and EFTA) countries increase, there will be associated improvements in working conditions in the home country. Given the existing research on the globalization-labor nexus, the particularities of emerging multinationals in general and Brazilian multinationals specifically, and the characteristics of the labor market and regulations in Brazil, we propose the following hypothesis (H1):

> **Hypothesis 1.** *Increasing investment linkages with Europe lead to improvements in decent work outcomes in Brazil.*

3 | CASE AND DATA

3.1 | Brazil

Brazil is an ideal setting for this type of research for multiple reasons. Prior to its recent socio-economic downturn, Brazil was one of the fastest growing and largest emerging economies in the world and the first among the BRICs to become a significant outward investor (Andreff, 2016). Brazilian outward investment began in the 1970 s, driven by stagnation in the local economy which pushed at least a dozen firms into neighbouring countries and, in the 1980 s, the few extant Brazilian MNEs invested further abroad to Africa and the Middle East as the Brazilian economy suffered successive economic crises (Andreff, 2016; Fleury & Fleury, 2011). As economic stability was regained by institution of the Real Plan and liberalizing economic reforms, Brazil faced a massive influx of FDI from developed countries, resulting in "the lowest ratio of local to foreign capital ownership" in the world (Ferraz et al., 1999, p.17) with "405... of the 500 largest companies in the world [having] operations" there (Matesco & Hasenclever, 2000, p.161). The resulting increase in domestic competition further challenged Brazilian companies as they simultaneously recovered from the preceding economic crises.

Many Brazilian firms responded by again looking outside of Brazil, either for less competitive markets with low barriers to entry (Misoczky & Imasato, 2014) or for new sources of knowledge and competences in the United States, Canada, and, especially, in Europe (Cui et al., 2014). In fact, by 2012 the largest source of investment in the EU among developing countries came from Brazil (Nölke, 2014). Moreover, in addition to having been the largest source of foreign investment in Europe among the BRICs, European countries make up a significant percentage of Brazil's overall outward investment, particularly attracting FDI in the form of M&As (Arbix & Caseiro, 2012). This means that Brazilian investment in Europe is a significant phenomenon for both the home and host countries, as illustrated in Figures 2 and 3. Brazil even managed to maintained a significant presence as a source of foreign investment through and after the GFC, when multinationals from other locales were forced to significantly divest, as Brazilian firms, and the Brazilian economy in general, recovered relatively rapidly (Poulsen & Hufbauer, 2013).

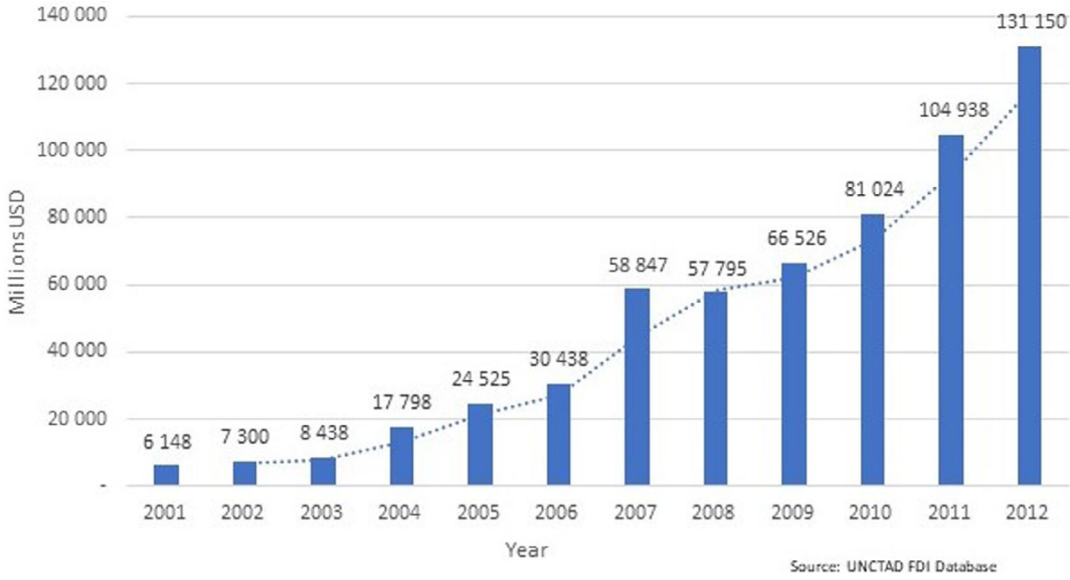

FIGURE 2 Growth of Brazilian FDI stocks 2000–2012.

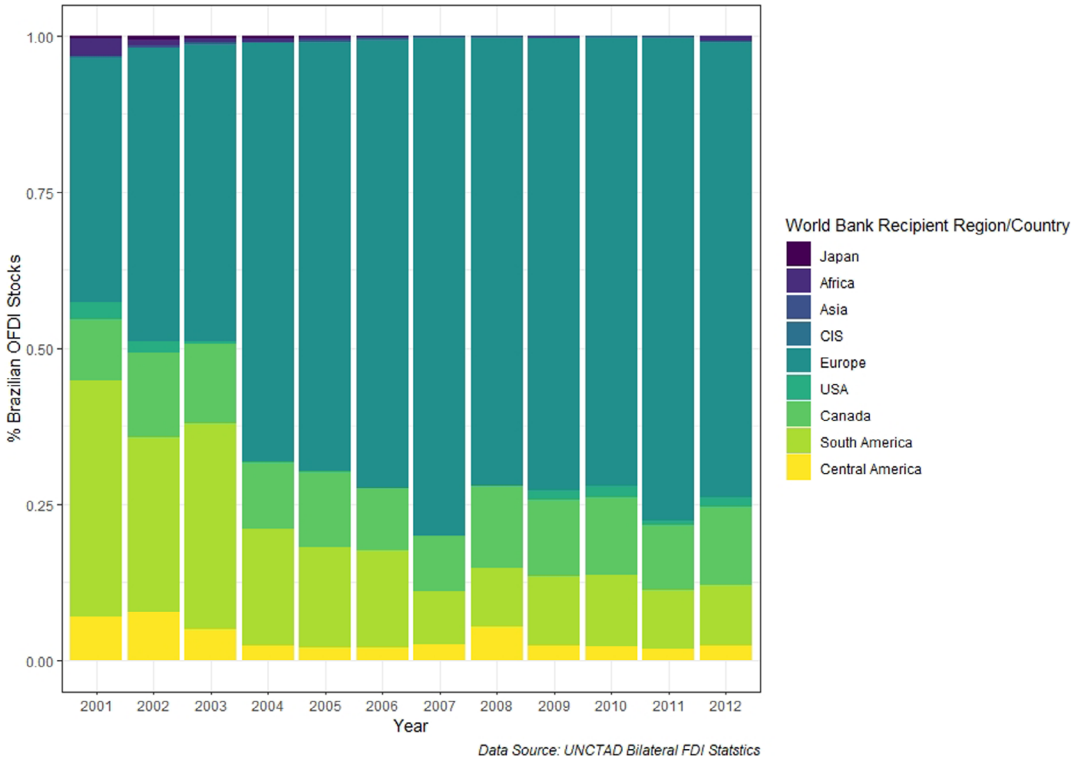

FIGURE 3 Distribution of Brazilian FDI stocks 2000–2012.

Of course, China and, to a lesser extent, Russia have since surpassed Brazil in terms of investment flows. However, both countries have consistently been ruled by variously authoritarian or, at least, hybrid regimes, with close relationships between the ruling political and business elites. The institutional rigidity of those non-democratic political systems makes them unlikely cases of labor upgrading as a result of OFDI linkages with advanced economies. Brazil, on the other hand, has been a democratic country since the removal of the dictatorship in 1985 due to the efforts of its well-organized social and labor groups.

Brazil has one of the highest rates of unionization in the world (Martin & Brady, 2007). The institutionalization of the labor movement there was established by the government of Getulio Vargas as part of his government's attempt to construct a corporatist state with a centralized labor law and parallel, geographically anchored union structures for workers and employers (Erickson, 1977). One legacy of that corporatist model is that, until very recently, Brazil was considered to be one of the least flexible labor markets in the world (Almeida & Carneiro, 2009). The *Consolidaçåo das Leis do Trabalho* (or CLT), largely unchanged between 1943 and 2017, is the central regulatory repository governing employment and permissible working conditions. Formal employees are required by the CLT to have a work card (*Carteira de Trabalho*) which is signed by the employer and contains the employee's work history. By virtue of having this signed card, each worker is entitled to the full range of rights and benefits ascribed in the CLT, including 13th month bonus pay, unemployment insurance, severance payment, paid vacation and overtime premium pay. The 1988 Constitution expanded these rights by increasing severance payments, reducing the maximum work week from 48–44 h, and introducing expanded mandatory benefits (Carbonai, 2019; de Barros & Corseuil, 2007). Employers also not only have to pay severance and unemployment benefits but must give their employees at least a one month notification of termination and allow the worker-to-be-terminated time *on the job* to look for a new position.

These accumulated employment-related costs introduce incentives to shirk legally-mandated responsibilities (Ulyssea & Ponczek, 2018). This leads to tension between employers and their employees as the former seek any opportunity to withhold the latter's legally guaranteed benefits, decreasing worker satisfaction. In fact, surveys have found that, in general, workers in Brazil are generally unhappy with their workplace, citing a lack of work-life balance and humane treatment (Aguiar do Monte, 2012). Displeasure leads to degraded employee satisfaction which contributes to lower levels of productivity and higher rates of turnover (Aguiar do Monte, 2012). In turn, this contributes to a cycle of low productivity and poor treatment in a labor market that has relatively high regulatory costs (da Rocha et al., 2019).

Despite these issues, the state has made great efforts to put the most egregious forms of labor abuse behind them. In particular, Brazil has managed to achieve sharp drops in both child and forced labor, as illustrated in Figure 4. Progress in these areas brings less egregious but still very important aspects of work and workers' rights to the fore, such as decent work conditions.

3.2 | Independent variable

In order to investigate the transmission of decent working conditions through an investment pipeline it is necessary to construct a measure of outward investment. While official governmental data on outward Brazilian investment in Europe is effectively unavailable, there are alternatives, though they suffer from problems of coverage and completeness.[iii] Private FDI databases[iv] collect and provide vital information about the details of green- or brown-field

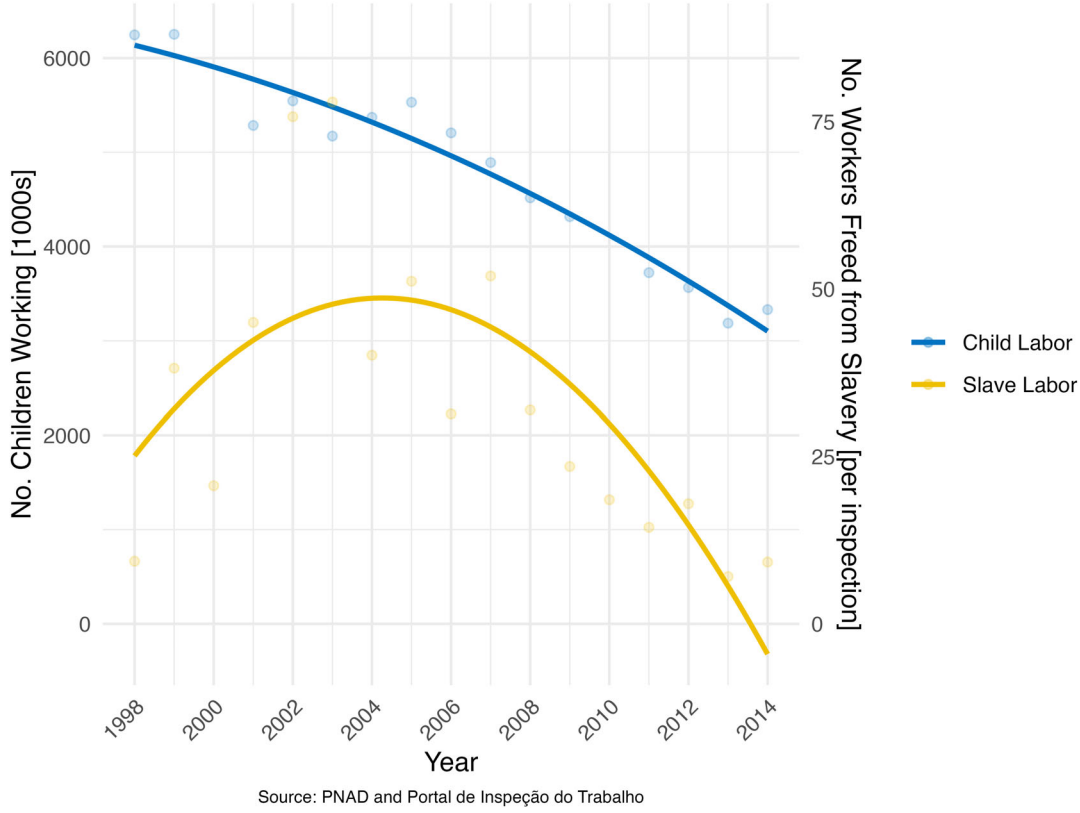

FIGURE 4 Child & forced labor 2001–2014.

(i.e., M&As) investments. Problematically, the coverage of this data is often limited and frequently incomplete.[v] Inward investment data from host-countries rarely contains subnational information for the country from which the investment is coming and, furthermore, there is the problem of inconsistency in how investment is measured between countries.

There is also a more conceptual issue in using FDI flows or stocks at all. Kerner (2014, p.804) points out that FDI can be conceptualized as "foreign ownership of domestic assets and foreign control over domestic production" or "as a financial phenomenon relating to the cross-border movement of capital between parent MNCs and their foreign affiliates." How best to conceptualize and operationalize foreign investment depends on the particularities of the research in question. The common FDI flow measure used in most political science applications describes "a macroeconomic phenomenon that differs from... most political science theories... and these differences... are likely to cause bias" (Kerner, 2014, p.804). These biases can result from repatriation of capital, exchange rate fluctuations, or failure to differentiate between productive investment or investment meant for tax avoidance or portfolio investment. Moreover, it does not necessarily make sense conceptually to use financial amounts since it may not make sense to say that a $250 million acquisition is somehow less important for establishing linkages than a $750 million acquisition, per se.

One means for working around incomplete, missing, or otherwise undependable financial values in the international aid literature has been to measure aid allocation by the project, rather than financial values (e.g., Dreher & Fuchs, 2015). Arguably, this can be a superior

measure when the financial value is of less importance than the presence of a project. Our research is less concerned with financial values and more concerned with the establishment of a presence in high-standard European countries which can provide opportunities for exposure to the norms, practices, and preferences of stakeholders in high-standard, developed markets where social sustainability is of relatively greater importance.

However, that is not to say that with increasing number of acquisitions of European subsidiaries, a company would not be under greater pressure due to increasing levels of exposure, or that a location in Brazil that has more "investment linkages" with European markets would not necessarily experience higher levels of aggregate social upgrading in the form of improved working conditions. We chose to produce a measure of European outward investment linkages similar to that of Arbix and Caseiro (2012) with a further augmentation: an additional dimension of variation which incorporates the number of locations internationally, as well as domestically.

We generated our *EU FDI Linkages* variable by mapping M&A subsidiaries of Brazilian MNEs in Europe between the years 1998 and 2015 according to a number of overlapping and complimentary sources beginning with the annual Brazilian multinational listing published by *Fundação Dom Cabral* and supplemented by BCB reports, Valour, the Thompson Reuters-Refinitiv M&A data base, and individual company shareholder reports and web sites. The finished product includes the cities and economic sectors of non-retail, non-customer service units possessed by each Brazilian multinational in Brazil and the country locations in Europe. This was then aggregated at the level of the Brazilian municipalities so that the measure of investment linkages with Europe would increase by one for a given sector and municipality in Brazil whenever a Brazilian MNE opened a new unit there or in Europe.[vi]

To illustrate, if Companhia Siderúrgica Nacional (CSN), steel and chemical manufacturer headquartered in São Paulo with substantial investment in Europe, opens a new plant in the municipality of Volta Redonda in 2003, the outward investment linkage measure would go up by one in either the steel or chemical manufacturing sectors in that location (or both, depending on what the new factory produces). Moreover, if CSN were to acquire another European subsidiary in that same year, the outward investment linkage measure would further increase by one in Volta Redonda, São Paulo, and every other city and sector in Brazil where CSN operates.[vii] Of course, the more simplistic alternative would be to have the indicator vary across only one dimension, that is, only in Brazil *or* Europe, rather than across both, but this would provide less information about the level of "exposure" each city gains to the working conditions in Europe through the investment linkages established by Brazilian acquisitions.[viii]

The finished product provides a measure of outward investment linkages across all economic sectors[ix] for the entire country of Brazil including all 5563 municipalities. The distribution of investment linkages throughout Brazil's municipalities in 2000, 2008, and 2015 are illustrated in Figure 5. Similar maps illustrating the evolution of the establishment of outward FDI linkages at the municipality level in select industries can be found in the Appendix (Figure A1). These maps demonstrate the growing depth and breadth of the investment linkage channel throughout the country. While this was primarily a phenomenon constricted to the populous and better developed southeast in 2000, it has since spread throughout Brazil. By 2015, all 26 states and the federal capital district had these investment linkages with European countries.

The sectors in which Brazilian multinationals operate in Brazil and how the investment linkages have grown within those sectors is illustrated in Figure 6. In manufacturing the trend is generally positive though, starting in 2011, there is a period of stagnation in outward

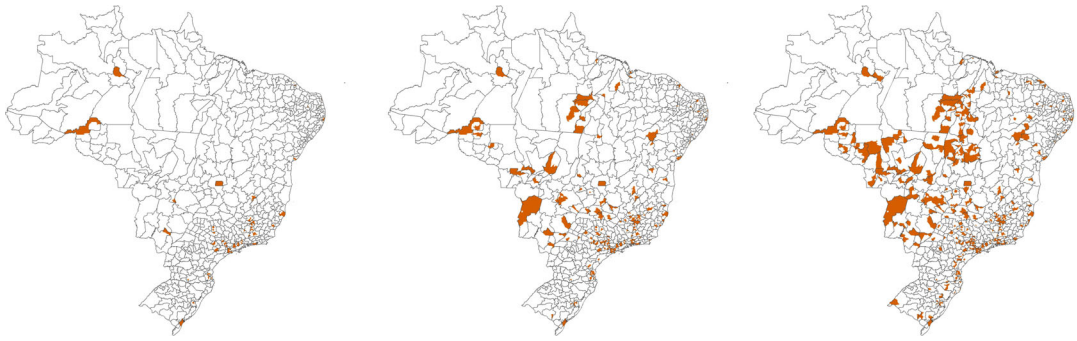

FIGURE 5 Municipalities with European outward investment linkages in 2000, 2008, and 2015.

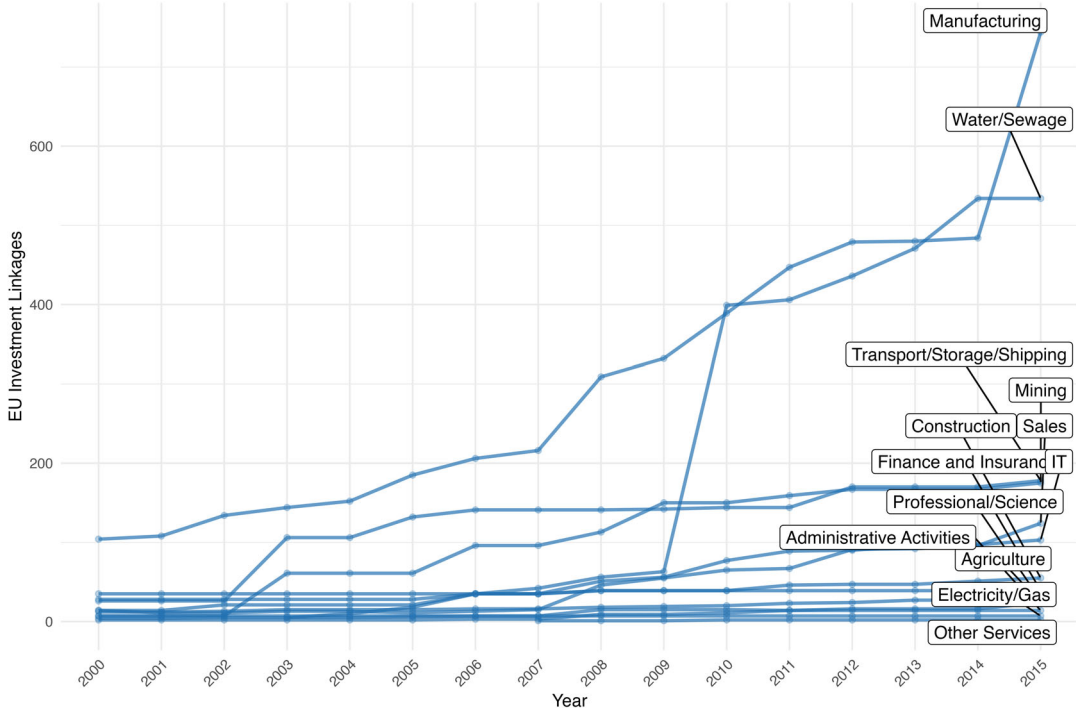

FIGURE 6 OFDI linkages in sectors in Brazil 2000–2015.

investment linkages that lasts until 2014. This likely reflects post-recession contractions in some companies. The only sector whose growth outperforms that of the manufacturing sector is the water/sewage sector, though this only occurs in 2014. The sudden and dramatic increase in linkages in this unexpected sector is due to a succession of purchases by Odebrecht Ambiental (a subsidiary of one of Brazil's largest multinationals) of water treatment facilities including the purchase of the water and sewage treatment facilities for the entire state of Tocantins.

These plots illustrate not only the extent of this phenomenon in Brazil but also the amount of work involved in constructing this variable. It required multiple revisions as new information became available in order to identify the location of multinationals' facilities at home and

abroad and the sector that each of the domestic facilities is engaged in, in Brazil, and the years in which they were established or removed.

3.3 | Dependent & control variables

Dependent variables

As major transition economies like Brazil made efforts to put the most egregious forms of labor abuse behind them, other aspects of work and working conditions have grown in salience and focus has shifted toward individual rights and, especially, *decent work* (Guérin & Srivastava, 2012). Decent work is defined by the ILO as employment that is not only productive and delivers a fair income but that includes job security, humane working hours, and social security (ILO, 2009). Beyond the ILO, organizations such as UNCTAD, UNDP, Eurofund, and NGOs such as Solidar Suisse have stressed the importance of access to decent work in creating fair economic globalization as part of the United Nations' Sustainable Development Goals, particularly Goal 8 on inclusive economic growth and decent work for all.

Accordingly, we focus on four facets of decent work as our dependent variables, based on those published by the ILO and Brazilian government in ILO (2013). These are the rate of overworking, the rate of informality, the share of permanent contracts, and the rate of well-paying jobs. To construct these variables, we rely on the Censo Demografico (decennial demographic census) and the *Relação Anual de Informaçõμes Sociais* (the Annual Reports of Social Information, or RAIS).

3.3.1 | Overworking

Overworking is defined for an individual as working more than 48 h per week in any given week. This aspect of working conditions is part of the core components of the decent work program, namely a healthy work-life balance and "requires the reconciliation of the normally divergent interests of... employer and workers" (ILO, 2013). When the work-life balance tilts too far toward work, it can lead to health and other problems (Cha, 2010; Sullivan, 2014). This is especially true when the pressure to overwork is not voluntary (Dembe et al., 2005), that is, when it comes from the employer. Due to the inherent conflict between the divergent interests of workers and employers, the state has an important role to play as mediator by enacting and enforcing baseline restrictions on working hours and other related aspects of working conditions such as salaries. According to the ILO, promoting a healthy work-life balance by limiting forced overworking reduces worker stress, improves worker efficiency, increases employee work satisfaction which leads to improvements in commitment and productivity, and reduces personnel turnover and attendance issues (ILO, 2013).

In Brazil, the first law regulating the maximum number of allowable work hours was instituted in 1932, permitting 8-h work days or a maximum of 48-h per week, though with exceptions whereby employers could extend this to 10-h days or 60-h weeks (Mocelin, 2011). With the ratification of the 1988 Constitution, the maximum allowable number of work hours was reduced to 44 and overtime bonuses were again increased, making extra hours even more costly (de Oliveira et al., 2015; ILO, 2009). Accepting that some amount of overtime is often unavoidable and even desirable for some workers but also recognizing that overtime hours are costly both in terms of labor costs and potentially reduced productivity, we measure *Overworking* as

the percentage of working age individuals (ages 14–64) in a given sector, location, and year working over 48 h per week. This variable is constructed using responses to census questions regarding number of hours worked per week.

3.3.2 | Informality

Informality is a chronic issue in Latin America, generally, and in Brazil, specifically. In Latin America, the share of workers employed informally ranges from 35% to 80% (Perry, 2007), while some estimate that up to 50% of the Brazilian labor force is employed informally (Dix-Carneiro et al., 2021). Not only are the proportions strikingly large, but have been increasing over time. From the early 1990 s to the early 2000 s, informality rose by 10% points in Brazil as well as other countries in the region. While some rightly argue that informality has some beneficial economic effects,[x] from a decent work perspective, informality is a serious problem because workers lacking a formal contract "work more, earn less, toil in unsafe conditions..., are in vulnerable positions in the labor market" which leads to a much higher likelihood of becoming "embroiled in illegal networks and/or police corruption [and having] worse living conditions" (Cardoso, 2016, p.22). Moreover, informal workers face significant volatility in employment and significantly lower wages (Engbom et al., 2022) while also lacking access to mandatory and voluntary benefits and experiencing relatively worse health outcomes (Neri, 2002).

Measuring informality in Brazil is a relatively straightforward process, which has contributed to numerous studies on its causes and consequences (e.g., Dix-Carneiro & Kovak, 2019; Ponczek & Ulyssea, 2017; Engbom eta l. 2022; Neri, 2002; Cardoso, 2016; Bosch et al., 2007; ILO, 2009). The most widely used and accepted measurement of (in)formal employment at the individual level is whether or not a worker has a signed work card which, as mentioned above, is required by law and provides legal guarantee for mandated benefits. We measure *Informality* in each sector and municipality as the percentage of employees of working age (14–65) with a signed work card in a given year.

3.3.3 | Permanent contracts

Job security is an inseparable part of the concept of decent work (ILO, 2009). It minimizes the necessity for workers to straddle multiple jobs and allows people to plan for their future. Moreover, it ensures access to the voluntary and mandatory benefits that come with employment including health insurance, transportation and housing subsidies, and disability insurance. Having stable and secure employment also removes a significant source of stress for households (Floro & Messier, 2011).

Job security is related not only to the benefits of decent work for employees but its converse, that is, high turnover, is commonly associated with low levels of human capital accumulation and productivity. These are major issues for employers, especially in Brazil (ILO, 2013; Orellano & Pazello, 2010) as labor turnover increased significantly following the establishment of the Severance Indemnity Fund (*Fundo de Garantia do Tempo de Serviço* - FGTS) in 1996 which also introduced mandatory 30-day notice by employers and severance payments. Both the FGTS and mandatory notification period for permanent employees significantly increased the costs of direct, formal employment, particularly as tenure increases. As a result, employers face increased incentives to avoid expensive permanent employment. According to the RAIS

data, between 2000 and 2010, average job permanence was only about 5 years (ILO, 2013). The same data also indicates that around 70% of dismissals are initiated by the employer and only about 20% are initiated by the employee. Therefore, much of the impetus behind job (in)security lies with the employers and not workers, in line with the post-1996 increase in turnover associated with the correlation between tenure and firing costs.

In order to measure job security, we rely on the RAIS administrative data. Every employer is required by law to report wage and contract information (including start date, duration, occupational code, and permanence of contract) on an annual basis as well as worker characteristics, the city of the employment, and the economic sector. From the RAIS data set, we use the number of formal employees with permanent (i.e., non-temporary, direct) contracts. This variable is a count variable, providing the number of employees with permanent contracts in each municipality, sector, and year. We recognize, however, that regressing this raw count variable on outward investment could be capturing scaling effects. As companies involved in a sector grow, they may simultaneously be engaging in new waves of outward investment while also hiring new workers. To account for scaling effects, we weight the number of permanent contracts by the number of employees in each sector-municipality-year producing a ratio of permanent contracts to number of employees (with any type of contract). We then log transform this variable, as is common practice, to normalize its distribution. This results in the dependent variable *Permanent Contracts* that is used in the regressions.

3.3.4 | Remunerative employment

Finally, wages are an integral part of the concept of decent work. The ILO included access to "fair wages" as one of the five original components of the decent work concept (ILO, 2009). Moreover, for many, "the most important characteristic of work is pay" including access to an adequate and liveable wage (Anker et al., 2003, p.22). Interviewees in the *World Development Report 2000/2001* stress that decent work cannot be achieved while workers face unjust wages (Gillis et al., 2001). Substandard wages are a chronic issue in developing countries, which contribute to ongoing and widespread poverty which persists across time and space. Better wages afford a better quality of life, opportunities to send children to school (rather than to work), access to better healthcare, as well as non-necessary benefits such as the ability to pursue hobbies, take holidays, and other small extravagances that differentiate living from just existing. Ghai (2003) and Anker et al. (2003) encourage researchers attempting to operationalize decent work to consider wages in a relative rather than absolute sense, arguing that measuring "quality" remuneration must vary according to the material reality for a given country. According to Anker et al. (2003) "[t]he underlying idea is to identify workers without decent pay," which can be captured by measuring the proportion of workers whose pay is below the median national wage. We adopt this approach, with one adaptation, looking at the proportion of workers in a given city, sector, and year whose income is *above* the national median for the corresponding sector. We opt for the proportion of workers above rather than below the median because we are not trying to simply measure (lack of) decent work for descriptive purposes but are instead interested in the potential for labor upgrading. Thus, we are left with the dependent variable *Better Wages*, measuring the proportion of workers within each city, sector, and year whose wages are above the state sectoral median.[xi]

3.3.5 | Controls

We also include demographic and economic controls that may have an effect on the provision of decent working conditions. We take a cautious approach to inclusion of controls, so as to avoid including so-called "bad controls" (such as intervening variables), which results in a limited control approach.

The first control is *Female Population* which captures the proportion of the population in each municipality that is female. Existing research demonstrates that individual and systemic discrimination lead to greater frequency of poor working conditions for workers that are not male (e.g., Lovell, 2000). Next, we include an estimate of the percent of local sectoral employment constituted by the combined workforces of Brazilian multinationals in each municipality (*Employment by BrMNEs*) in order to control for the effect that firm-level changes might have on both working conditions and investment decisions.[xii] We also include the logarithm of the population (*Ln. Population*) as well as the local GDP (*Ln. GDP*). Population provides a measurement of the size of the local labor and product markets and the local Gross Domestic Product measures the size of the local economy and a rough proxy for local development. The Ministry of Industry, Trade, and Services (MDIC) makes available detailed information on imports and exports for Brazil as a whole or broken down to the state and municipality levels. Moreover, this data includes highly specific product and sector classifications. We use this data to construct a measure of total exports to Europe, the United States, and Canada measured in millions USD per economic sector and municipality (*Ln. Exports to North*) in order to control for the potential incentives for social upgrading that these exports could provide, based on previous research (Greenhill et al., 2009). Summary statistics and correlations are available in the Appendix, in Tables A1 and A2.

4 | METHODS

To test our hypothesis, we estimate multiple multidimensional fixed effects (MDFE) panel regressions. Our MDFE regressions take the following general form:

$$CONDITION_{ijt} = \beta FDI_{ijt-1} + \gamma X_{it-1} + \delta Z_{it} + \lambda_i + \lambda_j + \lambda_t + \varepsilon_{ijt} \quad (1)$$

where FDI_{ijt-1} refers to the number of outward investment linkages in sector j in municipality i at time *t-1*; X refers to 1-year lagged time-varying economic variables; Z is time-varying socio-demographic variables; the lambdas are the battery of fixed effects; and epsilon is the error term. For our fixed effects, we leverage the high-dimensionality of our data to use two approaches. First, we include standard static fixed effects (so, microregion, sector, and year) along with microregion-sector fixed effects to control for sector characteristics that are specific to each location.[xiii] These standard fixed effects are used in models both with and without our limited control approach. We also estimate what (Vadlamannati, 2015) refers to as a kitchen sink approach to modelling, where we include a larger set of controls, regardless of concerns over whether they introduce endogeneity. However, these results are relegated to the robustness test section and are primarily meant to illustrate that even with a broader (though likely problematic) specification including a wider range of controls, our results are consistent. Second, we use time-varying fixed effects, which allow us to control for all relevant factors in each location-year, sector-year, and location-sector. This approach allows us to address omitted variables,

whether measurable or unmeasurable, with the downside being that we cannot explicitly estimate the effects of all of these factors.

Two of our dependent variables (*Overworking* and *Informality*) are drawn from the decennial Censo Demografico, meaning that they are only available for the years 2000 and 2010. For the sake of consistency across models, we limit each of our four dependent variables to these 2 years. To avoid the possibility of simultaneous identification or that our estimates capture the inverse of the relationship we propose, we lag our investment variable by 1 year. This also addresses the possibility that, for those controls we *do* include, they are not pre-treatment controls (as they are contemporaneous, occurring later in time than the investments). Moreover, the effect of investment on provision of decent work outcomes arguably is not instantaneous in most cases (though, see Perkins and Neumayer (2012) for counter-argument) and a one-year lag is the minimum amount of time necessary for changes to occur. As a result, our data is characterized by 5476 consistent municipalities,[xiv] 22 economic sectors, and 2 years in our data with our dependent and control variables measured in 2000 and 2010 and our outward investment linkage variable lagged by 1 year (so, measured in 1999 and 2009) in our main specifications (though we test alternative lags in the robustness tests).

5 | RESULTS

Do Brazilian outward investment linkages with Europe lead to transmission of more decent working conditions to home locations in Brazil? We start with the simplest model specification, omitting controls and only using static fixed effects (that is, microregion, sector, year, and microregion-sector). These results are presented in Table 1.

TABLE 1 Main results with static FEs[b].

	Overwork	Informality	Perm. contract	Better wages
EU FDI linkages	−2.17[a]	−2.47[a]	0.31[a]	0.26[a]
	(0.54)	(0.51)	(0.07)	(0.05)[c]
Microregion FEs	✓	✓	✓	✓
Sector FEs	✓	✓	✓	✓
Micro × Sector FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
R^2	0.40	0.62	0.58	0.15
Adj. R^2	0.36	0.60	0.55	0.10
Obs.	240944	240944	204913	240944
AIC	2133633.11	1966481.26	566504.45	931591.34
BIC	2273253.92	2106102.08	703887.69	1071212.16
Log likelihood	−1053381.55	−969805.63	−269823.22	−452360.67

Note: Standard errors clustered by municipality-sector (120,472 clusters).
[a]$p < 0.001$;
[b]$p < 0.01$;
[c]$p < 0.05$.

The bivariate coefficients for the effect of increasing outward investment linkages on each of the decent working conditions are as hypothesized. All four coefficients are statistically significant and in the correct direction. An increase in one of outward investment linkages with Europe in a given municipality in Brazil in year *t-1* is associated with a 2% point decrease in overworking, a decrease in informality by 2.5% points, an increase of roughly 30% in usage of permanent contracts, and an increase of 26% in the proportion of workers earning wages above the state-sector median.

What about when we include controls? Table 2 displays the results from our limited control approach. Across all decent work outcomes, we find that the results are consistent with those reported in Table 1 with the estimated effect on *Overworking* and *Better Wages* even increasing, indicating that omitted variable bias in the previous regression was biasing the outward FDI linkage coefficients downward. The coefficients for *Informality* and *Permanent Contracts* are somewhat diminished, however, which we would normally expect after including relevant controls. The model fit statistics also improve somewhat in some places, even those meant to adjust for inclusion of independent variables (e.g., adjusted R^2).

TABLE 2 Main results with static FEs and controls.

	Overwork	Informality	Perm contract	Better wages
EU FDI linkage	−2.97[a]	−2.35[a]	0.13[c]	0.38[a]
	(0.54)	(0.51)	(0.06)	(0.05)
Female population	0.12[a]	−0.10[a]	0.02[a]	−0.04[a]
	(0.03)	(0.03)	(0.00)	(0.00)
Employment by BrMNEs	0.06[c]	−0.04[b]	0.02[a]	0.00
	(0.03)	(0.02)	(0.00)	(0.00)
Ln. exports to North	0.09[a]	0.02	0.00[a]	−0.00[a]
	(0.01)	(0.01)	(0.00)	(0.00)
Ln. GDP	−0.20	0.15[c]	0.13[a]	−0.01
	(0.11)	(0.07)	(0.01)	(0.01)
Ln. population	2.37[a]	−0.51[a]	0.27[a]	−0.28[a]
	(0.12)	(0.08)	(0.01)	(0.01)
Microregion FEs	✓	✓	✓	✓
Sector FEs	✓	✓	✓	✓
Micro × Sector FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
R^2	0.38	0.50	0.60	0.14
Adj. R^2	0.35	0.48	0.58	0.09
Obs.	240944	240944	204913	240944
AIC	2138525.21	2031096.46	552990.77	933174.10
BIC	2272180.84	2164752.09	684501.80	933174.10
Log likelihood	−1056401.61	−1002687.23	−263640.38	−453726.05

[a] $p < 0.001$;
[b] $p < 0.01$;
[c] $p < 0.05$.

TABLE 3 Main results with time-varying FEs[c].

	Overwork	Informality	Perm contract	Better wages
EU FDI Linkages	−2.03[a]	−1.43[b]	0.31[a]	0.15[a]
	(0.57)	(0.46)	(0.07)	(0.04)
Micro × Year FEs	✓	✓	✓	✓
Sector × Year FEs	✓	✓	✓	✓
Micro × Sector FEs	✓	✓	✓	✓
R^2	0.40	0.62	0.58	0.27
Adj. R^2	0.36	0.60	0.55	0.23
Obs.	240944	240944	204913	240944
AIC	2133633.11	1966481.26	566504.45	47755.48
BIC	2273253.92	2106102.08	703887.69	18376.30
Log likelihood	−1053381.55	−969805.63	−269823.22	−10442.74

[a]$p < 0.001$;
[b]$p < 0.01$;
[c]$p < 0.05$.

As mentioned above, while our limited control approach helps in partially addressing the risk of omitted-variable bias, it does not allow us to control for all alternative explanations, both measurable and unmeasurable. We adopt a more complex fixed effects approach, leveraging the high-dimensionality of our data in order to control for microregion and sector specific factors that vary from year to year through use of microregion-year and sector-year fixed effects. These results, in Table 3, only serve to further support the results presented in the tables above. Some coefficients are smaller but this is as expected, given that demeaning our data sharply reduces the variation in all variables. This is also the drawback with such an approach. If we consider the estimation of fixed effects models from the perspective of least-squares dummy variables (LSDV), these results introduce a very large number of dummy variables (even larger than static fixed effect approaches) which eat up degrees of freedom. If we demean our data (as we have done here), we directly reduce the variation in our variables, which reduces the size of our coefficients. Still, the results are consistent, whether we use any of the above approaches, suggesting that the results are robust. However, we recognize that further tests are needed to ascertain the reliability of our regression results here.

5.1 | Robustness tests

Although the main results presented above indicate a broad upgrading effect in provision of decent work following South to North investment linkages, the way in which the outward investment linkage variable is measured can be confusing. Moreover, the two-dimensions on which the variable varies may introduce some form of bias. To address these two concerns, we constructed two alternative operationalizations of outward investment linkages. The first reduces the variable to its most basic form, a dichotomous identity variable which is 1 for city-sectors with investment linkages to the EU and a 0 otherwise. We find that, using this binary investment linkage indicator, the effect sizes are predictably much larger, remain significant,

and in the same direction as before, as reported in Table A3.[xv] Reduced to the basic form of an identity, outward investment is associated with a 7% point decrease in overworking, nearly 6% point decrease in informality, about 80% increase in permanent contract provision, and a 17% increase in the proportion of workers with wages above the state-sectoral median. One further alternative is to measure outward investment in international linkages only, thus omitting the local expansion of multinationals within the same sector in a given city. Cutting out domestic expansion theoretically should allow us to focus solely on the effect of the establishment of international linkages on local provision of decent work. These results are presented in Table A4, and closely match our main results, in size and significance. This similarity results from the fact that in our outward investment data, most variation stems from international expansion of the firms, rather than local and even when local variation contributes in a meaningful way, it is mostly isolated to years after our analysis (2012 and later).Our limited control approach in our main analysis was chosen to avoid the inclusion of bad controls, which could introduce endogeneity. However, we also recognize that omitting variables influential alternative explanatory variable could introduce omitted-variables bias. To address these concerns we also ran supplementary regressions including a wider range of controls according to the potential for affecting labor outcomes. The additional variables are *Education Rate*; *PT Government* (whether there is a Worker's Party executive in the municipality government); and *VAB Agriculture*, *VAB Industry*, and *VAB Services* which measure the (log) contribution of each broad economic sector to the local economy (measured in Brazilian *reais*). The results of this "kitchen sink" approach are reported in Table A5 and are largely supportive of our main results above with the exception of permanent contracts provision, which has its statistical significance reduced with a *p*-value of 0.06, just missing conventional levels of significance. However, given the likelihood of bias induced by bad controls, we do not consider these results as dependable relative to those reported in the main analysis above.

We also ran a supplementary set of regressions with standardized dependent variables[xvi] across a lag distribution including a one-year lead to a 3-year lag. The effects across different lags are plotted in Figure A2 in the Appendix. We can see from the the plotted coefficients and 95% confidence intervals that there is little evidence of a reverse causal relationship, as the effect with the one-year lead is either not significant (according to the confidence intervals including zero) or indicating worse working conditions in the period before investment (according to the direction and size of the coefficient). We also find that outward investment is associated with the largest improvement in provision of permanent employment followed by better wages, decreasing informality, and, finally, less overworking. Finally, we find that the impact for all four measures are strong in the first-year, followed by a decrease in effect in the second, and a further amplification of effect in the third-year. This could be interpreted as differential temporal effects according to the different mechanisms or adjustments as multinationals undertake multiple rounds of practical changes. All in all, we find little evidence of a reverse causal relationship or other source of endogeneity (e.g., growth leading to better conditions) nor of the effect being entirely dependent on the choice of lag duration.

However, we recognize that by using firm-level foundations in our theoretical expectation and then testing our hypotheses with aggregated meso-level data, we run the risk of omitted variable bias resulting from firm-level mechanisms. For example, one could argue it is possible that changes in management or some other firm-level phenomenon affecting corporate strategy at some or all of the multinationals included in our raw FDI linkage data drove the decisions to both invest and upgrade working conditions. We conducted a review of company and investment reports, trade (i.e., industry) publications, and academic case studies and found that only

in about 25% of companies was there a shift in management at the corporate level. The included firms are very heterogeneous according to their management style and composition. We believe that the results of our documentary analysis do not support the alternative hypothesis that changes in management can explain both the dependent and independent variables. Moreover, there is substantial variation among the companies. Some have a history of private ownership, some have a history of public ownership but were privatized in the 1990 s; some are family owned, some are public companies, and some are a mix; some operate in only a single sector, some across many sectors; some make clear that they focus on maximizing shareholder value while others make at least nominal claims to being socially conscious firms with outlines of their contributions to social and environmental sustainability; some are very, very large while others are relatively small. We argue that this variation in company attributes means that the raw data used to construct the outward investment linkage variable should not contain unmeasured bias that would introduce some form of troublesome omitted variable bias in our results.[xvii] We also note that in recent work utilizing cross-national data and system GMM estimator, we find corroborating evidence for the causal relationship we propose here (Raess & Wagner, 2022).

Finally, we utilize a lower level of aggregation for the economic sectors by which our investment and working conditions are indexed. By disaggregating from the Section to the Division level in the CNAE sector definition, we can generate finer point estimates and further address aggregation bias. These results are presented in Table A6. Our results are not only robust to the lower level of aggregation but are generally stronger, with larger estimated effects and increased significance through smaller standard errors. The exception here is overworking, which loses its significance (p-value of 0.245). While this approach reduces statistical noise by providing a finer definition of economic sector, it comes with a trade-off, that is, a substantial increase in the proportion of zeros in the data, especially the independent variable, where less than 1% of values are non-zero. If we subset to non-zero values, we find a negative and significant correlation between outward FDI and overworking using the less aggregated data. Another alternative is to again use the bivariate version of outward investment linkages. These results are reported in Table A7. Here we find that, as before, the coefficients are larger and the significance of all coefficients more closely mirrors our earlier results. As a result, we believe that the non-significant results reported for overworking in nine are largely due to the inflation of zero values in the independent variable.

6 | TEXT MINING AND ANALYSIS

One of the major drawbacks of statistical and descriptive analyses is their regular reliance on assumptions about causal mechanisms. A qualitative analysis can help uncover precise mechanisms which can complement the quantitative analysis. In this section, we present evidence from official worker and employer union publications which help to substantiate the mechanisms through which social upgrading via investment linkage can occur. Brazilian labor unions use their web portals as megaphones, highlighting cases of abuse by employers; rallying members to strikes, protests, or social functions; and to disseminate relevant news pertaining to organizational activities and local, national and international occurrences. Employer organizations similarly use their websites and portals as a means of disseminating information about their activities and as a means for signalling to the public areas of concern or interest to them. We collected this documentary evidence by identifying relevant *sindicatos trabalhistas* and

patronais (worker and employer unions, respectively) for each Brazilian MNE home-country location included in our analysis as well as the *federações* and *confederações* (federations and confederations) with which each union is associated. Having compiled this list of relevant institutions we checked whether each union, federation, and confederation maintained a website with press or other documentary content that included multiple years in the period of our analysis.

Using this list of worker and employer union sites, we constructed web scraping functions in R to iteratively search out articles with mentions of each company, compile these articles into a list of URLs, access each article at its URL, and scrape the content (that is, the headline, date, and body) of each. This ultimately left us with 9951 relevant and unique workers' union articles and 1685 employer union articles. For this documentary analysis, we further filtered these employer and worker union articles to those that included mentions of any of the countries in the EU + EFTA. This resulted in 727 unique workers' union articles and 249 employer union articles which were manually reviewed, selecting any articles containing evidence regarding the proposed investing-up mechanisms. Below, we present evidence from those articles out of the sample that pertain to the California Effect and socialization of Brazilian MNEs. We start here with the worker union articles.

According to the application of Vogel's (1995) California Effect by Greenhill et al. (2009), image conscious firms will upgrade their practices and those of their suppliers in order to avoid campaigns by stakeholder groups that could have negative reputational effects. Executives from Brazilian MNEs, such as Margrig, confirmed the necessity of socially sustainable practices in order to appease stakeholders and maintain economic activity in European countries (FIESP, 2015a). For Brazilian MNEs investing in Europe, one of the most important stakeholder groups are active labor unions and the networks they establish between home- and host-countries. The existence of these networks is by no means new in Brazil[xviii] and their existence has drawn back considerable attention among scholars and workers' organizations alike to labor internationalism. This is especially true concerning "the possibility of new alliances... [and] new union strategies in" multinational corporations from developing countries (Framil Filho & e Silva, 2019, p.192). The expansion of MNCs into new markets, which once referred solely to expansion from the Global North into Brazil and other developing countries, gives "far-flung workers common targets [and] their corporate organizational structures provide road maps for the spread of global campaigns" (Evans, 2010, p.352).

As Brazilian multinationals invest abroad, unionists in Brazil "are becoming the protagonists and constructing networks," (FUP, 2014) in order to "pursue common objectives" and "defend the rights and interests of workers, by reaching out to their peers in host countries" and *continue* the work of unifying the rights of workers in all the plants"in Brazil and the rest of the world (CNQ-CUT, 2013; CUT, 2013). According to Paulo Cayres, speaking about the union network within Companhia Siderúrgica Nacional (CSN), "[w]ith the Networks, our fight against accidents and for better working conditions in every location of a single company becomes that much stronger" and "the workers can guarantee common rights" where before, they could not (Instituto Observatório Social, 2013). João Cayres and Fábio Lins, Secretaries-General of International Relations at CNM-CUT[xix] and CNQ-CUT,[xx] respectively, see networks as a means "to achieve equal rights and remuneration in Brazil... as well as to strengthen solidarity to promote decent work in partnership with unions and workers... in other countries," a relationship that has already "made possible the defense of employment and the rights of workers" within Brazilian multinationals (Instituto Observatório Social, 2013). Networks help achieve these goals by "monitor[ing] work and environmental conditions throughout the

productive network" of Brazilian multinationals, allowing workers in Brazil and Europe to "pursue objectives and goals common to all" and 'name and shame' intransigent employers (; Mello e Silva et al., 2015; Stevis & Creation, 2009). For example, when Dutch workers came to know about abusive working conditions being used by Brazilian multinationals that were operating in the Netherlands, they organized a pressure campaign against the involved companies (Madarazo, 2011). Ricardo Jacques of CONTRAF/CUT[xxi] encapsulates the importance of networks: "it is necessary to join forces between workers in Jaraguá do Sul and other WEG facilities in ...the world," to confront internationalized employers who justify differentiated treatment based on prevailing practices in each location (Sindicato dos Metalúrgicos de Blumenau, 2013). Ricardo continues, "WEG products are always sold for the same price, therefore, workers have the right to sell their labor for the same price" (Sindicato dos Metalúrgicos de Blumenau, 2013).

Although union networks are not entirely new, each new investment linkage established by a Brazilian MNE, such as WEG or Marfrig, creates an opportunity for workers and "unions to strengthen themselves through the union network to achieve equal rights and remuneration" and "to strengthen solidarity and promote decent work in partnership with other unions and workers present in other countries" (Instituto Observatório Social, 2013). Without investments in Europe, workers in Brazilian MNEs would not have the opportunity to link with their counterparts in developed countries and leverage their connections in pursuit of social upgrading. The actions of unions and union networks supports our first proposed institutional mechanism.

In the case of socialization, investments provide numerous novel opportunities for socialization between host- and home-country location representatives which can lead to diffusion of practices (example, in Decreton et al., 2019). In the specific case of Brazilian multinationals investing in Europe, these opportunities abound and vary considerably. Embraer participated in meetings with the European Commission as investments in Brazil reached 13.2 billion Euros, the fifth largest investor in the EU (CNI, 2013). Following CSN's investments in Germany, the German ambassador visited CSN's headquarters in Brazil to discuss the institutional differences between the countries and exigencies that Brazilian companies will need to undertake and the necessity of standardizing practices throughout corporate networks (FIESP, 2013). Companies such as Embraer and WEG began sending their executives and managers to seminars and certification courses in France where they learn about modern European management styles and how the internationalizing Brazilian economy can better integrate into the markets with which the multinationals are bringing them in contact (CNI, 2014).

Employer unions and associations from Brazil and the host countries also conduct conferences and symposiums to exchange knowledge. In 2014, the *Symposium on Patterns in Global Sustainability* focused on the topic of "Global Patterns in Sustainability" (FIESP, 2015a). The conference included speakers such as Indranil Chakrabarti, from the UK Department for International Development (DFID), who "emphasized the role of the private sector in economic development and combating misery" as well as "the eradication of poverty" citing as an example efforts made in Rio de Janeiro to encourage better labor practices. Christian Robin, from the Swiss State Secretariat for Economic Affairs, spoke about the importance given in Switzerland to products produced in a sustainable manner: "in the management of global value chains" social sustainbaility "is of great importance in the long-term survival of companies" in Swiss markets. At another conference, representative of Brazilian and European MNEs stressed the importance of "sustainable enterprises, that generate quality employment" with one speaker highlighting how conferences help "disseminate new actions and pioneer projects... [by] bringing experiences and testimony of companies and human rights" (FIESP, 2015b). At

the same conference, the EU ambassador instructed the Brazilian participants that "sustainability of all kinds is a vital theme for the EU" including how "[s]upply chain transparency and information for the consumer are of great importance and growth must be sustainable and inclusive." He continued, stating that Europe "wishes to spread [these concepts] as widely as possible" and that "European companies are leaders in sustainable technology which gives them competitive advantages."

The points stressed both by European representatives in their instruction to their Brazilian counterparts as well as recounted by representatives of companies such as Marfrig are identical to those hypothesized before, namely, that OFDI into high standard markets exposes Brazilian multinationals to diffusion of practices through opportunities for learning from and socialization with European styles of socially sustainable management, labor relations, and working conditions *as well as* coercive market pressures (i.e. consumer preferences and avoiding reputational damage). The evidence for the former is largely circumstantial, however, failing to conclusively identify the effect of the proposed mechanism unlike with the latter, that is, stakeholders like the *redes sindicais* and the institutional California Effect. Yet, arguably, linkages such as those created by outward investment present new opportunities for the diffusion of practice precisely through the channels identified in the documentary evidence covered in this section. In the European context, Martin and Swank (2012) outline precisely one such avenue for the diffusion of a European social model of business management between firms through learning and socialization within European employer associations. How the socio-political preferences of already embedded firms affects new arrivals, such as multinationals from the Global South, is an important future area of inquiry.

7 | CONCLUSION

Our study provides a first examination of whether investment in Europe by developing country multinationals can lead to the provision of decent work conditions in the investing country and how they might do so. As the leading emerging economies like Brazil addressed the worst violations of workers' rights, such as slave or child labor, secondary issues pertaining to decent work conditions gain importance as the next major step in improving workers' lives. While the activities of NGOs, unions, and international organizations contribute explicitly to achieving these goals, there can also be less direct, unintended channels through which improvements can occur. These channels were previously explored in the California and Shanghai Effects and related literature and have been expanded to include South to North investment linkages here.

The statistical results at the municipality levels provide evidence for the proposed investing up effect, showing consistency across time and with narrower sector classifications. Moreover, these results are consistent using alternative modelling approaches, including dynamic fixed effects. It appears that the channels through which globalization can have a normatively positive effect on labor standards are not just isolated to the effect of economic flows driven by the Global North nor solely to collective or *de jure* rights. Globalization driven by countries from the Global South can also lead to improvements in working conditions, in practice.

Moreover, we provide evidence confirming our theoretical mechanisms. Unions leverage the linkages established by the Brazilian MNEs to construct networks which they use to pursue social upgrading in Brazil. Brazilian MNEs, being reputation conscious due to their increased international profile, become more likely to acquiesce to the combined efforts of the home- and host-country worker representatives. The employers are also exposed to management methods

and social conceptions that they otherwise would not have been socialized to with the same level of intensity.

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ENDNOTES

[i] While it can be argued that developed countries more generally have high standards relative to developing countries like Brazil, European countries, defined as the member states of the European Union (EU) and the European Free Trade Association (EFTA), stand well apart from the main alternative, the USA (King & Rueda, 2008). Historical accounts of rapidly declining union membership, stagnant wages, declining benefits provision, and excessive (by European or even Brazilian standards) work hours in conjunction with recent controversies concerning things like employees being forced to wear diapers to avoid taking bathroom breaks or even urinating on a production line emphasize this point (e.g., Oxfam, 2016, *but see also*: https://www.businessinsider.com/smithfield-urination-incident-reveals-workers-struggles-2018-10?r=US&IR=T).

[ii] Even in the more liberal UK economy, there still exists areas in which social dialogue and high-standard industrial relations persist, often as a result of intra-European diffusion (Tüselmann et al. 2002).

[iii] Although the *Banco do Brasil* keeps a registry of inward and outward investment flows, disaggregated annual data, especially at a sub-national level, is not publicly available.

[iv] For example, those of *Refinitiv* and *fDi Intelligence*

[v] At last glance, the actual transaction amounts for Brazilian investments in other countries are only provided for roughly 65% of the acquisitions in *Refinitiv*'s data and we identified many acquisitions that were simply missed.

[vi] This data was generated as part of a larger data project included in one of the author's PhD thesis (Wagner, 2022).

[vii] CSN, Vale, and a number of other Brazilian multinationals operate in multiple sectors in Brazil. Each Brazilian facility of each multinational is coded according to the sector in which that facility operates. In the example of CSN that is provided, that means that each of those sectors in, for example, São Paulo experience an increase in the investment linkage variable when CSN acquires a subsidiary in Europe. This allows for improved linking of worker outcomes defined in the next section and the investment linkages in their location/sector.

[viii] Note, however, that we do consider simpler alternative operationalizations in the robustness test section.

[ix] At the Seção (Section) level of the governmental sector classification(the *Classificação Nacional de Atividades Econômicas* 2.3 - CNAE). Details about sector definition at the Section and Division (less aggregate) levels can be found in Appendix A.6.1 and A.6.2.

[x] For example, by providing a buffer to displaced workers (Dix-Carneiro & Kovak, 2019; Ponczek & Ulyssea, 2017).

[xi] Note that using average income, measured in absolute value or in minimum salary increments (as is common practice in Brazil) produces results consistent with those reported below for *Better Wages*.

[xii] Because we lack access to firm-level administrative data, this data is drawn from numerous sources including news reports, labor union press releases, and firm press releases and investor reports. As this approach likely introduces a not insignificant amount of measurement error, we also checked the robustness of our results to inclusion of time-varying fixed effects to implicitly control for time-varying confounders (as opposed to explicit inclusion of alternative controls). Our results are consistent, regardless.

[xiii] We use microregion rather than municipality fixed effects because microregions are collections of a small number of contiguous municipalities with similar geographic and productive characteristics, conceptually reflecting the intuition of a local labor market. Doing so allows us to control for relevant local characteristics while maintaining between-unit variation.

[xiv] Municipality boundaries change over the years as some secede to establish their own local government for a variety of reasons. We use correspondence tables provided by the Brazilian Statistical and Geographic Institute (IBGE in Portuguese) to ensure consistent borders across years, resulting in a slight reduction in the number of municipalities.

[xv] Note that in our robustness tests we use the more stringent interacted (i.e., time-varying) fixed effects, though our original specification used static fixed effects, precisely because this approach has a better chance of controlling for confounding factors and arguably is the more robust estimation strategy. However, the results presented in this section are consistent regardless of whether we use the simpler or more complex fixed effects approach.

[xvi] By standardized, we refer to mean-standardizing, which allows us to more directly compare estimates across outcomes.

[xvii] To further ensure that management change is not biasing our estimates, we restricted *Employment by BrMNEs* to include only employment by those companies that changed management in the period of our analysis and re-ran the analysis from Table 2. The estimated effect of outward investment linkages on working conditions was virtually unchanged.

[xviii] The first union network in Brazil was the South American Network of BASF Workers in 1999 which was soon followed by similar networks being established in Bayer and Akxo Nobel (da Costa, 2016).

[xix] Confederação Nacional dos Metalúrgicos da CUT, one of the largest and most active worker union confederations in Brazil.

[xx] Confederação Nacional do Ramo Químico da CUT (CNQ-CUT), which unifies chemical and petrochemical workers' unions throughout Brazil.

[xxi] Confederação Nacional dos Trabalhadores do Ramo Financeiro da CUT, the largest confederation of workers in the financial and banking sector. They are one of the largest and most active union entities in Brazil and Latin America, in general.

REFERENCES

Adolph, C., Quince, V. & Prakash, A. (2017) The Shanghai effect: do exports to China affect labor practices in Africa? *World Development*, 89, 1–18.

Aguiar do Monte, P. (2012) Job dissatisfaction and labour turnover: evidence from Brazil. *The International Journal of Human Resource Management*, 23(8), 1717–1735.

Almeida, R. & Carneiro, P. (2009) Enforcement of labor regulation and firm size. *Journal of Comparative Economics*, 37(1), 28–46.

Andreff, W. (2016) Outward foreign direct investment from BRIC countries: comparing strategies of Brazilian, Russian, Indian and Chinese multinational companies. *The European Journal of Comparative Economics*, 12(2), 79–131.

Anker, R., Chernyshev, I., Egger, P. & Mehran, F. (2003) Measuring decent work with statistical indicators. *International Labour Review*, 142, 147–178.

Arbix, G. & Caseiro, L. (2012) Destination and strategy of Brazilian multinationals. *Journal of Academic Research in Economics*, 4(2), 207–238.

Bassanini, A. & Venn, D. (2008) The impact of labour market policies on productivity in OECD countries. *International Productivity Monitor*, 17, 3–15.

Bosch, M., Goni, E. & Maloney, W.F. (2007) The determinants of rising informality in Brazil: evidence from gross worker flows. *World Bank Policy Research Working Paper*, 4375, 1–56.

Burgoon, B. & Raess, D. (2014) Chinese investment and European labor: should and do workers fear Chinese FDI? *Asia Europe Journal*, 12(1), 179–197.

Carbonai, D. (2019) Labor reform in Brazil, politics, and Sindicatos: notes on the general strikes of 2017. *Journal of Politics in Latin America*, 11(2), 231–245.

Cardoso, A. (2016) Informality and public policies to overcome it. The case of Brazil. *Sociologia & Antropologia*, 6, 321–349.

Center for Global Workers' Rights (2021). Labour rights indicators. Available from: [Accessed 1st February, 2021]. http://labour-rights-indicators.la.psu.edu/

Cha, Y. (2010) Reinforcing separate spheres: the effect of spousal overwork on men's and women's employment in dual-earner households. *American Sociological Review*, 75(2), 303–329.

CNI. (2013) Vice-presidente da Comissão Europeia discute acordo comercial e investimentos com empresários brasileiros. *Agência CNI de Notícias*. Accessed from. Available from: https://noticias.portaldaindustria.com.br/noticias/internacional/vice-presidente-da-comissao-europeia-discute-acordo-comercial-e-investimentos-com-empresarios-brasileiros/

CNI. (2014) Executivos brasileiros participam de programa de gestão estratégica na França. *Agência CNI de Notícias*. Accessed from. Available from: https://noticias.portaldaindustria.com.br/noticias/educacao/executivos-brasileiros-participam-de-programa-de-gestao-estrategica-na-franca/

CNQ-CUT. (2013) *Grupo de trabalhadores da WEG organiza segundo encontro da Rede no Espírito Santo*. CNQ-CUT NOTÍCIAS. Accessed from. Available from: http://cnq.org.br/noticias/grupo-de-trabalhadores-da-weg-organiza-segundo-encontro-da-rede-no-espirito-santo/

Coniglio, N.D., Prota, F. & Seric, A. (2015) Foreign direct investment, employment and wages in sub-saharan africa. *Journal of International Development*, 27(7), 1243–1266.

Cui, L., Meyer, K.E. & Hu, H.W. (2014) What drives firms' intent to seek strategic assets by foreign direct investment? A study of emerging economy firms. *Journal of World Business*, 49(4), 488–501.

CUT. (2013) *Encontro de trabalhadores quer fortalecer rede....* CUT NOTÍCIAS. Accessed from. Available from: https://www.cut.org.br/noticias/encontro-de-trabalhadores-quer-fortalecer-rede-e-acoes-sindicais-conjuntas-no-es-1511

da Costa, H. (2016) Redes sindicales de trabajadores: desafíos globales y locales. *Nueva Sociedad*, 264, 111–124.

da Rocha, L.P., Pero, V.L. & Corseuil, C.H. (2019) Turnover, learning by doing, and the dynamics of productivity in Brazil. *Economia*, 20(3), 191–210.

Davies, R.B. & Vadlamannati, K.C. (2013) A race to the bottom in labor standards? An empirical investigation. *Journal of Development Economics*, 103, 1–14.

de Barros, R.P. & Corseuil, C.H. (2007) *The impact of regulations on Brazilian labor market performance*. Chicago: University of Chicago Press.

de Oliveira, A.L.M., Luiéza, A. et al. (2015) *Brazil: case study on working time organization and its effects in the health services sector*. Geneva: ILO, Geneva.

Decreton, B., Nell, P.C. & Stea, D. (2019) Headquarters involvement, socialization, and entrepreneurial behaviors in MNC subsidiaries. *Long Range Planning*, 52(4), 101839.

Dembe, A.E., Erickson, J.B., Delbos, R.G. & Banks, S.M. (2005) The impact of overtime and long work hours on occupational injuries and illnesses: new evidence from the United States. *Occupational and Environmental Medicine*, 62(9), 588–597.

Deng, W.-S. & Lin, Y.-C. (2013) Parameter heterogeneity in the foreign direct investment-income inequality relationship: a semiparametric regression analysis. *Empirical Economics*, 45(2), 845–872.

Distelhorst, G. & Locke, R.M. (2018) Does compliance pay? Social standards and firm-level trade. *American Journal of Political Science*, 62(3), 695–711.

Dix-Carneiro, R., Goldberg, P.K., Meghir, C. & Ulyssea, G. (2021) *Trade and informality in the presence of labor market frictions and regulations*. Technical report. Cambridge: National Bureau of Economic Research.

Dix-Carneiro, R. & Kovak, B.K. (2019) Margins of labor market adjustment to trade. *Journal of International Economics*, 117, 125–142.

Dreher, A. & Fuchs, A. (2015) Rogue aid? An empirical analysis of China's aid allocation. *Canadian Journal of Economics/Revue canadienne d'économique*, 48(3), 988–1023.

Duanmu, J.-L. (2014) A race to lower standards? Labor standards and location choice of outward FDI from the BRIC countries. *International Business Review*, 23(3), 620–634.

Edwards, T. & Tempel, A. (2010) Explaining variation in reverse diffusion of HR practices: evidence from the German and British subsidiaries of American multinationals. *Journal of World Business*, 45(1), 19–28.

Engbom, N., Gonzaga, G., Moser, C. & Olivieri, R. (2022) *Earnings inequality and dynamics in the presence of informality: the case of Brazil*. Technical report. Cambridge: National Bureau of Economic Research.

Erickson, K.P. (1977) *The Brazilian corporative state and working-class politics*. Berkeley: University of California Press.

Evans, P. (2010) Is it labor's turn to globalize? Twenty-first century opportunities and strategic responses. *Global Labour Journal*, 1(3), 352–379.

Evans, P. (2014) National labor movements and transnational connections: global labor's evolving architecture under neoliberalism. *Global Labour Journal*, 5(3), 258–282.

Fei, D. (2020) Variegated work regimes of Chinese investment in Ethiopia. *World Development*, 135, 105049.

Ferner, A. & Varul, M. (2000) Vanguard'subsidiaries and the diffusion of new practices: a case study of German multinationals. *British Journal of Industrial Relations*, 38(1), 115–140.

Ferraz, J.C., Kupfer, D. & Serrano, F. (1999) Macro/micro interactions: economic and institutional uncertainties and structural change in Brazilian industry. *Oxford Development Studies*, 27(3), 279–304.

Fiaschi, D., Giuliani, E. & Nieri, F. (2017) Overcoming the liability of origin by doing no-harm: emerging country firms' social irresponsibility as they go global. *Journal of World Business*, 52(4), 546–563.

FIESP. (2013) Novo embaixador da Alemanha no Brasil se encontra com presidente da Fiesp. *Agência FIESP de Notícias*. Accessed from. Available from: https://www.fiesp.com.br/tag/fiesp/page/32/

FIESP. (2015a) Simpósio internacional na Fiesp discute sustentabilidade. *Agência FIESP de Notícias*. Accessed from. Available from: https://www.fiesp.com.br/noticias/simposio-internacional-na-fiesp-discute-sustentabilidade/

FIESP. (2015b) "Sustentabilidade não pode ser um projeto, e, sim, um processo", diz na Fiesp presidente da Eurocâmaras. *Agência FIESP de Notícias*. Accessed from. Available from: https://www.fiesp.com.br/noticias/sustentabilidade-nao-pode-ser-um-projeto-e-sim-um-processo-diz-na-fiesp-presidente-da-eurocamaras/

Flanagan, R.J. (2006) *Globalization and labor conditions: working conditions and worker rights in a global economy*. New York: Oxford University Press.

Fleury, A. & Fleury, M.T.L. (2011) *Brazilian multinationals: competences for internationalization*. New York: Cambridge University Press.

Fleury, M.T.L. & Fleury, A.C.C. (2016) O desenvolvimento das multinacionais brasileiras no cenário global. *GV EXECUTIVO*, 15(1), 34–37.

Floro, M.S. & Messier, J. (2011) Is there a link between quality of employment and indebtedness? The case of urban low-income households in Ecuador. *Cambridge Journal of Economics*, 35(3), 499–526.

Framil Filho, R. & e Silva, L.M. (2019) From global unions to the shop floor: trade union networks in transnational corporations in Brazil. *Global Labour Journal*, 10(3), 192.

FUP. (2014) Petroleiros iniciam encontro internacional para discutir demandas da rede sindical. *FUP NOTÍCIAS*. Accessed from. Available from: https://fup.org.br/ultimas-noticias/item/15655-petroleiros-iniciam-encontro-internacional-para-discutir-demandas-da-rede-sindical

Ghai, D. (2003) Decent work: concept and indicators. *International Labour Review*, 142, 113–145.

Gillis, M., Shoup, C. & Sicat, G.P. (2001) *World development report 2000/2001: attacking poverty*. Washington: The World Bank.

Greenhill, B., Mosley, L. & Prakash, A. (2009) Trade-based diffusion of labor rights: a panel study, 1986-2002. *American Political Science Review*, 103(4), 669–690.

Guérin, I. & Srivastava, R. (2012) Labour regulations and labour standards in India: decent work. *Labour*, 2, 20–2012.

Helfen, M. & Fichter, M. (2013) Building transnational union networks across global production networks: Conceptualising a new arena of labour–management relations. *British Journal of Industrial Relations*, 51(3), 553–576.

ILO. (2009) *Decent work country profile*. Geneva: International Labour Organization.

ILO. (2013) *Decent work country profile: a sub-national perspective in Brazil*. Geneva: International Labour Organization.

Instituto Observatório Social. (2013) Formada em Blumenau (SC) a Rede Sindical.... *CUT NOTÍCIAS*. Accessed from. Available from: https://www.cut.org.br/noticias/formada-em-blumenau-sc-a-rede-sindical-nacional-da-weg-a9c1

Kerner, A. (2014) What we talk about when we talk about foreign direct investment. *International Studies Quarterly*, 58(4), 804–815.

Khanna, T. & Palepu, K. (1997) Why focused strategies may be wrong for emerging markets. *Harvard Business Review*, 75, 41–54.

King, D. & Rueda, D. (2008) Cheap labor: the new politics of "bread and roses" in industrial democracies. *Perspectives on Politics*, 6(2), 279–297.

Kucera, D. (2002) Core labour standards and foreign direct investment. *International Labour Review*, 141(1), 31–69.

Lovell, P.A. (2000) Gender, race, and the struggle for social justice in Brazil. *Latin American Perspectives*, 27(6), 85–102.

Madarazo, G. (2011) Solidariedade e Igualdade de Oportunidades. *Confederação Nacional do Ramo Químico da CUT (CNQ-CUT)*.

Malesky, E. & Mosley, L. (2018) Chains of love? Global production and the firm-level diffusion of labor standards. *American Journal of Political Science*, 62(3), 712–728.

Marginson, P. & Sisson, K. (2004) *European integration and industrial relations: multi-level governance in the making*. Basingstoke: Palgrave Macmillan..

Martin, C.J. & Swank, D. (2012) *The political construction of business interests: coordination, growth, and equality*. Cambridge: Cambridge University Press.

Martin, N.D. & Brady, D. (2007) Workers of the less developed world unite? A multilevel analysis of unionization in less developed countries. *American Sociological Review*, 72(4), 562–584.

Matesco, V.R. & Hasenclever, L. (2000) As empresas transnacionais e o seu papel na competitividade industrial e dos pases: o caso do Brasil. In: *VEIGA, Pedro da Motta. O Brasil e os Desafios da Globalização*. Rio de Janeiro: Relume-Dumará, pp. 161–192.

Mello e Silva, L., Framil Filho, R. & Freston, R. (2015) Redes sindicais em empresas transnacionais. *Análises e Propostas*, 2015(5), 3–26.

Meunier, S. (2014) 'Beggars can't be choosers': the European crisis and Chinese direct investment in the European Union. *Journal of European Integration*, 36(3), 283–302.

Meyer, K.E. (2015) What is "strategic asset seeking FDI"? *The Multinational Business Review*, 23(1), 57–66.

Milberg, W. & Houston, E. (2005) The high road and the low road to international competitiveness: extending the neo-schumpeterian trade model beyond technology. *International Review of Applied Economics*, 19(2), 137–162.

Misoczky, M.C. & Imasato, T. (2014) The Brazilian sub-imperialist strategy of regional insertion. *Critical Perspectives on International Business*, 10(4), 274–290.

Mocelin, D.G. (2011) Redução da jornada de trabalho e qualidade dos empregos: entre o discurso, a teoria e a realidade. *Revista de Sociologia e Poltica*, 19(38), 101–119.

Mosley, L. (2008) Workers' rights in open economies: global production and domestic institutions in the developing world. *Comparative Political Studies*, 41(4–5), 674–714.

Mosley, L. (2011) *Labor rights and multinational production*. Cambridge: Cambridge University Press.

Mosley, L. & Uno, S. (2007) Racing to the bottom or climbing to the top? Economic globalization and collective labor rights. *Comparative Political Studies*, 40(8), 923–948.

Neri, M. C. (2002). *Decent work and the informal sector in Brazil*, Graduate School of Economics, Getulio Vargas Foundation, Ensaios Economicos da EPGE Working Paper 461.

Neumayer, E. & De Soysa, I. (2006) Globalization and the right to free association and collective bargaining: an empirical analysis. *World Development*, 34(1), 31–49.

Nölke, A. (2014) *Multinational corporations from emerging markets: state capitalism 3.0*. Berlin: Springer.

Olney, W.W. (2013) A race to the bottom? Employment protection and foreign direct investment. *Journal of International Economics*, 91(2), 191–203.

Orellano, V.I.F. & Pazello, E.T. (2010) Evolução e determinantes da rotatividade da mão-de-obra nas firmas da indústria paulista na década de 1990. *Pesquisa e Planejamento Econômico*, 36(1), 179–207.

Oxfam. (2016) *No relief: denial of bathroom breaks in the poultry industry*. Boston: Oxfam Report.

Park, S.-B. (2018) Multinationals and sustainable development: does internationalization develop corporate sustainability of emerging market multinationals? *Business Strategy and the Environment*, 27(8), 1514–1524.

Perkins, R. & Neumayer, E. (2012) Does the 'California effect' operate across borders? Trading-and investing-up in automobile emission standards. *Journal of European Public Policy*, 19(2), 217–237.
Perry, G. (2007) *Informality: exit and exclusion*. Washington: World Bank Publications.
Ponczek, V. & Ulyssea, G. (2017) *Is informality an employment buffer? Evidence from the trade liberalization in Brazil*. Unpublished Working Paper.
Poulsen, L.S. & Hufbauer, G.C. (2013) Foreign direct investment in times of crisis. *Transnational Corporations*, 20(1), 19–37.
Prakash, A. & Potoski, M. (2007) Investing up: FDI and the cross-country diffusion of ISO 14001 management systems. *International Studies Quarterly*, 51(3), 723–744.
Raess, D. and Wagner, P. (2022). *The social Europe effect: does southern investment in Europe affect labor standards in the global south?* Unpublished Working paper.
Ramamurti, R. & Singh, J.V. (2009) *Emerging multinationals in emerging markets*. Cambridge: Cambridge University Press.
Rodrik, D. (1997) Has globalization gone too far? In: *Has globalization gone too far?*. Washington, DC: Institute for International Economics.
Ronconi, L. (2012) Globalization, domestic institutions, and enforcement of labor law: evidence from Latin America. *Industrial Relations: A Journal of Economy and Society*, 51(1), 89–105.
Rui, H. & Yip, G.S. (2008) Foreign acquisitions by Chinese firms: a strategic intent perspective. *Journal of World Business*, 43(2), 213–226.
Sindicato dos Metalúrgicos de Blumenau. (2013) Criada rede sindical de internacional dos trabalhadores na metalúrgica WEG. *CUT-SC NOTÍCIAS*. Accessed from. Available from: https://sc.cut.org.br/noticias/criada-rede-sindical-de-internacional-dos-trabalhadores-na-metalurgica-weg-7f4f
Stevis, D. & Creation, J. (2009) *International framework agreements and global social dialogue: lessons from the Daimler case*. Geneva: International Labour Organization.
Sullivan, T.A. (2014) Greedy institutions, overwork, and work-life balance. *Sociological Inquiry*, 84(1), 1–15.
Tüselmann, H.-J., McDonald, F. & Heise, A. (2002) Globalisation, nationality of ownership and employee relations. *Personnel Review*, 31(1), 27–43.
Ulyssea, G. & Ponczek, V. (2018) *Enforcement of labor regulation and the labor market effects of trade: evidence from Brazil*. IZA Discussion Papers 11783. Institute for the Study of Labor (IZA).
UNCTAD. (2013) *World investment report 2013*. New York: United Nations.
UNCTAD. (2015) *World investment report 2015*. New York: United Nations.
Vadlamannati, K.C. (2015) Rewards of (dis)integration: economic, social, and political globalization and freedom of association and collective bargaining rights of workers in developing countries. *Industrial and Labor Relations Review*, 68(1), 3–27.
Vogel, D. (1995) *Trading up: consumer and environmental regulation in a global economy*. Cambridge: Harvard University Press.
Wagner, P. (2022). *Patient zero: unintended consequences and infectious upgrading, the effect of outward investment linkages with Europe on decent working conditions in Brazil*. Dissertation. Bern: Universität Bern.
Zeng, K. & Eastin, J. (2012) Do developing countries invest up? The environmental effects of foreign direct investment from less-developed countries. *World Development*, 40(11), 2221–2233.

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APPENDIX A

A.1 | SUMMARY STATISTICS AND CORRELATION TABLES

TABLE A1 Summary statistics

Variable	Obs	Mean	SD	Median	Source	Year
Overworking	240,944	22.74	24.74	16.67	Censo	2000, 2010
Informality	240,944	12.17	22.06	0.00	Censo	2000, 2010
Perm. contracts	204,913	1.15	11.46	0.00	RAIS	2000, 2010
Better wages	240,944	−0.21	1.71	0.00	RAIS	2000, 2010
EU FDI linkages	240,944	0.00	0.06	0.00	Multiple	1998–2015
Female population	240,944	49.36	1.70	49.49	Censo	2000, 2010
Percent employment by BrMNEs	240,944	0.00	0.91	0.00	Multiple	2000, 2010
(log) Exports to North	10,736	17.04	2.90	17.25	COMEX	2000, 2010
(log) GDP per capita	240,944	8.61	0.91	8.57	IBGE	1998–2015
(log) Population	240,944	12.49	1.13	12.38	IBGE	1998–2015
Education rate	240,944	12.09	5.37	11.33	Censo	1998–2015
PT government	240,944	0.06	0.24	0.00	Tribuna Eleitoral Superior	1998–2015
Valor adicional Bruto – Agriculture	240,944	474712.75	779824.03	238593.77	IBGE	1998–2015
Valor adicional Bruto - Industry	240,944	4488683.83	69878302.39	382196.76	IBGE	1998–2015
Valor adicional Bruto – Services	240,944	2642190.96	21576641.25	104477.22	IBGE	1998–2015

TABLE A2 Correlation table

Variable	EUFDL	FmlPp	EbBM	EtN	GDPpc	Pop	EdctR	PTGvr	VAB-A	VAB-I	VAB-S
EU FDI linkages	1										
Female population	0.013	1									
Employment by BrMNEs	0.001	−0.003	1								
(log) Exports to North	0.042	0.166	0.01	1							
(log) GDP per capita	0.024	0.09	0.009	0.335	1						
(log) Population	0.023	0.359	0.003	0.367	0.096	1					
Education rate	0.024	0.333	0.006	0.29	0.661	0.322	1				
PT government	0.007	0.014	0	0.04	0.129	0.085	0.102	1			
Valor adicional Bruto - agriculture	0.011	0.018	0.01	0.25	0.396	0.324	0.239	0.037	1		
Valor adicional Bruto – industry	0.04	0.084	0	0.284	0.092	0.214	0.139	0.021	0.043	1	
Valor adicional Bruto – services	0.042	0.125	0.002	0.295	0.191	0.33	0.229	0.053	0.071	0.827	1

A.2 | INVESTMENT LINKAGE DESCRIPTIVE MAPS, PLOTS, AND TABLES

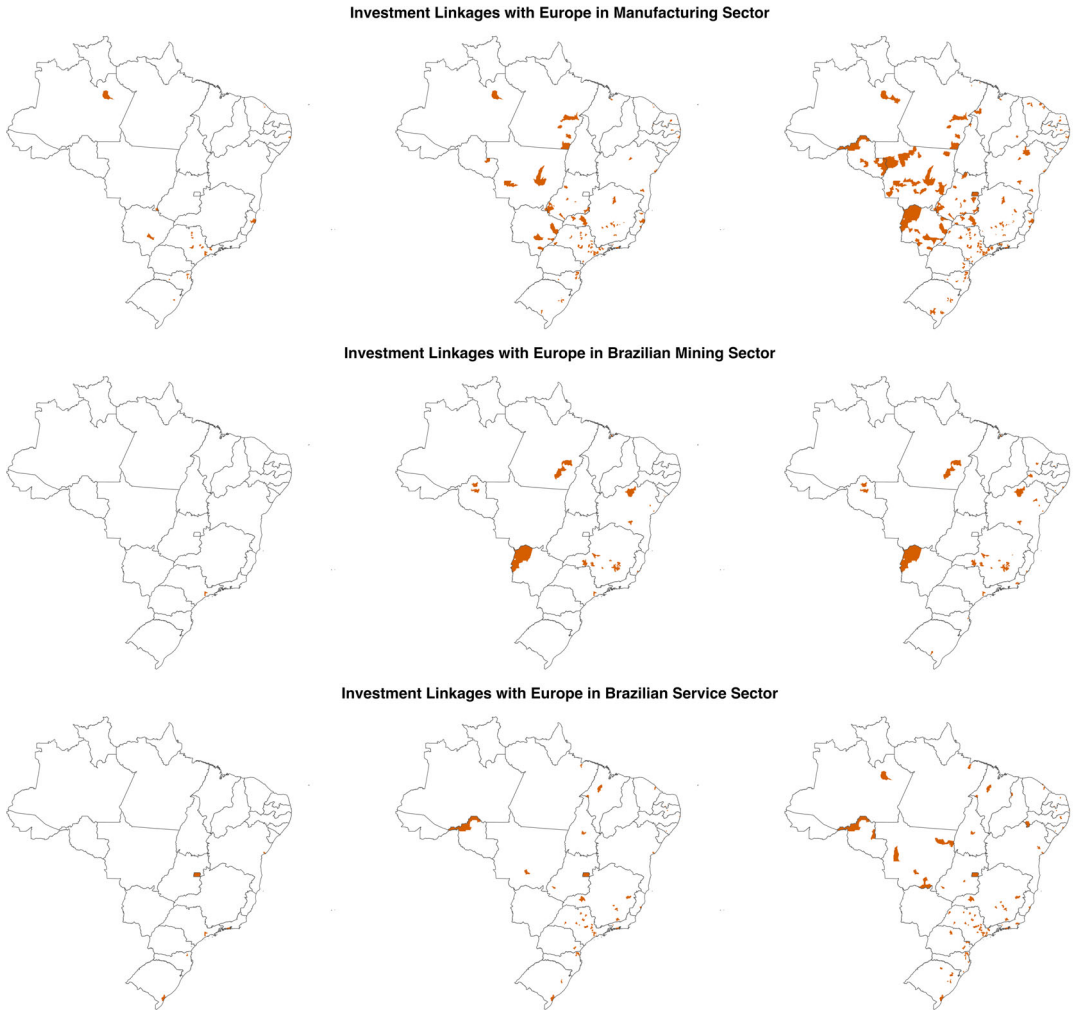

FIGURE A1 European outward investment linkages in Brazilian municipalities in manufacturing, extraction, and service sectors in 2000, 2008, and 2015

A.3 | ALTERNATIVE INVESTMENT LINKAGE VARIABLES

TABLE A3 Binary OFDI linkage[b]

	Overwork	Informality	Perm contract	Better wages
EU FDI Linkage	−7.36[a]	−5.67[a]	0.83[a]	0.17[a]
	(1.69)	(1.43)	(0.21)	(0.02)[c]
Micro × Year FEs	✓	✓	✓	✓
Sector × Year FEs	✓	✓	✓	✓
Micro × Sector FEs	✓	✓	✓	✓
R^2	0.40	0.62	0.58	0.27
Adj. R^2	0.36	0.60	0.55	0.23
Obs.	240944	240944	204913	240944
AIC	2133631.98	1966478.45	566525.98	47758.10
BIC	2273252.80	2106099.27	703909.23	187378.92
Log Likelihood	−1053380.99	−969804.23	−269833.99	−10444.05

[a]$p < 0.001$;
[b]$p < 0.01$;
[c]$p < 0.05$.

TABLE A4 OFDI linkage w/o domestic expansion of multinationals[c]

	Overwork	Informality	Perm contract	Better wages
EU FDI Linkage	−2.09[b]	−1.43[b]	0.31[a]	0.05[a]
	(0.62)	(0.46)	(0.07)	(0.01)
Micro × Year FEs	✓	✓	✓	✓
Sector × Year FEs	✓	✓	✓	✓
Micro × Sector FEs	✓	✓	✓	✓
R^2	0.40	0.62	0.58	0.27
Adj. R^2	0.36	0.60	0.55	0.23
Obs.	240944	240944	204913	240944
AIC	2133632.60	1966481.26	566503.27	47754.53
BIC	2273253.42	2106102.08	703886.52	187375.35
Log Likelihood	−1053381.30	−969805.63	−269822.64	−10442.27

[a]$p < 0.001$;
[b]$p < 0.01$;
[c]$p < 0.05$.

A.4 | KITCHEN SINK REGRESSIONS

TABLE A5 Kitchen sink regressions

	Overwork	Informality	Perm contract	Better wages
EU FDI linkage	−2.81[a]	−1.85[a]	0.11	0.36[a]
	(0.54)	(0.48)	(0.06)	(0.05)
Education rate	−0.03[c]	−0.22[a]	0.01[a]	−0.04[a]
	(0.02)	(0.01)	(0.00)	(0.00)
Female population	0.17[a]	0.22[a]	0.01[a]	−0.03[a]
	(0.03)	(0.03)	(0.00)	(0.00)
Employment by BrMNEs	0.06[c]	−0.03[c]	0.02[a]	0.00
	(0.03)	(0.02)	(0.00)	(0.00)
Ln. exports to North	(0.07)[a]	(0.05)[a]	0.00[b]	−0.00[b]
	(0.01)	(0.01)	(0.00)	(0.00)
Ln. GDP	−1.77[a]	6.25[a]	−0.31[a]	−0.14[a]
	(0.19)	(0.14)	(0.01)	(0.02)
Ln. population	3.08[a]	2.04[a]	0.12[a]	−0.57[a]
	(0.15)	(0.11)	(0.01)	(0.01)
PT government	−0.75[a]	−0.13	−0.02	0.06[a]
	(0.16)	(0.16)	(0.01)	(0.01)
VAB agriculture	0.59[a]	−0.35[a]	0.07[a]	0.04[a]
	(0.05)	(0.03)	(0.00)	(0.01)
VAB industry	1.03[a]	−1.13[a]	0.10[a]	−0.09[a]
	(0.08)	(0.05)	(0.00)	(0.01)
VAB services	−0.59[a]	−5.98[a]	0.37[a]	0.50[a]
	(0.14)	(0.14)	(0.01)	(0.01)
Microregion FEs	✓	✓	✓	✓
Sector FEs	✓	✓	✓	✓
Micro × sector FEs	✓	✓	✓	✓
Year FEs	✓	✓	✓	✓
R^2	0.39	0.51	0.61	0.15
Adj. R^2	0.35	0.49	0.58	0.10
Obs.	240944	240944	204913	240944
AIC	2138175.34	2026558.79	548664.51	930721.62
BIC	2271882.92	2160266.38	680226.70	1064429.20
Log likelihood	−1056221.67	−1000413.39	−261472.26	−452494.81

[a] $p < 0.001$;
[b] $p < 0.01$;
[c] $p < 0.05$.

A.5 | ALTERNATIVE LAGS

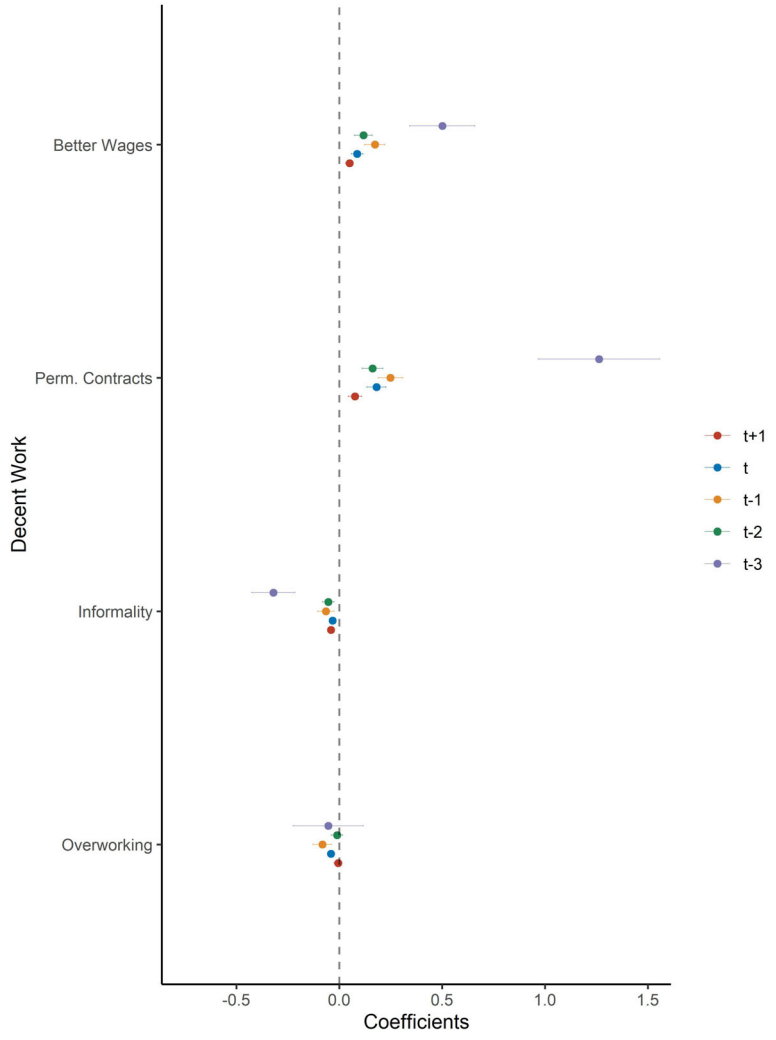

FIGURE A2 Effect over time of OFDI linkages on decent work

A.6 | CNAE SECTOR CLASSIFICATIONS AND DIVISÃO-LEVEL RESULTS

A.6.1. | CNAE 2.3 seção

The sectors are: A–Agriculture, livestock, forestry, fishing, and aquaculture; B–Extractive Industries; C–Transformative Industries (i.e., manufacturing); D–Utilities (i.e. electricity and gas); E–Water, sewage, management of residuals and decontamination; F–Construction; G–Sales, repair of vehicles; H–Transport, storage, and delivery; I–Room and board and restaurants; J–IT & Communication; K–Finance, insurance, and related activities; L–Real estate activities; M–Professional, scientific, and technical activities; N–Administrative services and complementary services; O–Public administration, defence, and social security; P–Education;

Q–Health and human and social services; R–Arts, culture, sports, and recreation; S–Other services; T–Domestic services; U–International organizations, NGOs, and other extraterritorial institutions.

A.6.2. | CNAE 2.3 Divisão

The CNAE 2.3 Divisão-level of economic sector classification disaggregates the Seção level into 87 distinct sectors. These are: 01–Agriculture, Livestock, and Related Services; 02–Forestry; 03–Fishing and Aquaculture; 05–Coal Mining; 06–Extraction of Oil and Gas; 07–Metallic Mineral Mining; 08–Non-metallic Mineral Mining; 09–Mining Support Activities; 10–Food Processing; 11–Drink Manufacturing; 12–Manufacture of Smoking Products; 13–Textile Manufacturing; 14–Clothing Manufacturing; 15–Leather Manufacturing; 16–Manufacturing of Wood Products; 17–Manufacturing of Cellulose, Paper, and Paper Products; 18–Manufacture of Recordings; 19–Manufacture of Coke, Oil, and Biofuel Derivatives; 20–Chemical Manufacturing; 21–Pharmaceutical Manufacturing; 22–Rubber and Plastic Product Manufacturing; 23–Non-Metallic Mineral Manufacturing; 24–Metallurgy; 25–Metal Product Manufacture, Except Machinery; 26–Electrical, Optical, and Information Equip Manufacture; 27–Manufacture of Electronic Machinery and Appliances; 28–Manufacture of Machinery and Equipment; 29–Automobile, Trailer, and Body Manufacture; 30–Other Transport Equipment Manufacture; 31–Furniture Manufacturing; 32–Manufacturing of Diverse Products; 33–Maintenance, Repair, and Installation of Machinery; 35–Utilities; 36–Water Treatment and Distribution; 37–Sewage and Related Activities; 38–Trash and Recycling; 39–Decontamination and Other Residual Management; 41–Construction of Buildings; 42–Infrastructure Works; 43–Specialized Services for Construction; 45–Car and Motorcycle Sale and Repair; 46–Wholesale Retail, Except Cars and Motorcycles; 47–Retail Business; 49–Terrestrial Transport; 50–Aquatic Transport; 51–Airborn Transport; 52–Storage and Auxiliary Transport Services; 53–Post and Other Delivery Services; 55–Accommodation; 56–Restaurant and Food; 58–Editing and Print Editing; 59–Video and Sound/Music Production and Editing; 60–Radio and Television Activities; 61–Telecommunication; 62–IT Services; 63–Information Service Provision; 64–Financial Services; 65–Insurance and Pensions; 66–Auxiliary Finance, Insurance, and Pension Services; 68–Real Estate Services; 69–Legal, Accounting, and Auditing Services; 70–Business Management Consulting; 71–Achitecture and Engineering Services; 72–Scientific R&D; 73–Marketing and Market Research; 74–Other Professional, Scientific, and Technical Services; 75–Veterinarian Services; 77–Other Rental and Asset Services; 78–Labor Agencies; 79–Tourism Agencies; 80–Security and Investigation Services; 81–Building and Landscape Management; 82–Administrative and Other Office Services; 84–Security, Defence, and Public Administration; 85–Education; 86–Health and Human Services; 87–Health Care Services for Private/Collective Residences; 88–Social Welfare Services; 90–Artistic, Creative, and Spectacle Activities; 91–Environmental and Cultural Heritage Activities; 92–Gambling and Betting; 93–Sport and Recreation; 94–Associative Organizations; 95–Repair of Computers and Home Appliances; 96–Other Personal Services; 97–Domestic Service; 99–International Oranizations and NGOs.

A.6.3. | Divisão model results

TABLE A6 Divisão model results

	Overwork	Informality	Perm contract	Better wages
EU FDI Linkages	−0.26	−0.35[c]	0.20[a]	0.01[b]
	(0.22)	(0.16)	(0.05)	(0.00)
Micro × Year FEs	✓	✓	✓	✓
Sector × Year FEs	✓	✓	✓	✓
Micro × Sector FEs	✓	✓	✓	✓
R^2	0.40	0.37	0.44	0.37
Adj. R^2	0.34	0.31	0.33	0.31
Obs.	565262	565262	234063	565262
AIC	5081619.88	5115151.41	875076.23	25473.98
BIC	5641623.10	5675154.64	1262416.63	586477.20
Log likelihood	−2491009.94	−2507775.71	−400162.11	36563.01

[a]$p < 0.001$;
[b]$p < 0.01$;
[c]$p < 0.05$.

TABLE A7 Divisão model results - binary investment linkage[b]

	Overwork	Informality	Perm contract	Better wages
EU FDI Linkages	−2.62[c]	7.32[a]	1.12[a]	0.05[a]
	(1.23)	(1.58)	(0.16)	(0.02)
Micro × Year FEs	✓	✓	✓	✓
Sector × Year FEs	✓	✓	✓	✓
Micro × Sector FEs	✓	✓	✓	✓
R^2	0.40	0.15	0.44	0.37
Adj. R^2	0.34	0.14	0.33	0.31
Obs.	565262	493776	234063	565262
AIC	5081618.05	2974822.91	875050.72	26471.28
BIC	5641621.28	3035682.60	1262391.12	586474.50
Log likelihood	−2491009.03	−1481933.45	−400149.36	36564.36

[a]$p < 0.001$;
[b]$p < 0.01$;
[c]$p < 0.05$.