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Political economy of labor market institutions in a globalised era

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Contents

List of Tables

List of Figures

Abstract

The paper extends the literature on the political economy of labor market institutions by developing a framework in which owners of capital can benefit from both greater labor market flexibility and better rule of law. Their choice of location of manufacturing centres can, therefore, by influenced both by reduction in expropriation that is associated with better rule of law and greater bargaining power vis-à-vis workers by way of greater labor market flexibility. It follows that where owners of capital are better placed to influence government choices of these institutions, labor market flexibility is influenced by both labor market institutions intensity of exports and as well as rule of law intensity of exports. These predictions are borne out by a cross-country empirical analysis.

JEL-Classification: D72, J41

Keywords: Labor market institutions; Political economy; Globalisation

1. Introduction

The large literature on labor market institutions[1] have primarily focused on two different issues. On the one hand, it examines the impact of these institutions on labor market outcomes such as employment rates and employment patterns (Svejnar, 1989; Nickell, 1997; Garibaldi and Brixiova, 1998; Blau and Kahn, 1999; Bertola et al., 2007), wage distribution and, by extension, income inequality (DiNardo et al., 1995; Calderon and Chong, 2008; Koeniger et al., 2009; Salverda and Checchi, 2015), and allocational (or matching) efficiency (Pries and Rogerson, 2005; Jung and Kuhn, 2014). The null hypotheses in this literature are that minimum wages (which create price floors) and other labor market "rigidities" such as high severance pay adversely affect employment rate and efficient matching between employers and workers (by skill), even if they reduce wage dispersion.[2]

On the other hand, the literature explores the implications of labor market institutions for economic growth and related issues such as productivity (Freeman, 1992; Nickell and Layard, 1999; Besley and Burgess, 2004). The popular wisdom associated with this literature is that labor market "rigidities" are associated with greater informality and, by extension, lower investment, output and productivity. The alternative view is that labor market institutions that enhance worker well-being (e.g., via minimum wage and severance pay) and their (usually collective) bargaining power may make workers more productive, enhance their trust in the system and, by extension, reduce their resistance to wider economic reforms that are necessary to facilitate growth.[3] Greater employment protection can also encourage investment in firm-specific skills that are associated with higher technical efficiency (and productivity) and is manifested via comparative advantage in firm-specific-skill-intensive sectors (Tang, 2012; Bhaumik and Dimova, 2014).

While it is important to examine the micro- and macro-level impact of labor market institutions, which have implications for policymaking, perhaps a more interesting question is how formal labor market institutions evolve (or are created) in economies. Note that, by their

[1] The literature primarily focuses on three different types of formal institutions, namely, minimum wage, unemployment insurance, and employment protection (Holmlund, 2014).

[2] Since overall income distribution depends on both wage dispersion of employed workers and the (un)employment rate, the impact of labor market institutions on income inequality remains an open empirical question.

[3] The latter argument about worker benefits leading to reduced resistance to wider economic reforms is consistent with the literature that examines the impact of inequality on economic growth (Persson and Tabellini, 1994).

very nature, formal institutions are created via legislations that are subject to influence by various political actors in the economy. Indeed, as observed by Saint-Paul (2000), if certain types of labor market institutions – those that are deemed "rigid" in the economics literature – are generally harmful from the perspective of employment generation, efficient reallocation of labor across firms and sectors etc, one has to be able to explain the existence, indeed persistence, of these labor market institutions. A good prior to approach that discussion is that observed institutions, rigid or otherwise, benefit some voters and/or interest groups and that it is in a government's interests to design labor market institutions in a way that sustain this benefit, perhaps at the expense of other voters and/or interest groups. This, indeed, is the essence of the political economy approach to the design of government policies and formal institutions (Pagano and Volpin, 2005; Besley and Ghatak, 2010; Calomiris and Haber, 2014).

The question, therefore, is how specifically these political actors influence these formal institutions. The discussion about the political economy of labor market institutions is relatively limited, however, at least compared to the discussion about the impact of these institutions on labor market outcomes such as employment generation, and the evidence about globalisation and labor market institutions, a key issue in today's political discourse, is even more limited. This paper extends this literature by exploring the link between globalisation and labor market institutions using a heuristic framework and a related empirical analysis.

Specifically, the paper draws on the modelling genre of Grossman and Helpman (1992) and Levchenko (2012) to develop a heuristic framework that posits that owners of capital do not lobby for a specific type of labor market institutions in isolation. The surplus that they enjoy depends on both labor market institutions and on other institutions such as rule of law such that they can trade-off between quality of rule of law that influences the extent to which the aforementioned surplus can be expropriated with the rigidity of labor market institutions that determine their bargaining power vis-à-vis workers. The heuristic framework in the paper predicts that cross-country variations in labor market flexibility, the proxy for labor market institution, would be affected by inter-country differences in specialization on exports that depend intensively on the flexibility of labor market institutions as well as by similar differences in specialization on exports that depend intensively on the quality of rule of law. The predictions are tested using a sample of 134 countries and the empirical results reported in the paper are consistent with these predictions.

The rest of the paper is structured as follows: The literature on the political economy of labor market institutions is discussed in Section 2. The heuristic framework is presented in Section 3, and the empirical strategy and the data are discussed in Section 4. Section 5 of the paper discusses the results of the empirical analysis and draws conclusions about the political economy of labor market institutions. Section 6 of the paper summarises the findings and concludes.

2. Literature review

Given the importance of labor market institutions for outcomes such as unemployment rate and income distribution, it is not surprising that economists and policymakers have long discussed the optimum design of labor market institutions. For example, Blanchard (2005) discusses issues such as the need for payment of unemployment benefits through a designated agency (or government department) and the relationship between employment protection and unemployment insurance. His analysis starts from the benchmark case in which firms that hire workers are risk neutral and the workers themselves are risk averse. Further, if a worker becomes unemployed, it is difficult to accurately predict the duration of unemployment. It is easy to see that, in such as set up, it would be optimal for the firms to provide unemployment benefits to workers. At the same time, however, since there is uncertainty about the duration of unemployment of individual workers, unemployment benefit cannot be in the form of a lump sum payment at the time of layoff. This benefit has to be paid out over time and also has to conditional on the employment status and job search status of a worker, and the requite monitoring requires that the payment be made through a dedicated unemployment agency (or government department). A firm can then make monetary contributions to this agency or government department to cover the costs of unemployment benefit, and it may be optimal for the agency to require an ex post payment given that the expected value of unemployment benefits may be more difficult to estimate ex ante.

Thereafter, Blanchard discusses the complications that are not captured by the benchmark model. First, he argues that it may not be optimal to fully insure the unemployed workers, to ensure that they have an incentive to search for jobs. However, since this would lead a loss of utility of these workers, it may be optimal to simultaneously make it more difficult to grant them some degree of protection against unemployment which, in turn, may lead to loss of efficiency on account of impeded reallocation of labor across firms. In other words, there may be a trade-off between employment protection and the generosity of unemployment benefits that has to be managed carefully. Second, since layoffs are usually made by firms when they experience weak growth or financial loss, i.e., at a time of financial distress, it may be difficult to many firms, especially small and medium enterprises (SMEs) to pay make a contribution to the unemployment agency at the time when workers are laid off. It may, therefore, be necessary to fund unemployment benefits through broader (higher) payroll tax. However, while a higher

payroll tax has implications for employment generation, a (relatively) low layoff tax may induce firms to layoff too many workers at times of financial distress. Third, generous unemployment benefits that are financed through a layoff tax on firms will increase the bargaining power of workers once they are employment and will result in wage increases. Once this impact of unemployment benefits on wage growth is taken into account, it may be optimal to reduce the unemployment benefits and to alter the balance between layoff taxes and payroll taxes that are used to finance these benefits. Finally, the design of these labor market institutions would also have to take into account the possibility that both firms and workers are heterogeneous; some firms operate in more volatile markets than others while some workers are more at risk of losing their jobs than others.

Blanchard's conceptual framework finds support in the wider literature on labor market institutions. For example, the discussion about the evolution of labor market institutions in the transition economies of Central and Eastern Europe (CEE) in Pilc (2015) suggests that strict employment protection and generous unemployment benefits may have been put in place by countries as a substitute for other forms of social protection, to provide protection against the risks posed by fluctuations in labor income. The discussion also suggests that there is wider recognition of the fact that employment protection and unemployment benefits effectively serve the same purpose, namely, providing protection against income shocks, and that these two pillars of labor market institutions may be treated as substitutes. From the political economy perspective, however, the most relevant observation of Pilc, drawing on the discussion in Checchi and Lucifora (2002), is that a positive correlation between the extent of employment protection and union coverage can be expected. From the same perspective, the most relevant conjecture of Pilc, drawing on North (1997) and the observed differences in employment protection and unemployment benefits between member countries of the Commonwealth of Independent States (CIS) and the transition economies of CEE, is that if countries lack a heritage of market economy and democracy then their governments may experience relatively low levels of political pressure to provide strong employment protection and/or generous unemployment benefits. Taken together, the observation and the conjecture suggest that labor market institutions in a context may be affected by the perceived and actual agency that political actors such as workers have in influencing government decisions, generally by way of collective action but also perhaps by way of median voter preferences.

Let us first consider the limited discussion in the literature about the role of informal institutions and norms on the design of formal labor market institutions. Algan and Cahuc (2009), for example, argue that stronger unemployment benefits are more likely to be observed in countries that have strong civic virtues such that people are less likely to cheat on such benefits. In countries with weak civic virtues, by contrast, governments will opt for stronger employment protection. D'Orlando et al. (2011) demonstrate that the demand for employment protection and unemployment benefits are stronger in countries where a large section of the people is fatalist and less in countries where the level of interpersonal trust is high. Ang and Fredriksson (2018) demonstrate that labor market "rigidity" is likely to be less in countries that are characterised by individualism and that this negative relationship is stronger in market-oriented economies, presumably because these economies provide greater opportunities for individuals to flourish. To the extent that the role of labor market institutions is to ensure that workers are not adversely affected by income shocks, while encouraging meaningful job search among unemployed individuals and ensuring the financial viability of the employers, some of these observations are easier to explain than others. For example, the demand for employment protection and unemployment benefits may be less in countries with high levels of interpersonal trust because the trust may reflect incidence of altruism and existence of a social contract that provides social insurance in other forms. On the other hand, while market-oriented economies may provide individuals with greater opportunities to flourish, income shocks are arguably more likely in these economies and hence it is unclear as to why the costs of "rigidity" of labor market institutions – employment protection, unemployment benefits etc – may exceed their benefits in these contexts.

Saint-Paul (2000) focuses on the rent that employed workers earn in the presence of labor market rigidities and argues that "where the rent [is] high because society *chooses* a ser of labor market institutions that generate a high rent …. the rent arises as an outcome of political decisions." Specifically, rent is supported by a set of employed workers, who are sometimes referred to as "insiders" in the labor economics literature, and it is opposed by the unemployed labor force participants (or "outsiders") who find it difficult to find employment if the high rents dissuade employers from hiring more workers. This line of analysis may be extended to accommodate heterogeneity in labor skill, with an excess demand prevailing in the market for skilled labor and excess supply prevailing in the market for (relatively) less skilled labor. If the

supply of skilled workers increases at a relatively slow pace because of frictions in the education sector and capital markets (especially where there is a significant private up front cost for education), skilled workers arguably earn rent on account of limited supply itself. In such a scenario, the politics of determining the level of rigidity of labor market institutions may play out more by way of interactions between the insiders and outsiders in the market for unskilled labor, and the incentive of the insiders to preserve the rent may increase if there is significant difference in the welfare/consumption ability of the average insider and outsider, at least until new job creation is thwarted to the point where the welfare of the insiders are also adversely affected because of their kinship links with the outsiders. Additionally, there is the possibility of coalition formation involving the skilled workers and the insiders among the less skilled workers, even though these coalitions are likely to be fragile in contexts where collective bargaining reduces the wage differential between skilled and less skilled workers (Moene and Wallerstein, 1995; Agell, 2002). In some cases, the employers themselves may be a party to coalitions that favour employment protection over more flexible labor market policies (Yun, 2009).

This begs the question as to why countries such as India, where the median voter is arguably an outsider (generally, by way of employment in the informal sector where labor market institutions do not apply by definition), have rigid labor market institutions. Rigid labor market institutions make it difficult for those employed in the informal sector to find jobs in the formal sector, if labor market rigidity adversely impact job creation in the formal sector. and since firms in the informal sector are not subject to formal labor market institutions, by definition, workers in this sector cannot earn rent on account of these institutions. Extending the line of argument in Saint-Paul (1996), it is, therefore, possible to posit that the median voter who is employed in the informal sector is, therefore, unlikely to vote for policies that reduce the possibility of job creation in the formal sector. Indeed, it has been observed that attempts to reform labor market institutions such as minimum wages, in favour of reducing the minimum wage, tend to succeed during times of unemployment and during times when a significant proportion of the labor force are on temporary contracts. Hence, it is likely that the median voters in these countries would opt for social insurance and redistribution policies that are administered by the government using taxes and transfers rather than through rigid labor market institutions.

A simple explanation for this puzzle may be that the relevant metrics measure the extent of these rigidities with error in such contexts and that that labor market institutions in these contexts may also not be as rigid as they seem (Nagraj, 2007). It may also be argued that rigid labor market institutions have less to do with strategic interactions of insiders and outsiders and are designed primarily to protect workers from both income shocks and low wages that are associated with "bad" jobs (Agell, 2002). A more stylised political economy argument would posit that the insiders may have much greater ability to organise themselves and bear the cost associated with such organisation relative to the outsiders (Sirohi, 2017). They may also be able to make a much more credible offer to share the rent with the political elite, given that they already earn rent. By contrast, if labor market rigidities are reduced, the beneficiaries of that process, namely, the erstwhile outsiders who find employment, will not earn rent and cannot, therefore, make a similar credible offer. One may also have to carefully consider the ways in which political party-trade union nexus – large trade unions in India are, by and large, affiliated with political parties across the ideological spectrum – affects the ability of these unions to extract rent for the insiders (Miyamura, 2016). The importance of this nexus becomes particularly important when one takes into account the possibility that causality may not necessarily run from trade union presence or density to right labor market institutions and that the very presence of these institutions may weaken trade unions (Checchi and Lucifora, 2002). In addition, one may have to take into consideration the change in the ideological composition of political parties over the years; available evidence suggests that ideology of the political parties that form governments influence their interventions in the labor market (Saint-Paul, 1996; Bonoli, 2010), perhaps by way of the preferences of the median voters in the respective voter bases.

One of the key factors that may reduce the ability of insiders to extract rent and the preferences of the median voter is a country's exposure to international competition, in particular, because while capital is mobile across borders, labor that is, by and large, immobile. Indeed, ILOSTAT data available from the World Bank suggests that, despite the political importance of migration in developed countries, there are only 164 million migrant workers in the world, out of a total global labor force of about 3.5 billion. Capital, by contrast, is much more mobile, especially as countries compete for foreign direct investment (FDI) even if they remail wary about portfolio investment. Boulihal (2009; pp. 24) argues that increasing outside

options for owners of capital increases their bargaining power via-a-vis workers and hence "increase in capital mobility creates political incentives to dismantle labor market institutions [that enable workers to earn rent], and trade liberalization magnifies these incentives." Bottone (2020) reports some evidence of such liberalisation in some European countries in the aftermath of the 2008 crisis, as countries chased investment and productivity growth.

However, empirical research about the relationship between globalisation and labor market institutions suggest that, despite a priori expectation that globalisation may lead to a race to the bottom (i.e., more flexible labor market institutions), the relationship may be weak. For example, after controlling for potential reverse causality, Potrafke (2013) does not find any impact of globalisation on labor market deregulation. This is consistent with the argument of Agell (2002) that labor market institutions provide social insurance and hence the demand for "rigid" labor market institutions may increase if globalisation increases the risk of investing in human capital. In the same vein, Felbermary, Larch and Lechthaler (2012) that governments set unemployment benefits to maximise the welfare of the representative agent. However, research on the impact of globalisation on labor market institutions is not commensurate with the political importance of this relationship, as evidenced from recent pushbacks against free trade, offshoring of production facilities and cross-border migration. In particular, there is little recognition of the possibility that firms (i.e., owners of capital) care as much about labor market flexibility as transactions costs associated with production, such that governments have two different ways to reward firms. The concern that multinational enterprises have about transactions cost in their host country contexts is well documented in the international business literature. The rest of this paper, therefore, explores the political economy of the impact of globalisation on labor market institutions in greater detail while taking into account this additional complexity.

3. A heuristic framework

We study Levchenko's (2012) economy in which three goods are produced, using labor (L) and/or capital (K). One unit of capital produces a units of the capital-intensive good (or K-good). Similarly, one unit of labor produces b units of the labor-intensive good (or L-good). Finally, y units of the third good, the M-good, is produced using 1 unit of labor and x units of capital. Constant returns to scale technology implies that the factor prices for (r) and labor (w) are given by $r = p_K a$ and $w = p_L b$, when p_K and p_L are the prices of the K-good and the L-good, respectively. In this Levchenko (2012) economy, the only institution to matter is the rule of law which facilitates contract enforcement. We will broaden the perspective towards two sets of institutions that matter for the owners of capital and labor power, namely, institutions that facilitate contract enforcement and those related to labor markets.

It is now well understood that the ability to write and enforce contracts is critical in the domain of private ordering (Williamson, 2002). Especially when investment is irreversible, poor contract enforcement can imply investment specificity. To introduce this notion, first consider technological specificity where investments are necessary in assets that cannot be easily reoriented towards the production of other types of goods. If, for example, a company A has to produce a good G for company B, and this production process requires investment in an asset that can only be used to produce good G, it is always possible for company B to act opportunistically and (say) refuse to pay the agreed-upon price for good G once company A has made the investment in the G-specific asset. In such a context, specialisation and exchange would be severely limited.

In this framework, however, contract enforcement – as all institutions do – both impacts on efficiency and creates rents. Contract enforcement does so by implying investment specificity. In producing the M-good, at a low level of contract enforcement, investors may have to re-negotiate with labor ex-post on their returns to investment. This makes a fraction ϕ of investment relation specific, i.e., its value is higher when left within than taken out of the relationship. The difference constitutes Caballero and Hammour's (1998) appropriable quasi-rent, which we will refer to as surplus. The fraction ϕ of investment which is relation specific thus directly denotes the quality of contract enforcement, where a high level of contract enforcement implies a low value of ϕ; $\phi \in (\underline{\phi}, \overline{\phi})$, where the upper and lower bounds are set by

the capacity of the legal system. Apart from creating the surplus, a low level of contract enforcement is associated with decreasing the willingness to invest below the efficient level. A high level of contract enforcement is thus associated with both higher efficiency and a low surplus, and vice versa.

The relevance of labor market institutions has already been discussed in the previous section, and we go beyond Levchenko (2012) in combining the discussion of both institutions. The labor market institutions determine the ability of the owners of capital to exploit the workers; alternatively, they manifest the relative bargaining powers of the owners of capital and the workers which is oft discussed in the labor economics literature (e.g., Naidu and Yuchtman, 2016). This bargaining power is given by λ ; $\lambda \in (\underline{\lambda},\overline{\lambda})$, where the upper and lower bounds are set by norms and skill sets of laborers. Note that these institutions matter only for the production of the *M*-good which involves a transaction between owners of capital and the workers.

By the definition of investment specificity, the surplus generated in the *M*-good sector in a Levchenko (2012) economy is given by

$$s = p_M y - w - r(1 - \phi)x \qquad [1]$$

and is affected by the quality of contract enforcement, ϕ. Deviating from Levchenko (2012), once this surplus has been realised, we will allow for it's not necessarily being shared proportionally by the owners of capital and the workers; owners of capital get a share λ of this surplus, which in tirn depends on the flexibility of labor market institutions. However, any sharing rule that is adopted has to satisfy the following individual rationality constraints for both factors of production:

$$r(1 - \phi)x + \lambda s \geq r\text{x} \qquad [2]$$

$$w + (1 - \lambda)s \geq w \qquad [3]$$

It is easy to see that [3] implies that $1 \geq \lambda$ which is always true and hence [2] is the more relevant of these two constraints. This constraint can be rewritten as as $\lambda s - \phi rx \geq 0$; the likelihood of this inequality to be satisfied decreases with ϕ and increases with λ.

Both the owners of capital and the workers can make contributions to the government to influence the institutional quality in the country. The owners of capital make a contribution $c_K = \alpha_K[\lambda s - \phi rx]$ when $\alpha_K \in (0, 1)$, while the workers make the contribution $c_L = \alpha_L(1 - \lambda)s$ when

$\alpha_L \in (0, 1)$. The government's objective is to maximise the likelihood of its re-election which depends on two things; it increases with the magnitude of the political contribution it accepts and decreases with the extent of income inequality in the economy, which we take to be described by capital's share of the surplus. The payoff function of the government, therefore, is $\pi = f_1(c) - f_2(\lambda s)$ when $c = \max[\alpha_K(\lambda s - \phi rx), \alpha_L(1 - \lambda)s]$; and f_1 is concave and twice differentiable while f_2 is convex and twice differentiable.

The game is played out in two stages. In the first stage, the owners of capital and the workers choose their respective contributions, c_K and c_L. In the second stage, given these contributions, the government chooses the (λ^*, ϕ^*) combination that maximises $\pi(.)$. The game can then be solved using backward induction. This is the political economy framework, which implicitly characterises the conditions under which the government would do the bidding for capital owners. This paper focuses on the political economy outcomes in situations where the owners of capital are able to influence the quality of rule of law and the labor market institutions. While this is not guaranteed, in principle, it is certainly a more likely scenario given that it is easier to organise the owners of capital than the workers who are much more dispersed. This is consistent with declining trade union membership among OECD countries as well as a decline in the share of workers covered by collective bargaining (Cazes et al., 2017).

Let us now introduce globalisation. Let there be two countries X and Y which are both characterised by the above framework. Owners of capital will have to decide where to locate the M-good industry – it can only be located in one country – and the owners of capital are likely to locate the industry in a country where institutional quality is high (i.e., ϕ is close to $\underline{\phi}$), or where the ability of owners of capital to expropriate workers is high (i.e., λ is close to $\overline{\lambda}$). The immediate implication of this insight is that if a country already has a small ϕ then it can only gain an advantage by increasing λ, and vice versa. It also follows that if the production of the M-good requires a small ϕ because of its complexity then a high ϕ country has to compete by increasing λ but there would be a limit to which this can happen, given the upper bound for λ. In other words, for industries that produce complex goods that require greater contracting among different sets of economic agents, it may not be possible for a country with weak contract enforcement to compete on the basis of flexible labor market institutions alone. Conversely, if the production of the M-good can be sustained with high ϕ

then a high ϕ country may be able to successfully compete for that industry by increasing λ. Finally, if the production of M-good requires an intermediate level of ϕ then location of the industry in a country may be consistent with a number of combinations of ϕ and λ.

The heuristic model presented above discusses potential interaction between owners of capital, workers and the government, without explicit reference to a country's comparative advantage. However, as institutions not only create rents but also impact on efficiency, institutions create comparative advantage: countries with good rule of law specialize on goods that depend intensively on the quality of rule of law, i.e., on contract-intensive goods (Nunn, 2007; Levchenko, 2007) while countries with flexible labor market institutions specialize in sectors that are subject to higher output volatility, as measured by the intra-sector variance of firm-specific shocks (Cuñat and Melitz, 2013). Once comparative advantage is taken into account, open economies with a comparative advantage in rule of law intensive goods will exhibit better rule of law (Levchenko, 2012; Frensch et al., 2019). By the same reasoning, the model hypothesizes that open economies with a comparative advantage in labor market flexibility intensive goods are likely to exhibit more labor market flexibility. The extended model also conjectures a "spillover" effect from a country's comparative advantage in rule of law intensive goods on its labor market flexibility.

4. Empirical strategy

4.1 Regression model

The regression model is given by the following equation:

$$LMF_i = \beta_0 + \beta_1 LMFix_i + \beta_2 ROLix_i + \Phi' X_i + \epsilon_i \quad [1]$$

when *LMF* is a measure of flexibility of labor market institutions for country i, $LMFix_i$ is a measure of the labor market flexibility intensity of exports, $ROLix_i$ is a measure of rule of law intensiveness of exports, X is a vector of control variables, and ϵ is the *iid* error term. Equation (1) is estimated using a cross-country sample (see Table 1).

The set of control variables largely follows the endogenous institutions literature (see, e.g., Levchenko, 2012). Country group dummy variables on legal origin are included to test whether labor market flexibility is shaped by different legal traditions. In particular, the paper follows La Porta et al. (2008) in allocating ex-socialist countries' legal origins to their respective pre-socialist traditions, in addition to controlling for their more recent socialist past. The control for countries' landlocked status is motivated by Carmignani (2015), who finds that the often-cited effect of that status on a country's trade in fact originates with its institutional consequences.

Further, in keeping with the hierarchy of institutions hypothesis, which argues that political institutions co-determine economic institutions (Acemoglu et al., 2005), the model specification control for the characteristics of political regimes within the scope of the World Governance project, as measured by the voice and accountability variable that provides an aggregate assessment of country-specific political institutions (Kaufmann et al., 2011). In addition, it allows for institutional effects from ethnic as well as religious fractionalization. Moreover, there are controls for geographically predetermined openness, population and pre-sample (1995) GDP per capita. The last two variables are from the Penn World Tables 8.0 (Feenstra et al., 2015). The initial GDP per capita level catches all growth and development channels that may drive differences in aspects of labor market flexibility. Pre-sample GDP per capita is chosen to exclude potential contemporaneous effects from the rule of law intensity of a country's exports on labor market institutions via rule of law and thus development.

Table 1: List of countries

Iso-code	Country	Iso-code	Country	Iso-code	Country	Iso-code	Country
AGO	ANGOLA	DJI	DJIBOUTI	KGZ	KYRGYZ REPUBLIC	PRY	PARAGUAY
ALB	ALBANIA	DMA	DOMINICA	KHM	CAMBODIA	QAT	QATAR
ARG	ARGENTINA	DNK	DENMARK	KNA	ST. KITTS AND NEVIS	ROU	ROMANIA
ARM	ARMENIA	DOM	DOMINICAN REPUBLIC	KOR	KOREA, REP.	RUS	RUSSIAN FEDERATION
ATG	ANTIGUA AND BARBUDA	ECU	ECUADOR	KWT	KUWAIT	RWA	RWANDA
AUS	AUSTRALIA	EGY	EGYPT, ARAB REP.	LAO	LAO PDR	SDN	SUDAN
AUT	AUSTRIA	ESP	SPAIN	LBN	LEBANON	SEN	SENEGAL
AZE	AZERBAIJAN	EST	ESTONIA	LCA	ST. LUCIA	SGP	SINGAPORE
BEL	BELGIUM	ETH	ETHIOPIA	LKA	SRI LANKA	SLE	SIERRA LEONE
BEN	BENIN	FIN	FINLAND	LTU	LITHUANIA	SUR	SURINAME
BFA	BURKINA FASO	FJI	FIJI	LVA	LATVIA	SVK	SLOVAK REPUBLIC
BGD	BANGLADESH	FRA	FRANCE	MAR	MOROCCO	SVN	SLOVENIA
BGR	BULGARIA	GBR	UNITED KINGDOM	MDA	MOLDOVA	SWE	SWEDEN
BHR	BAHRAIN	GEO	GEORGIA	MDG	MADAGASCAR	SYR	SYRIAN ARAB REPUBLIC
BIH	BOSNIA AND HERZEGOVINA	GHA	GHANA	MEX	MEXICO	TCD	CHAD
BLR	BELARUS	GIN	GUINEA	MKD	MACEDONIA, FYR	TGO	TOGO
BLZ	BELIZE	GRC	GREECE	MLI	MALI	THA	THAILAND
BOL	BOLIVIA	GRD	GRENADA	MRT	MAURITANIA	TJK	TAJIKISTAN
BRA	BRAZIL	GTM	GUATEMALA	MUS	MAURITIUS	TTO	TRINIDAD AND TOBAGO
BTN	BHUTAN	HND	HONDURAS	MWI	MALAWI	TUN	TUNISIA
CAF	CENTRAL AFRICAN REPUBLIC	HRV	CROATIA	MYS	MALAYSIA	TUR	TURKEY
CAN	CANADA	HUN	HUNGARY	NER	NIGER	TWN	TAIWAN, CHINA
CHE	SWITZERLAND	IDN	INDONESIA	NGA	NIGERIA	TZA	TANZANIA
CHL	CHILE	IND	INDIA	NLD	NETHERLANDS	UGA	UGANDA
CHN	CHINA	IRL	IRELAND	NOR	NORWAY	UKR	UKRAINE
CIV	CÔTE D'IVOIRE	IRN	IRAN, ISLAMIC REP.	NPL	NEPAL	URY	URUGUAY
CMR	CAMEROON	IRQ	IRAQ	NZL	NEW ZEALAND	USA	UNITED STATES
COL	COLOMBIA	ISL	ICELAND	OMN	OMAN	UZB	UZBEKISTAN
COM	COMOROS	ITA	ITALY	PAK	PAKISTAN	VCT	ST. VINCENT AND THE GRENADINES
CPV	CAPE VERDE	JAM	JAMAICA	PAN	PANAMA	VEN	VENEZUELA, RB
CRI	COSTA RICA	JOR	JORDAN	PER	PERU	ZAF	SOUTH AFRICA
CYP	CYPRUS	JPN	JAPAN	PHL	PHILIPPINES	ZMB	ZAMBIA
CZE	CZECH REPUBLIC	KAZ	KAZAKHSTAN	POL	POLAND		
DEU	GERMANY	KEN	KENYA	PRT	PORTUGAL		

4.2 Reverse causality

A key question from the perspective of empirical design is how to rule out possible reverse causality, specifically, the impact of a country's labor market institutions on its comparative advantage. In order to address this problem, the estimation follow the two-step approach of Levchenko (2012):

> *Step 1*. First, country-specific measures of institutional intensity of exports that are only geographically pre-determined, and thus independent from institutions, are constructed.
>
> *Step 2*. Next, the labor market flexibility measures are regressed on these pre-determined institutional intensity measures and controls.

The starting point for step 1 is Levchenko's measure of the rule of law intensity of country *i*'s exports which is given by

$$IIX(ROL)_i = \sum_k \hat{X}_{ik} \cdot ROLIX_k \qquad [2]$$

where ROL_i describes a country's rule of law, $ROLIX_k$ is the rule of law intensity of industry k, and $\hat{X}_{ik}$ is the geographically predicted export-to-GDP ratio for k and country *i.* However, we refine Levchenko's (2012) industry-specific approach by using highly dis-aggregated trade data to measure the rule of law intensity on goods level as the global average rule-of-law requirement to export good k,

$$ROLIX_k = \sum_i \underbrace{\left(\frac{X_{ik}/X_i}{\sum_i X_{ik}/X_i}\right)}_{\varphi_{ik}} \cdot ROL_i \qquad [3]$$

where $X_i = \sum_k X_{ik}$ and weights φ_{ik} denote a variant of Balassa's revealed comparative advantage to ensure that the ordering of goods is not biased by country size.[4] The good-specific measurement of labor market flexibility intensity is similarly computed as

$$LMFIX_k = \sum_i \underbrace{\left(\frac{X_{ik}/X_i}{\sum_i X_{ik}/X_i}\right)}_{\varphi_{ik}} \cdot LMF_i \qquad [4]$$

[4] For these calculations, we use the Stata routine PRODY (Huber, 2017). See Table 2 for our data description.

Next, $\hat{X}_{ik}$ is predicted following Frankel and Romer (1999), i.e., all goods-specific bilateral export relationships X_{ijk} (i.e., for all goods and all *ij* country pairs) are first regressed on geographical information alone, and then the aggregate measure $\hat{X}_{ik} = \sum_{j \neq i} e^{ln\hat{X}_{ijk}}$ is computed. This procedure is repeated to measure the labor market flexibility intensity of country *i*'s exports as

$$IIX(LMF)_i = \sum_k \hat{X}_{ik} \cdot LMFIX_k \qquad [5]$$

The analogous measures for the sub-indicators of labor market flexibility, namely, for flexibility of hiring *IIX*(*HIF*), flexibility of working hours *IIX*(*HOF*), and flexibility of redundancy *IIX*(*REF*), are analogously constructed.

As noted in Levchenko (2012, p. 1166), these measures may have high values "either because predicted overall trade … is high across all sectors … or because the country is predicted to export relatively more in the institutionally intensive sectors." In order to disentangle these two effects, all IIX measures are simply divided by the geographically predicted total exports to GDP ratio, $\hat{X}_i = \sum_k \hat{X}_{ik}$, which is a byproduct of the Frankel and Romer (1999) procedure mentioned above and which enables us to explicitly control for geographically predetermined openness *per se,* $\hat{X}_i$.One thus arrives at $ROLix_i = IIX(ROL)_i / \hat{X}_i$; $LMFix_i = IIX(LMF)_i / \hat{X}_i$, and analogous measures for the labor market flexibility sub-indices, as the geographically pre-determined measures of institutional intensities of a country's exports, to be used in our regressions.

4.3 Variable measurement and descriptive statistics

Measurements of other variables are reported in Table 2. Since institutions and comparative advantage are reflected in medium-to-long term averages, rather than in single year values of these variables, long-run averages are used for the analysis. The descriptive statistics for the variables are reported in Table 3. Figure 1 reports two scatter plots with labor market flexibility on the vertical axis and the geographically predicted measures of institutional intensities of a country's exports on the horizontal axis. The scatter plots provide early evidence of positive relationships between labor market flexibility and the aforementioned institutional intensities of exports, which is consistent with the predictions of the heuristic framework. These empirical relationships are examined more rigorously in the next section.

Table 2: Data description: Full sources and definitions

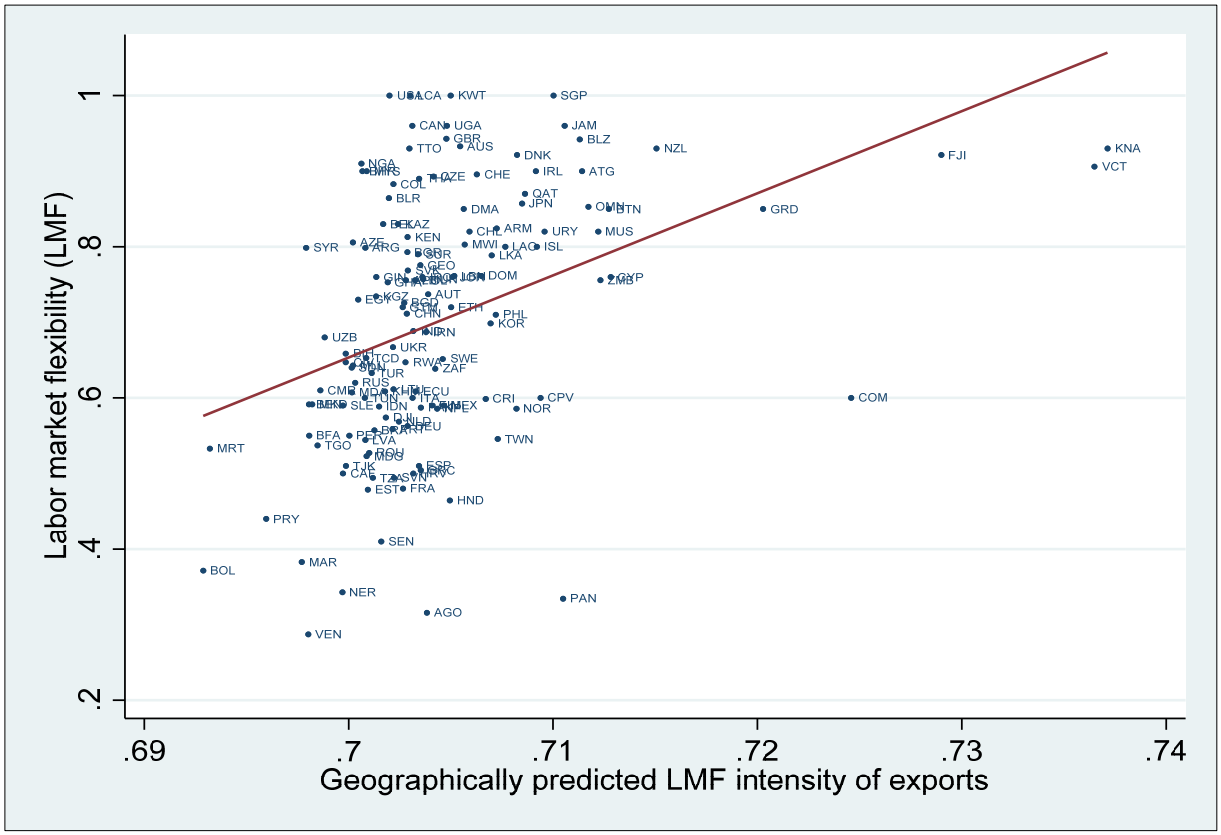
Labor market flexibility (LMF) and subindices: Flexibility of hiring (HIF), Flexibility of working hours (HOF), and Flexibility of redundancy (REF)	World Bank Doing Business Indicators 2004–10 Originally, all indicators are defined as rigidity indices between 0 and 100: Doing Business measures the regulation of employment, specifically as it affects the hiring and redundancy of workers and the rigidity of working hours. Sub-indicators: Difficulty of hiring, Rigidity of hours, and Difficulty of redundancy. Original values between 0 and 100 are rescaled as flexibility indices, between 0 and 1, according to: New index = (100 – original index)/100
Voice and accountability (Voice), Rule of Law (ROL)	Kaufmann et al. (2005), Worldwide Governance Indicators (https://datacatalog.worldbank.org/dataset/worldwide-governance-indicators) Voice and Accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Original values between –2.5 and +2.5 are rescaled to between zero and one.
Legal origin	La Porta et al. (2008) Categorization of the legal system into different legal traditions: Common law, French, German, Scandinavian, or Socialist
Ethnic and religious fractionalization in 2000	Alesina et al. (2003) Downloaded via QoG2020 (https://qog.pol.gu.se/data/datadownloads/qogstandarddata)
GDP per capita, population	Feenstra et al. (2015), PWT 8.0 GDP per capita in PPP adjusted international dollars Population in millions
Geographically predicted total exports to GDP ratio and Geographically predicted institutional intensities of exports	Own calculations, based on highly disaggregated trade data from CEPII's BACI, derived from UN-Comtrade: annual bilateral trade flows are in HS Code 92, at 6-digit level (5,017 items), described in Gaulier and Zignago (2012). See: http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=8 Exports are processed goods exports, isolated based on the United Nations Statistics Division's Classification by BEC (Broad Economic Categories, available online at http://unstats.un.org/unsd/cr/family2.asp?Cl=10). For the procedure of geographical pre-determination, see section 3.2
Landlocked	CEPII geographical database (http://www.cepii.fr/anglaisgraph/bdd/distances.htm) This is also the source for other geographical data that we need for geographically pre-determining exports: area, distance, common border.

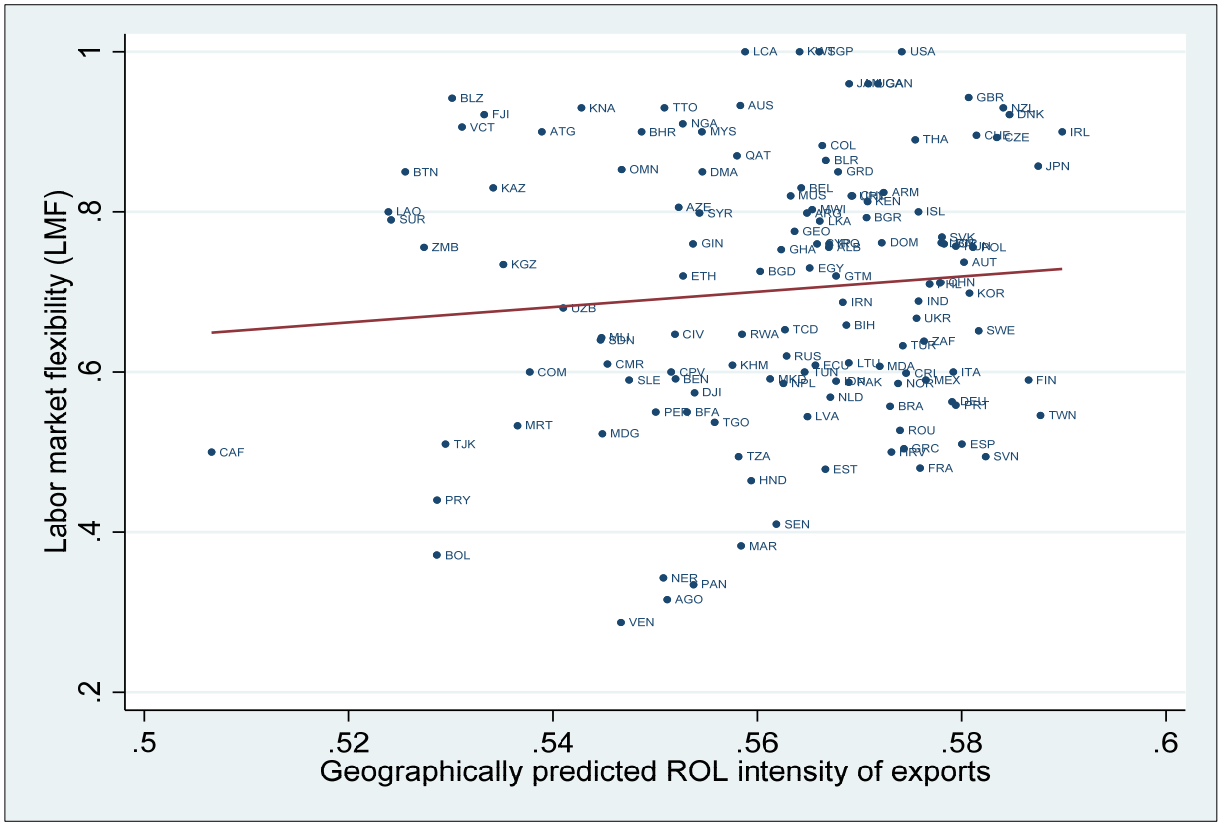
Table 3: Descriptive statistics of variables used in regressions

Variable	Obs	Mean	Std. Dev.	Min	Max
Labor market flexibility (LMF)	134	0.70	0.16	0.28	1
Flexibility of hiring (HIF)	134	0.65	0.25	0.01	1
Flexibility of working hours (HOF)	134	0.75	0.19	0.27	1
Flexibility of redundancy (REF)	134	0.69	0.21	0	1
Per capita GDP in 1995	134	9054.10	9808.05	375.36	44817.33
Population	134	43.67	148.18	0.04	1266.28
Landlocked	134	0.20	0.40	0	1
Common law legal origin	134	0.27	0.44	0	1
French legal origin	134	0.54	0.49	0	1
German legal origin	134	0.14	0.35	0	1
Scandinavian legal origin	134	0.03	0.19	0	1
Socialist legal origin	134	0.20	0.40	0	1
Rule of Law	134	0.50	0.19	0.16	0.88
Voice and accountability	134	0.50	0.18	0.11	0.82
Ethnic fractionalization in 2000	134	0.44	0.25	0	0.93
Religious fractionalization in 2000	134	0.44	0.23	0.003	0.86
Geographically predicted exports to GDP ratio	134	0.27	0.29	0.009	1.54
Geographically predicted LMF intensity of exports	134	0.70	0.02	0.63	0.78
Geographically predicted HIF intensity of exports	134	0.66	0.03	0.52	0.78
Geographically predicted HOF intensity of exports	134	0.73	0.02	0.68	0.81
Geographically predicted REF intensity of exports	134	0.71	0.02	0.60	0.81
Geographically predicted ROL intensity of exports	134	0.53	0.04	0.43	0.67

Note: Data for regressions are averaged over 2004–10.

Figure 1: Scatter plots





5. Regression results and discussion

The heuristic framework predicts that the coefficient of $LMFix_i$ in Equation (1) is positive ($\beta_1 > 0$), i.e. owners of capital who invest in countries that have geographically pre-determined comparative advantage in labor market institutions intensive goods will lobby for greater labor market flexibility. The framework also predicts that the coefficient of $ROLix_i$ in Equation (1) may be positive ($\beta_2 > 0$), such that owners of capital who invest in countries that have geographically pre-determined comparative advantage in rule of law intensive goods will also lobby for greater labor market flexibility. Given the positive relationship between pre-determined comparative advantage in rule of law intensive goods and countries' rule of law found in the literature (Levchenko, 2012; Frensch et al., 2019), this signals that the owners of capital may once again lobby for greater labor market flexibility if the quality of rule of law in a country increases, such that there is less scope to improve the quality of rule of law further.

Since the measures of labor market flexibility used for this empirical exercise are constructed to lie within the closed interval between 0 and 1, with increasing values indicating higher flexibility, Equation (1) is estimated to test these predictions using a fractional probit regression model. The regression results are presented as average marginal effects in Table 4. The reported standard errors are bootstrapped, based on 10,000 replications, to account for the presence of generated regressors, i.e., the geographically pre-determined measures.[5] The results indicate statistically significant positive associations between country-specific geographically predetermined measures of different aspects of labor market flexibility intensities of exports and the corresponding labor market institution. They also indicate statistically significant positive associations between the rule of law intensity of exports and labor market institutions, with one exception; the coefficient of $ROLix_i$ is statistically insignificant for the model in which *HIF* is the measure of labor market flexibility.

[5] Generated regressors are variable estimates rather than variables and have additional sampling variance that needs to be taken into account when calculating the variance of final parameter estimates (see, e.g., Imbs and Woolridge, 2007).

Table 4: Regression results: Average marginal effects from fractional probit regressions

Dependent variable	(1) LMF	(2) HIF	(3) HOF	(4) REF
Control variables				
ln(per capita income in 1995)	0.065***	0.095***	0.029	0.069***
	(0.017)	(0.030)	(0.019)	(0.023)
ln(population)	–0.017*	–0.007	–0.021*	–0.024
	(0.010)	(0.016)	(0.011)	(0.016)
Landlocked	0.054*	0.057	0.022	0.092**
	(0.029)	(0.051)	(0.036)	(0.047)
French legal origin	–0.167***	–0.194***	–0.252***	–0.086
	(0.035)	(0.054)	(0.047)	(0.053)
German legal origin	–0.203***	–0.161*	–0.303***	–0.178***
	(0.046)	(0.087)	(0.051)	(0.062)
Scandinavian legal origin	–0.167**	–0.175	–0.288***	–0.074
	(0.078)	(0.122)	(0.056)	(0.303)
Socialist legal origin	0.017	0.017	–0.029	0.065
	(0.028)	(0.051)	(0.038)	(0.042)
Voice and accountability	–0.316***	–0.415**	–0.436***	–0.134
	(0.092)	(0.194)	(0.121)	(0.134)
Ethnic fractionalization in 2000	–0.001	–0.122	0.004	0.116
	(0.057)	(0.089)	(0.071)	(0.091)
Religious fractionalization in 2000	0.163***	0.203**	0.110*	0.170*
	(0.055)	(0.101)	(0.065)	(0.088)
Geographically predicted total exports to GDP ratio	–0.014	0.044	0.007	–0.057
	(0.086)	(0.116)	(0.069)	(0.144)
LMF and ROL intensity of exports				
Geographically predicted LMF intensity of exports	6.181**			
	(2.472)			
Geographically predicted HIF intensity of exports		5.530**		
		(2.590)		
Geographically predicted HOF intensity of exports			6.909***	
			(2.615)	
Geographically predicted REF intensity of exports				6.211**
				(2.550)
Geographically predicted ROL intensity of exports	2.319**	–0.979	4.846***	3.581**
	(0.942)	(1.810)	(1.314)	(1.574)
Observations	134	134	134	134
left-censored	0	0	0	1
right-censored	4	16	33	26
Pseudo-R^2	0.058	0.089	0.098	0.062
Imputed R^2	0.488	0.353	0.453	0.323

Notes: (a) Bootstrapped standard errors (in parentheses) are based on 10,000 replications. *** p<0.01, ** p<0.05, * p<0.1. (b) Legal origin results are relative to common law. (c) Imputed R^2 is the squared correlation between outcome and fitted values (see Egger and Staub, 2016).

Two sets of robustness checks are undertaken. First the results are robust to the inclusion of additional variables (such as the share of urban population, WTO membership) or alternative measures of political institutions that can *a priori* be expected to have labor market flexibility effects but nevertheless remain insignificant throughout the estimation process. Second, the results are also robust to the use of alternative estimators, namely, fractional logit, Tobit and the linear regression model,[6] including respective IV-versions, in which pre-sample income per capita is used to instrument for sample period income per capita.[7]

The results provide *prima facie* evidence that when capital is mobile across countries, such that owners of capital can choose to locate their production in countries that maximises their surplus, they may be able to influence the labor market institutions of a country. Importantly, the owners of capital may lobby for greater labor market flexibility both when a country's comparative advantage lies in goods that are labor market institutions intensive and also when comparative advantage lies in goods that are rule of law intensive. Both results are compatible with our heuristic framework where specifically the latter comes with the caveat that this is more likely when the quality of rule of law is already significantly high such that additional surplus can only be generated using greater labor market flexibility. While this issue may have to be explored in greater depth in future empirical studies, on the basis of this paper's approach we show in Table 5 that the marginal effects of $ROLix_i$ on labor market flexibility measures increase when rule of law moves from its median to extreme values beyond 0.85. Again, this is not so for the model in which *HIF* is the measure of labor market flexibility.

Table 5: Marginal effects for $ROLix_i$ from fractional probit regressions, at different values of the rule of law

Dependent variable	(1) LMF	(2) HIF	(3) HOF	(4) REF
Geographically predicted ROL intensity of exports				
Marginal effects evaluated at the median of ROL	1.870**	–0.808	2.909***	3.197**
	(0.780)	(1.495)	(1.033)	(1.424)
Marginal effects evaluated at ROL > .85	2.455**	–1.075	6.216***	3.285
	(1.038)	(1.982)	(1.683)	(2.640)

Notes: (a) All Table 4 covariates are fixed at median value. (b) Bootstrapped standard errors (in parentheses) are based on 10,000 replications. *** p<0.01, ** p<0.05, * p<0.1.

[6] The results are available from the authors upon request.

[7] We estimate fractional response probit with continuous endogenous regressors using Williams' beta version Stata-command FRACIVP (Williams, 2015).

The analysis provides the basis for conjectures about how labor market institutions will evolve in an era that is marked by populism and one where large-scale unemployment and loss of income may persist well beyond the pandemic that is now part of our lives. One of the political realities of our times is populism which may be significantly related to identity issues but a portion of which can perhaps be attributed to inequalities of opportunities and outcomes as well (Guriev, 2018). In a number of countries, especially in the developed ones, this rise in populism coexists with a backlash against globalisation. In developing countries, on the other hand, economic inequality may give rise to party-based clientelism (Markussen, 2010). At the same time, the uncertainties associated with the pandemic may force rethinks about location of global supply chains, with implications for market power of, in particular, semi-skilled workers in a number of countries. The pandemic may also lead to changes in structures of economies, with attendant redundancy of skills for a section of the workers. These forces are likely to affect the limits of labor market flexibility, i.e., ($\underline{\lambda}$,$\overline{\lambda}$), and the slope of the $f_2(.)$ part of a government's payoff function which links the workers' share of the surplus to the aforementioned payoff. In particular, a plausible conjecture is that the changing political and economic environments may arrest, at least for the foreseeable future, a push for greater labor market flexibility, if the political cost of inequality outweighs the impact of the workers' loss of market power on ($\underline{\lambda}$,$\overline{\lambda}$). An analysis along these lines may, however, may require assumptions about specific functional forms and use of simulations.

6. Conclusion

Labor market institutions have been much discussed in the literature, most often in the context of their impact on outcomes such as unemployment, wage growth and inequality. There is, however, a smaller literature on the determinants of labor market institutions and some of it has political economy attributes. This political economy literature dwells significantly the interaction between insiders who are employed in the formal sector and can, therefore, extract rents if labor market institutions are rigid, and outsiders who are either unemployed or are employed in the informal sector. It also dwells on the impact of secular trends such as globalisation and the demand for protection against the resultant income shocks on these institutions. The prior in the latter literature is that globalisation increases the bargaining power of owners of capital vis-à-vis workers and this may lead to greater flexibility of labor market institutions as countries compete for capital. The empirical evidence in support of this proposition is, however, mixed.

This paper extends this literature by proposing a framework in which owners of capital have to decide where to locate their production centres and they, as well as the workers in a given context, attempt to influence the government's choice of the quality of rule of law and labor market flexibility, both of which affect the size and their relative shares of the surplus generated by the production process. The framework posits that, under the reasonable assumption that owners of capital are more likely to be able to influence the choice of these institutions, labor market flexibility is likely to be higher both when a country has a comparative advantage in production of goods that are labor market institution intensive and also when it has comparative advantage in production of rule of law intensive goods. This is borne out by the empirical analysis involving use of cross-country data. The discussion in the paper proposes plausible future use of the heuristic framework as well as ways in which the empirical analysis can be extended.

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