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Labour Market Reforms in Brazil (2017-2021): An Analysis of the Effects of Recent Flexibilization on Labor Market Legislation

Summary: The main objective of this work is to analyze the effects of Brazilian Labor Market Reform (BLMR) in the short run and, based on identified changes in the economy in recent decades, to verify how these changes have affected the labor market. Four methods were used in a complementary way: (i) employment quality index; (ii) panel data estimation method; (iii) synthetic control method and (iv) microdata analysis. We observed that there was no considerable increase in the quality of employment and formal employment and the rate of unemployment did not decrease after the implementation of these changes. Part of this dynamic is cyclical and related to exogenous shocks, such as the COVID pandemic on the Brazilian economy. Finally, according to econometric analysis, the rate of unemployment in Brazil is more responsive to investment rates and the business environment than to unit labor cost and changes in labor legislation.

Keywords: Labor market reforms, Dual labor market, Employment quality.

JEL: J2, J24, J4, J46, J5, J53.

In 2017 a series of amendments to Brazilian Labor Legislation were approved in Brazil, the so-called "Consolidação das Leis do Trabalho" (CLT), regulating temporary work and the Insurance Severance Guarantee Fund for workers. A series of changes to collective negotiations, non-compulsory union dues, economic groups, liability of the departing shareholder, remote work, intermittent work, working hours, labor proceedings and arbitration were made. At the time, the generation of between two million (in the short run) and ten million formal jobs (in the long run) was expected by policy makers.

The main objective of the present article is to analyze the effects of these changes on Brazilian labor market legislation (BLMR) or "Employment Protection Legislation" (EPL) on the unemployment rate in the short run and, based on identified

changes in the Brazilian economy over recent decades, examine how these changes have affected the quality of employment and the occupational structure of jobs over time (mainly after the Reform) according to the data available at the time of this research. Although is still too early to make definitive conclusions about the success/failure of these changes in legislation, there are aspects related to the quality of employment as well as the kind of jobs created that highlight important issues concerning the Brazilian labor market.

The paper is divided into 6 sections, including the introduction. The first section presents a discussion of the structural features of the Brazilian Labour Market. This discussion is followed in the second section by the presentation of the changes to Brazilian Employment Protection Legislation in 2017 and their effects on the Quality of Employment. The third section presents a panel data analysis for developing economies to analyse if labour market regulation (among other variables) influences the unemployment rate and a synthetic control method to analyse whether BLMR has affected the unemployment rate. The fourth section presents a statistical investigation of the Brazilian labour market and if and how the changes in CLT has affected the rate of unemployed. In the last section, final considerations are made.

1. The Puzzle of the Brazilian Labor Market: A Middle-Income Economy with a Huge Subsistence Sector

An association between labour legislation and a drop in the rate of unemployment has been found present in most of the economic policy assessments of institutions such as the IMF (International Monetary Fund), the World Bank and the Organization for Economic Cooperation and Development (OECD). In general, these assessments emphasize the importance of the removal of labour market rigidities, considered the source of levels of unemployment. Organisation for Economic Cooperation and Development (OECD 1994) Jobs Study presents a series of benefits of labour market liberalization. Basically, it is argued that the roots of unemployment rest in social institutions and policies, such as unions, unemployment benefits, and employment protection legislation. From this perspective, the main target of reforms should be tackling the rigidities created by legislation.
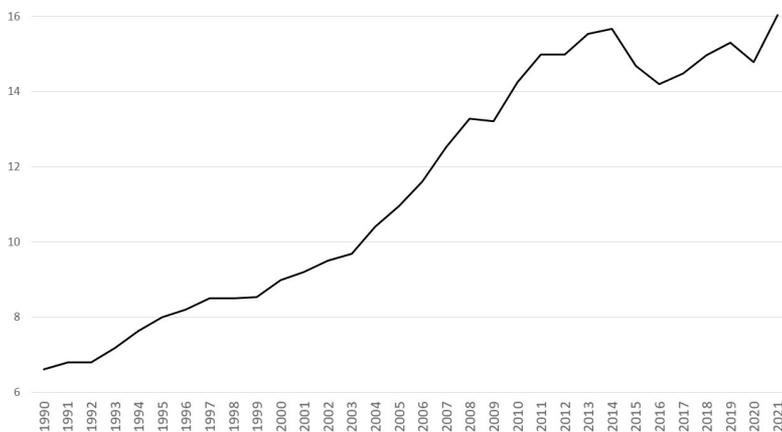
More recent studies, however, such as that carried out by Jesús Ferreiro and Carmen Gómez (2021) have shown that more flexible labour market legislation is not associated with lower unemployment rates. Indeed, these authors studied Employment Protection Legislation (EPL) in a sample of 21 European Union Countries from 2008 to 2012 and found that economic growth is the only statistically significant variable that affects employment growth and concluded that "A higher or lower labour flexibility is not associated with a better or worse employment performance, and the reforms approved to reduce the employment protection for permanent and temporary workers did not have a significant impact on employment" (Ferreiro and Gómez 2021, p. 14). Returning to the Brazilian case, according to Davide Carbonai (2019), Law no. 13,467 modifies more than a hundred clauses in the Consolidation of Labour Law (CLT), providing a new legal environment that reappraises collective negotiation (i.e., Articles 444 and 510-A), deregulates the labour market (i.e. Articles 443 and 614), and modifies the trade union funding system (i.e. Articles 545 and 883), thus representing a significant and substantial novelty in the Brazilian labour relations system.

Despite its huge economic growth during the period between 1930 and 1980, Brazil was unable to surpass the so-called "Lewis point" (William Arthur Lewis 1954), the point at which all the labor force is occupied in the modern or capitalist sector of the economy. Indeed, as shown in Table 1 below, almost 50% of the Brazilian labor force in the first quarter of 2022 was employed in the informal sector of the economy or self-employed.

Table 1 Structure of Employment in Brazilian Labor Market (2022, Q1)

Labor force	107316	100
Working people	96515	89.94%
Unemployment	10801	10.06%
Formal employment	35247	36.52%
Informal employment	25546	26.47%
Self-employed	12474	12.92%
Public sector employee	11483	11.90%
Informal housekeeper	4360	4.52%
Employer	4118	4.27%
Formal housekeeper	1410	1.46%
Employment modern sector	52258	54.14%
Employment subsistence sector	42380	43.91%
Employment subsistence sector + unemployment (share of labor force)	53181	49.56%

Source: Authors' own calculations based on IPEADATA (2022)[1].

Source: World Bank (2022a)[2].

Figure 1 Evolution of Brazilian GDP per capita (PPP) from 1990 to 2020

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[1] **IPEADATA.** 2022. Labor Market - Time Series Open Data - National Accounts. http://ipe-adata.gov.br/Default.aspx (accessed May 06, 2022).
[2] **World Bank.** 2022a. World Development Indicators. https://data.worldbank.org/ (accessed February 15, 2022).

The structure of the Brazilian labor market seems to be incompatible with the status of the middle-income economy that Brazil has according to a GDP *per capita* measured in PPP of almost US$ 16.000 according to the World Bank Indicators Data Base, see Figure 1.

The combination of a middle-income economy with a labor market with such a primitive structure is probably the most notorious contradiction of the Brazilian economy. To understand the historical background to this phenomenon, the writings of the most famous Brazilian economist, Celso Furtado, can be very useful. Celso Furtado (1961) argued that economic development in underdeveloped regions like Brazil did not occur in the same way as described by Lewis (1954). In the Lewis model, there are only two sectors: the modern (industrial) sector and the subsistence or traditional sector. Capital accumulation in the modern sector increases demand for labor which is met by the transfer of workers from the subsistence sector. During this phase there are few incentives for entrepreneurs to introduce labor saving technologies and the growth rate of employment in the modern sector can be extremely high. Eventually all the labor force is transferred from the subsistence sector to the modern sector and therefore the labor supply becomes inelastic. Here the economy has reached the "Lewis point". The continuation of the process of capital accumulation requires the introduction of labor-saving technologies to avoid increases in real wages to squeeze the profits of capitalists. This means that productivity gains will be appropriated by workers in the form of higher wages.
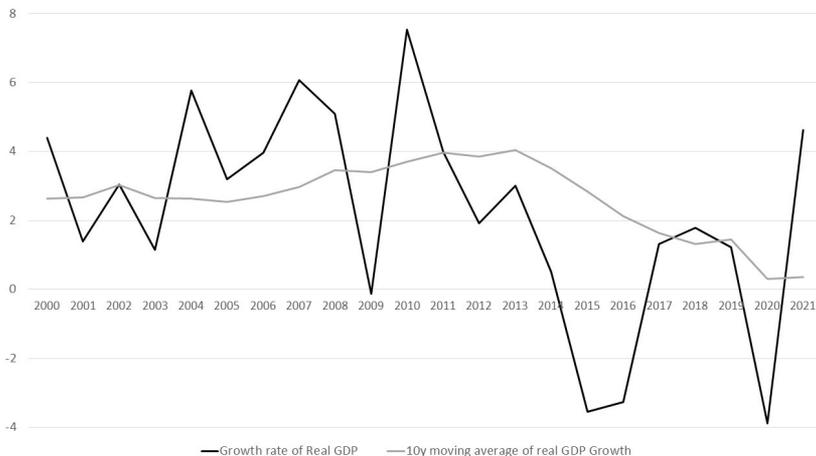
The above-mentioned process does not occur in the case of underdeveloped economic structures (such as in Brazil), according to Furtado (1961). In a three sectors economy, with one, basically of subsistence; another, mainly focused on exports and the third, an industrial core linked to the internal market, diversified enough to produce some of the capital goods it needs for its own growth. In this context, the main concern of the local industry owners is to present an article similar to the imported one and adopt production methods that enable it to compete with the foreign producer. Therefore, the result of this is that the contingent of the population affected by economic development remains small, reducing very slowly the relative importance of the sector whose activity is production for subsistence. Then, an economy where industrial production has already reached a high degree of diversification and has a participation in the product that is little different from that observed in developed countries presents a typically pre-capitalist occupational structure and that a large part of its population is away from the benefits of economic development (Furtado 1961, pp. 171-172).

Along the same lines, Anita Kon (2016, p. 261) argues that during the phase of Import Substitution Industrialization of Brazil many of the workers who left the subsistence sector in rural areas were not capable of finding a job in manufacturing and were forced to "self-create" occupations in the services sector with very low productivity levels. These jobs were not related to the process of capital accumulation and were dependent on opportunities created by the market to sell a good or a service in order to make an income. As a result, *in the Brazilian case the informal sector was historically created to be an alternative to unemployment*, characterizing what Joan Robinson (1937) called "disguised unemployment".

The deceleration of growth observed in Brazil after 1980 and the economic stagnation of the Brazilian economy since 2013 have reduced the employment growth rate in the formal or modern sector of the economy and increased the share of informal workers in the Brazilian labour market. This explains the current situation of almost 50% of the Brazilian labour force being in the informal or subsistence sector (see Table 1).

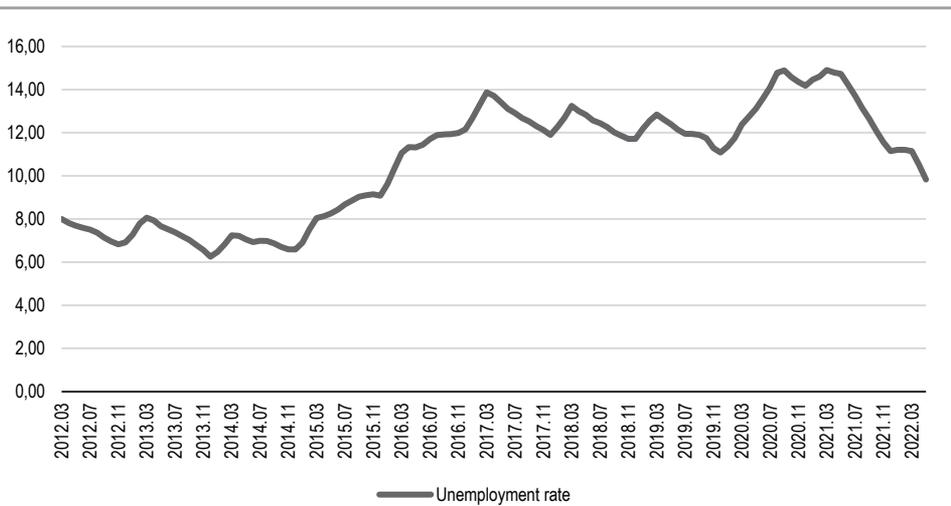## 2. The 2017 Reform of Employment Protection Legislation in Brazil

After a growth acceleration during the period of 2003-2013 (see Figure 2), Brazil entered the worst recession in modern history in the second semester of 2014. In 2015 Brazilian real GDP growth was -3.54% and real GDP growth in 2016 was -3.27%. The accumulated fall in GDP in the period 2015-2016 was almost 7%.

Source: Authors' own calculations based on IPEADATA (2022).

Figure 2 Real GDP Growth Rate and 10y Moving Average of Real GDP Growth of Brazil (2000-2021)

The great recession of 2014-2015 and the low growth of GDP that followed it had a profound impact on the Brazilian unemployment rate. As Figure 3 below clearly shows, the average unemployment rate rose from about 7% of the work force to almost 12% before the covid-19 pandemic. After the implementation of an extraordinary fiscal and monetary policy expansion in 2020 and the progress in vaccination of the Brazilian population during 2021, the unemployment rate started to fall in 2021 but it remained at close to 10% in the first semester of 2022.

Figure 3 Evolution of Monthly Unemployment Rate in Brazil (2012.03-2022.05)

This great recession has also had political effects (see José Luis Oreiro 2017). The rise in unemployment and inflation in 2015 set the pace for the impeachment of President Dilma Rouseff in April 2016, opening the way for the vice-president, Michel Temer, to become president. Temer made a radical change in the orientation of Brazilian economic policy, moving away from the so-called "social-developmentalism"[3] of Dilma Rouseff's administration to a neo-liberal agenda based on a document called "Bridge to the Future" ("Ponte para o Futuro") elaborated by the mainstream economists of Brazil such as Samuel Pessoa, Marcos Lisboa and José Márcio Camargo. The neo-liberal agenda of President Temer stated that a set of *economic reforms* were necessary for Brazil to resume economic growth and reduce the unemployment rate. One of these reforms was the reform of the Employment Protection Legislation which was the CLT.

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[3] In Brazil there are two strands of the so-called developmentalist thought. The first one is the new-developmentalism understood as a set of proposals for institutional reforms and economic policies, whereby the middle-income developing countries seek to achieve the *per capita* income level of developed countries. This catching-up strategy is explicitly based on the adoption of an export-led growth regime, in which the promotion of exports of manufactured goods induces the acceleration of the pace of capital accumulation and the introduction of technological progress and structural change. In order to do that the real exchange rate must be kept at a competitive level in the medium to long-term, which requires the design of a macro-economic policy regime which neutralizes the chronic overvaluation of real exchange rate observed in these countries as a result of the combined effects of the Dutch disease and inflows of foreign capital due to the adoption of an external saving growth strategy. These ideas begin to be developed by Luiz Carlos Bresser-Pereira (2006, 2007, 2009) and took a more consistent form with Nelson Marconi, Oreiro, and Bresser-Pereira (2015). Social developmentalism is closer to the classic developmentalist approach, continuing to focus on the shortage of domestic demand to push investment into productive diversification, but it gives the aim of equal income distribution a more prominent role and stresses increasing domestic mass consumption to drive economic growth and increase production (Daniela Magalhães Prates, Barbara Fritz, and Luiz Fernando de Paula 2020).

The Brazilian Labour Reform was approved in 2017 by the law 13.467/17 (L13467 (planalto.gov.br)) on July 13, 2017. This new law made several changes, altering a series of labour rights. The main changes will be presented below and then we shall discuss these effects on workers and how this reform failed to change the quality of Brazilian employment.

In a quantitative analysis, the new law created 43 new articles, another 54 were reformulated and 9 were revoked from the CLT.

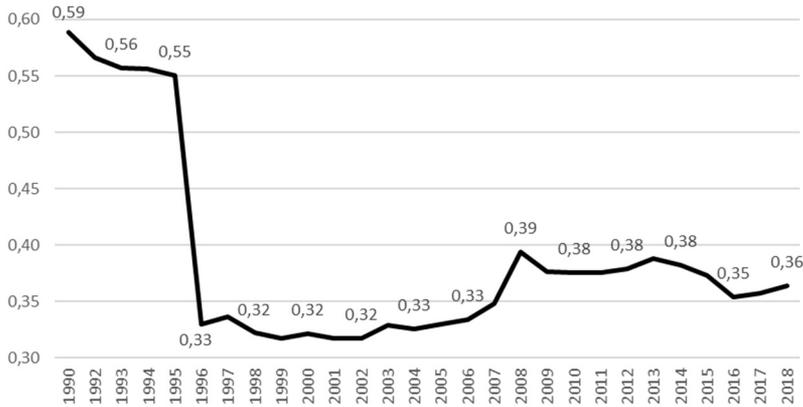Some of the main changes can be seen in Table 2 below.

Table 2   Changes in the Employment Protection Legislation in the 2017 Labour Market Reform

	Changes in employment protection legislation in the 2017 labour market reform	
	Before	**After**
Time at disposal of the employer	Period waiting for or carrying out work activities on company premises.	Any personal activity of the worker or social interaction, such as leisure and social relationships, should not be understood as a provision to the employer. At the disposal of the employer will only be considered when the employee is carrying out his/her core activity.
Bank of hours	Overtime compensation for time off should be negotiated between unions and companies, through a collective agreement or agreement, with a period of up to 1 year.	Hours can be negotiated directly between employees and employers. The term of this negotiation is up to 6 months through the formal individual agreement.
Flexibility of hours worked (12 hours worked per 36 hours of paid rest)	Working hours were only allowed when provided for by law or a normative instrument resulting from collective bargaining.	The working hours can be established by means of a written individual agreement, collective agreement or collective bargaining agreement.
Breaks	Uninterrupted work lasting more than 6 continuous hours granted workers a break for a rest and/or meal of at least 1 hour.	This period must be at least 30 minutes. However, it must be included in the forecast in Collective Agreements and Collective Agreements. In cases of non-granting or partial granting, it will imply the payment of the suppressed period with a 50% increase in the hourly wage.
Vacation	The right may be exercised in two periods, provided that one of them is not less than ten consecutive days.	It must be granted in three periods, one of at least 14 consecutive days and the others of five consecutive days. In addition, the start of vacation cannot occur two days before holidays or on a day of paid rest.
Autonomous work	Not being considered an employee yet having to meet legal requirements. This worker is the one who performs a paid professional activity on his/her own, thus exploiting her/his workforce for his/her own benefit.	The self-employed worker ceases to have exclusivity in the service provision contract. The self-employed person may provide services of any nature to other service takers who exercise or not the same economic activity, under any type of employment contract, including as self-employed.
Intermittent work	It was not foreseen in the CLT.	Intermittent work is performed with subordination, is not continuous and has alternating periods of service and inactivity, regardless of the type of activity. In addition, remuneration is paid at the end of each service period.
Termination	Termination for employees hired for more than one year must be mandatorily carried out through the unions. If the worker is dismissed, he or she is not entitled to withdraw from the Severance Indemnity Fund (FGTS), unemployment insurance, or receive a fine of 40% on FGTS deposits. Benefits and indemnities were only received by the employee in case of dismissal without just cause.	Upon termination of the employment contract of the employee who has completed more than 1 year of service, there will be termination by agreement, with a 20% reduction in the fine paid by the employer on the FGTS balance, allowing the employee to withdraw 80% of the deposits from the FGTS account, as well as unemployment insurance.
Union Contribution	Mandatory contribution withdrawn from the payroll.	Optional contribution.

Note: Authors' own construction.

The BLMR Labor Reform generated a massive reduction in the salary mass (as GDP share), due to its effect of generating precarious formal jobs and a general increase in the informal sector of the Brazilian labor market. Furthermore, it weakened the last barrier of worker protection by reducing the activities of unions in collective agreements.

In Figure 4, we can observe a decline in Brazilian Employment Quality Index (Oreiro et al. 2022)[4] between the years 1995-96, which has not recovered since. The quality of the Brazilian labor structure is very close to 36%, that is, there are more employees in low and medium technology-intensive sectors.

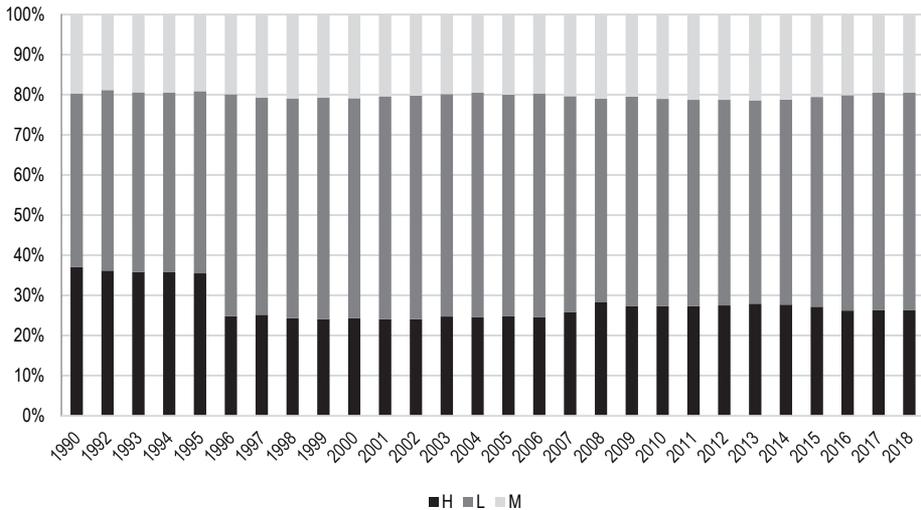Source: Authors' own constructions based on UNIDO Statistics Data Portal (2022)[5].

Figure 4 Employment Quality Index in Brazil - 1990-2018[6]

In Figure 5, the dynamics of the labor market are shown quite clearly, with an increase in low technological intensity jobs in relation to the others, which justifies the huge drop in the quality of employment in Brazilian manufacturing industry. This effect was due to the necessary increase in industrial productivity, after the 1994 inflationary crisis, with the incorporation of machines and equipment in production lines, observed mainly in sectors of greater technological intensity.

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[4] Employment Quality Index (*EQI*) is defined as the ratio between the share of jobs in the high, medium high and medium technological intensity sectors relative to the sum of the share of jobs in the low and low technological intensity sectors of each country. For details see Oreiro et al. (2022).

[5] **UNIDO - Statistics Data Portal.** 2022. Industry Employees by Sectors - ISIC 2 Rev. https://stat.unido.org/database/INDSTAT%202%202020,%20ISIC%20Revision%203 (accessed January 12, 2022).

[6] The upper limit of the original base is the year 2018.

Figure 5 Share of Employment in Brazilian Manufacturing Industry by Technological Intensity (1990-2018)

3. Unemployment Rate and Changes in Employment Protection Legislation: A Panel Data Investigation

Labor market regulations are essential for its correct functioning and workers' wellbeing. They may correct market imperfections, support social cohesion, and encourage economic efficiency through productivity growth. Evidence from global studies shows that labor market regulations can have an impact on a number of economic outcomes, such as aggregate job flows and the speed of adjustment to shocks.

To analyze if Employment Protection Legislation affects the rate of unemployment, the following panel econometric model for 101 developing economies was tested (see Appendix):

$$unem_{ct} = \alpha + \beta_1 sb_{ct} + \beta_2 prights_{ct} + \beta_3 lreg_{ct} + \beta_4 lenf_{ct} + \\ + \sum_{J=5}^{K} \beta_j Z_{i,tj} + \mu_t + c_i + \varepsilon_{it}, \tag{1}$$

where $i = 1, \dots, N, t = 1, \dots, T, j = 1, \dots, K$. β's are the parameters to be estimated for each group of independent variables, explained below. The variable $unem_{ct}$ represents the unemployment rate from the i countries in the time span; sb_{ct} represents the indicator starting a business score; $prights_{ct}$ represents the protection of property rights; $lreg_{ct}$ represents the employment protection legislation of each country; $lenf_{ct}$ represents the legal enforcement of contracts; $Z_{i,tj}$ are the control variables, described below; μ_t is the specific effect of time; c_i captures the unobserved effects of each country i that are time invariant and ε_{it} is the idiosyncratic error term.

The first variable sb_{ct} is an indicator, ranging from 0 to 100, and measures the amount of time and cost of opening a new business in a given nation. Countries that require more time and/or greater capital investments receive lower scores. The variable is constructed based on five different indicators from the World Bank, the first measures the number of procedures required to open a new business, the second the time, measured in days, and the third the monetary costs involved in opening. The fourth indicator measures reforms in legislation related to the opening of new businesses and the last one measures the cost of the minimum wage in the country.

The variable $prights_{ct}$ is an indicator that measures, on a scale from 0 to 10, the quality of laws and the institutions that protect and ensure property rights in a given country, where the higher the score, the greater the protective quality of laws and institutions.

The variable $lreg_{ct}$ is a constructed variable based on five other variables and indicators: (i) hiring regulations and minimum wage; (ii) hiring and firing regulations; (iii) centralized collective bargaining; (iv) working hours regulations; (v) mandated cost of worker dismissal and (vi) conscription.

Table 3 Description of the Variables Used in the Models, Measures, and Sources

Abbreviations	Brief variable description	Source
sb	Measures the amount of time and cost of opening a new business.	Doing Business 2020 (World Bank 2022b)[7]
prights	Measures the quality of laws and the institutions that protect and ensure property rights.	Economic Freedom of the World - EFW (Fraser Institute 2022)[8]
lreg	Degree of flexibility of regulation of employment, specifically as it relates to the areas of hiring, working hours and redundancy.	Doing Business 2020 (World Bank 2022b)
lenf	Measure the time and associated costs to be able to collect a debt through the use of the judicial system.	Doing Business 2020 (World Bank 2022b)
govexps	Government consumption in terms of goods and services in relation to GDP in real terms.	WDI (World Bank 2022a)
inflation	Annual inflation rate (from the *Consumer Price Index* – CPI, for each country).	WDI (World Bank 2022a)
openness	Sum of exports and imports of goods and services measured as a share of GDP.	WDI (World Bank 2022a)
gcfshare	Gross fixed capital formation as a proportion of annual GDP.	WDI (World Bank 2022a)
gaptech	Technological gap between countries using Verspargen's (1993) methodology.	Author's own calcilations based on PWT 8.0

Notes: IMF - International Monetary Fund; WDI - World Development Indicators; PWT - Penn World Tables 8.0 (see Robert C. Feenstra, Robert Inklaar, and Marcel P. Timmer 2015); MIT - Massachusetts Institute of Technology; GGDC - Groningen Growth and Development Center.

Source: Authors' own calculations.

[7] **World Bank.** 2022b. Doing Business. https://archive.doingbusiness.org/pt/reports/global-reports/doing-business-2020 (accessed December 05, 2022).
[8] **Fraser Institute.** 2022. Economic Freedom Dataset - Indicators and Sub-Indicators. https://www.fraser-institute.org/economic-freedom/dataset?geozone=world&year=2020&page=dataset&min-year=2&max-year=0&filter=0 (accessed December 06, 2022).

The variable $lenf_{ct}$ is an indicator that ranges from 0 to 10 and measures the time and associated costs of recovering a debt through the law. It is based on the aggregation of two different subcomponents, the first is the time spent between the opening of the case until the moment of the variable payment of the debt and the second, the legal costs related to the case.

The control variables used to estimate Equation (1) are: (i) the share of government expenditure in relation to GDP (*govexps*); (ii) the average inflation rate (*infla*); the technological gap (*gaptech*), defined following the methodology used by Bart Verspagen (1993). In this case the technological leader is assumed to be the United States and its *per capita* GDP is a proxy for productivity; (iv) gross fixed capital formation as a share of annual GDP (*gcfshare*), as a proxy for aggregated investment; (v) degree of the economy openness (*openness*) in terms of GDP share, which explains how open an economy is in terms of international trade.

Table 3 presents a brief description of the variables of model (1) and its sources.

According to the Hausman's Test, fixed effects is the fittest panel data model for Equation (1). However, to control for heteroscedasticity and autocorrelation we used John C. Driscoll and Aart C. Kraay (1998)'s estimators.

Table 4 presents the estimates based on Driscoll-Kraay (1998) standard errors. Driscoll and Kraay (1998) developed a nonparametric covariance matrix estimator that produces heteroskedasticity- and autocorrelation-consistent standard errors that are robust to general forms of spatial and temporal dependence in a panel data (Daniel Hoechle 2007).

Table 4   Estimates for Developing Economies -2001-2020

	(1) Unem	(2) Unem	(3) Unem	(4) Unem	(5) Unem	(6) Unem
Sb	-0.0277**	-0.0360***	-0.0356***	-0.0380***	-0.0394***	-0.0442***
	(-3.49)	(-5.57)	(-6.31)	(-6.29)	(-7.19)	(-7.70)
Lenf	0.929***	1.001***	1.140***	1.039***	1.024***	1.045***
	(4.54)	(4.54)	(5.31)	(6.07)	(6.33)	(6.57)
Lreg	0.000408	0.0765	0.00631	0.0513	0.0693	0.0527
	(0.00)	(0.66)	(0.06)	(0.51)	(0.69)	(0.50)
Prights	-0.251*	-0.171	-0.196	-0.227*	-0.240*	-0.254*
	(-2.85)	(-1.60)	(-1.72)	(-2.33)	(-2.90)	(-2.93)
gcfshare		-0.143***	-0.149***	-0.155***	-0.151***	-0.153***
		(-8.72)	(-10.42)	(-10.51)	(-11.75)	(-11.32)
Infla			0.0365***	0.0447**	0.0457**	0.0477***
			(4.38)	(3.91)	(4.01)	(4.11)
Govexp				0.170*	0.170*	0.177*
				(2.18)	(2.21)	(2.30)
openness					-0.00830	-0.00879
					(-1.51)	(-1.56)
Techgap						-0.0441**
						(-3.80)
_cons	7.273**	10.33***	10.22***	8.433**	9.217***	10.49***
	(3.22)	(4.81)	(7.08)	(3.81)	(5.50)	(6.50)
N	995	959	929	922	921	917

Notes: *t* statistics in parentheses * $p < .05$, ** $p < .01$, *** $p < .001$.

Source: Authors' calculations.

All variables had the expected signs. When incorporating the variables one by one, there was no change in the sign of the analyzed coefficients.

Broadly, Table 4's econometric results suggest that for developing economies, the unemployment rate (*unem*) is more responsive to investment rates (*gcfshare*) and expansionary policies that may affect inflation rates (*infla*) as well as institutional variables that capture that the quality of economic environment and influence business (i.e., *sb*, *lenf* and *prights*). Moreover, for this group of countries, labor market regulations do not affect unemployment rates.

The greatest effect observed in Table 4 corresponds to the length of time and associated costs required to collect a debt through the use of the judicial system (*lenf*). In addition, its impact increased as the other variables were included in the econometric exercise. The longer the time required to recuperate debts, the greater the unemployment in developing economies. This time and the costs generate a reduction in the working capital of companies, impacting the employment rate.

The shorter the time and cost of opening a new business (*sb*), the lower the unemployment rate will be. Even if the ease of opening a new business stimulates the job market, reducing unemployment, it does not sustain it, thus justifying the low coefficient.

The degree of the flexibility of Employment Protection Legislation (*lreg*) and openness were not significant in any of the econometric specifications.

The inflationary effect (*infla*) generates a reduction in demand for goods and services, reducing the domestic demand in economies. Again, it is noted that the productive factor equivalent to labor will fall in the short term to compensate for the drop in economic activity. This effect is even greater in economies where the degree of informality is high, such as in Brazil.
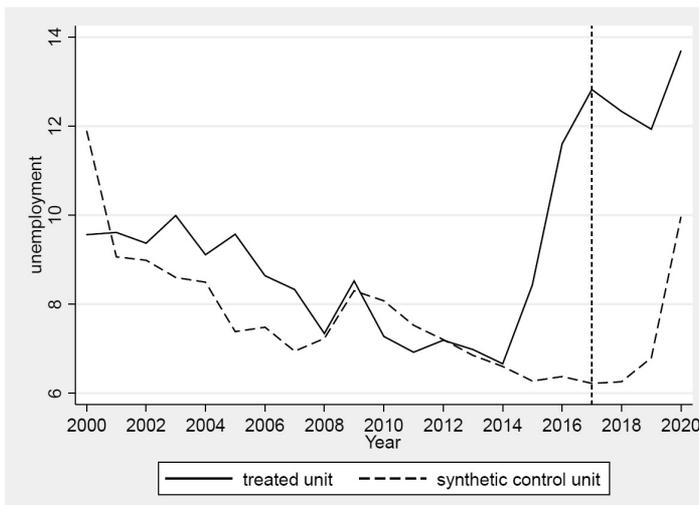
Government consumption (*govexp*) generates a crowding out effect, in which there is an increase in the interest rate due to the need to finance an increase in aggregate demand pulled by government expenditure. This increase in the interest rate decreased private investment and consumption. Thus, an increase in government spending will increase unemployment.

The greater the proxy for technological gap (*techgap*) between countries, the wider the dependence of labour on production. This occurs especially in developing countries where most sectors are not at the technological frontier and are constantly absorbing low skilled workers, i.e., in developing economies with few advanced sectors and lower levels of human capital indexes.

For the Brazilian time series, there is insufficient data to provide robust econometric results due to the small sample size and discontinuity of some important series. In order to therefore overcome the use of time series analysis for Brazil, we implemented the synthetic control method for causal inference in comparative case studies. In this case the effect of an intervention of interest can be estimated, such as the BLMR, and compared with the evolution of the same aggregate in a synthetic control group. This control group is a weighted combination of units (in our case, a panel of countries) chosen to approximate the unit affected by the intervention (Brazil) in terms of outcome predictors. The outcome variable (unemployment rate) for each estimated synthetic control group is the counterfactual of what would have been observed for the

affected unit in the absence of the intervention of interest. See Alberto Abadie and Javier Gardeazabal (2003) and Abadie, Alexis Diamond, and Jens Hainmueller (2010, 2014) for more details.

For the construction of the control group, the following variables (predictors) were considered: (i) level of economic complexity (ECI); (ii) investment rate as a % of GDP; (iii) the inflation rate; (iv) real GDP growth. The application of the method requires a balanced panel, in which, for the period from 2000 to 2020, the best possible matching occurred, initially, for the baseline control group composed of the following emerging economies: Bolivia, Chile, Colombia, Ecuador, Mexico, Paraguay and Peru[9].

Notes: Unit weights are Colombia (0.507), Ecuador (0.087), Mexico (0.406).

Source: Authors' own calculations.

Figure 6 Synthetic Control for Brazil - 2000-2020

In Figure 6, the intervention year is 2017. Before 2014, both the treated and synthetic control unit presents a similar trajectory. Notwithstanding, there is a great discrepancy after 2014 because economic growth, the investment rate and economic complexity fell sharply in Brazil. Between 2014 and 2017 the rate of unemployment increased in the treated unit (Brazil) while in the synthetic control unit it decreased ("synthetic Brazil"). Concerning the synthetic control unit, the unemployment rate just rose after 2018 and increased more sharply around the COVID outbreak in China (i.e., from 2018 onwards).

After BLMR the fall in the unemployment rate in Brazil in 2018 and 2019 was significant and not predicted by the control group. On the other hand, in the treated and control unit the unemployment rate increased afterwards.

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[9] These countries presented relatively stable "lreg" and "lenf" when compared to Brazil. Both variables are proxies for the labor market regulation/flexibility degree. See Table III for more details about them.

Table 5 presents the difference in the unemployment rate for Brazil and the synthetic control unit. In this case the "synthetic Brazil" (counterfactual) was weighted by the control group. The two years considered are right after intervention (BLMR) and before the worldwide COVID pandemic, when Brazil implemented an emergency aid program consisting of income transfers. The comparison for the period after the reform suggests a decrease in the unemployment rate between 2018 and 2019 and an increase in the same variable in the control group. Using these estimates, the absence of BLMR could explain the at most 1.46 p.p. higher unemployment rate in the time span considered.

Table 5 Difference between the Unemployment Rate for Brazil and the Synthetic Group for Brazil

Groups	2018	2019	Total
Brazil (treated unit)	-0.49	-0.4	**-0.89**
Synthetic control unit (counterfactual)	0.037869867	0.536510143	**0.57438001**
Difference	-0.527869867	-0.936510143	**-1.46438001**

Source: Authors' own calculations.

In order to check the robustness of this result a placebo test technique is suggested by Abadie and Gardeazabal (2003) and Abadie, Diamond, and Hainmueller (2010, 2014). This may increase the reliability of the results. This technique consists of applying the same method to a country in which there were no similar labor reforms in the synthetic control unit, i.e., the country with the highest weight. Therefore, the same exercise (for now, excluding Brazil) was made for Colombia, as a placebo, and the result (difference) was +1.472 p.p. The results suggest that the placebo presented a great difference (with the opposite sign) between the treated unit (Colombia) and its counterfactual[10], i.e., we cannot conclude that BLMR affects its unemployment rate independent of other factors.

As discussed above, the evidence provided by the synthetic control is not conclusive about its isolated effect on the decrease in the unemployment rate in Brazil. According to microdata (PNADC), after BLMR the recovery in labor market was mainly associated to the private informal sector, such as domestic workers, and self-employed workers. In other words, the recovery in the labor market occurred in sectors where the reform could not explain its dynamic alone. This case is better discussed in the next section.

The results presented above are in line with Lucio Baccaro and Diego Rei (2007), Servaas Storm and C. W. M. Naastepad (2012), Sabina Avdagic and Paola Salardi (2013) and Avdagic (2015), using different datasets and methods, which found no compelling evidence on the revealed benefits of flexibilization of Employment Protection Legislation, as in Ferreiro and Gómez (2021) for the EU countries. Furthermore, there is other research that addresses the effects of labor market reforms, with negative consequences, particularly in terms of increased wage inequality, reduced job quality, increased job insecurity and decreased autonomy and well-being of the worker (see Giorgio Liotti 2020; Rosaria Rita Canale, Liotti, and Marco Musella 2022)[11].

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[10] Weighted units: Ecuador (0.217) México (0.255) and Peru (0.529). The same predictors were used.

[11] Canale, Liotti, and Musella (2022) examined the impact of labor market reforms on wage inequality and, in a complementary way, investigated the effect of the reform on job quality for Italy. The main findings were the increase in wage inequality, particularly for workers at the lower end of the wage distribution,

Unlike these works, the results of this section suggest that institutional variables and the aggregated investment proxy are more important than labor regulation in influencing the unemployment rate, particularly in Brazil.

4. Unemployment Rate and the Brazilian Labor Market: A Case for Flexibilization of Employment Protection Legislation?

There are several limitations to analyzing econometrically (in macroeconomic terms) the isolated effects of Brazilian Labor Market Reform (BLMR), such as: (i) some of the effects verified can be cyclical, which imposes further difficulties in analyzing short-term time series and microdata; (ii) the reform is still recent and labor market changes can be slow and differ among economic activities; (iii) some time series are not homogenous due to discontinuity or methodological changes, which affects econometric robustness; and (iv) there are several exogenous effects on the labor market such as COVID lockdowns and other related national policies, which make it difficult to isolate the effects of BLMR. Therefore, it is necessary to shed light on the macrodata (see last section) and microdata available and make some inferences. The main microdata source is PNADC from IBGE.

Table 6 presents a correlation matrix with the most relevant macrodata variables used in the last section just for Brazil (highlighted in grey are the statistically significant, at least 5% level). Additionally, we tested unit labor cost (ULC) and its relationship to other variables.[12] In aggregate terms, the variables tested in the last section that most impact the Brazilian unemployment rate are: investment rate (*gcfshare*), legal enforcement of contracts (*lenf*) and starting a business score (*sb*). However, the two last variables did not have the expected sign. This may mean that a better *sb* can increase micro entrepreneurship and firms that absorb fewer workers in aggregated terms, in general.

The negative relationship between *lenf* and *unem* suggests that litigation in the judicial system depends on whether workers have the resources based on their wages that can secure a way of living throughout the court case. So, if workers in general are unemployed *lenf* impacts decreases. Further investigations are needed into these issues.

In aggregated terms there is no statistically significant correlation between *unem* and *ulc*. However, Table 6 presents a positive association among *ulc, gcfshare* and *prights* (as expected).
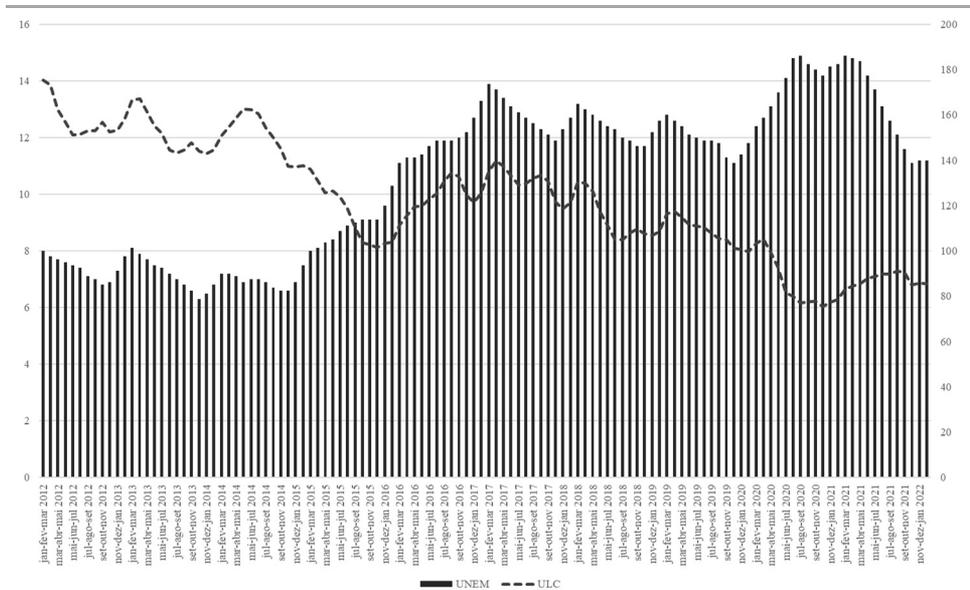
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decline in job quality, especially when looking at the terms of job stability, wages and benefits. Liotti (2020) examines the impact of labor market reforms on job insecurity, autonomy, and worker well-being in Italy. The author considers that the reforms increased job insecurity and reduced workers' subjective well-being. In addition, studies suggest a decrease in worker autonomy and an increase in stress and dissatisfaction among workers. Both studies warn that labor market reforms can have negative consequences, particularly in terms of increased wage inequality, reduced job quality, increased job insecurity, and decreased worker autonomy and well-being.

[12] ULC = (FS/PFI) x (1/TxCbN); where ULC represents Unit Labor Cost, FS is the nominal salary payroll index (IBGE-PIMES until 2015 and CNI-Payroll in real value from 2016, PFI is the industrial physical production index (IBGE - PIM-PF) and TxCbN represents the nominal selling exchange rate (end of period). This variable is calculated by the Brazilian Central Bank. It is worth mentioning that social charges, social security, among other costs are not taken into consideration in ULC.

Table 6 Correlation Matrix 2000-2019 for Brazil

Correlation	Ulc	Unem
ulc	1.000000	
unem	-0.381635	1.000000
sb	0.232733	0.697642
Gcfshare	0.454827	-0.935612
prights	0.527559	-0.285271
lenf	-0.413445	-0.593241
lreg	0.125993	-0.035191
Prob. Value	Ulc	Unem
ulc	-----	
unem	0.0968	-----
Sb	0.3234	0.0006
Gcfshare	0.0439	0.0000
prights	0.0168	0.2228
lenf	0.0700	0.0058
lreg	0.5966	0.8829

Source: Authors' own calculations.

Source: Authors' own calculations based on PNADC (2022)[13] and Brazilian Central Bank (2022)[14].

Figure 7 Unemployment Rate and ULC in Brazil - 2012-2022

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[13] **Pesquisa Nacional por Amostra de Domicílios Contínua (PNADC).** 2022. Unemployment Rate. https://www.ibge.gov.br/estatisticas/sociais/trabalho/9171-pesquisa-nacional-por-amostra-de-domicilios-continua-mensal.html (accessed February 01, 2022).
[14] **Brazilian Central Bank (BACEN).** 2022. Unit Labor Cost. https://www3.bcb.gov.br/sgspub/localizararseries/localizarSeries.do?method=prepararTelaLocalizarSeries (accessed January 15, 2022).

Figure 7 presents a longer series related to the unemployed rate and unit labor cost (ULC). It can be observed that ULC decrease over the analyzed period. Specifically, from 2020 to the latest data available the two series run in opposite directions most of the time. For the longer series of *unem* and *ulc* the correlation is -0.76, and it is statistically significant. As there were no changes in the Brazilian labor market before 2017, it is expected that changes in *unem* affects *ulc,* not the opposite.

Taking into consideration the period before COVID reached Brazil at the beginning of 2020 and the changed domestic polices in terms of economic activities due to the pandemic as well as one year before BLMR – that is the period between 2016 and 2019 – we can see in Figure 8 that the general level of unemployment rose 7.5%, registered employment fell by 2.8%, unregistered employment rose almost by 15% and self-employment rose by more than 8%. Therefore, the short-term positive effect of the labor reform on unemployment rates was not identified.
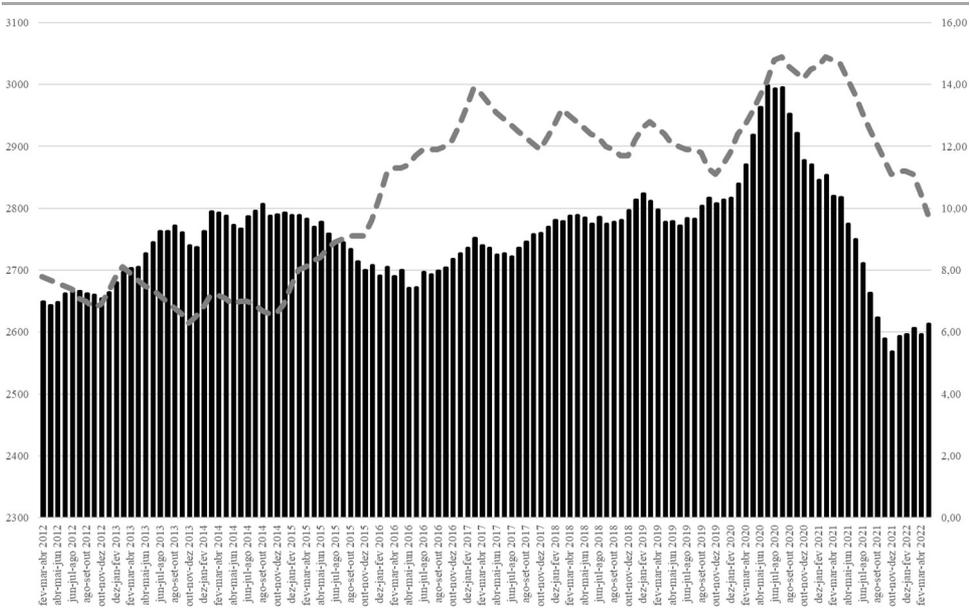

Source: Authors' own calculations based on PNADC (2022).

Figure 8 Short Term Variation in Labor Market - in Millions - 2016 and 2019

Certainly, after 2020 there were mixed effects of the Brazilian Labor Market Reform (BLMR), COVID related policies and the Russia-Ukraine war and its knock-on effect on global value chains and inflation that influenced the dynamics of the labor market. Therefore, longer time series are better to analyze the behavior of labor market in Brazil. Figure 8 presents the average real income of the employed population and the unemployment rates from 2012 to 2022 (until first trimester, latest data available).

It can be observed in Figure 9 that in the period of March to May of 2022 unemployment reached 9.80% and the average real income R$ 2,613.00. The former variable is close to the rate verified before BLMR, in the period between November of 2016 and January of 2017. The latter variable recovered its past real value only in the last quarter of 2021, when it reached R$ 2,568.00.

The BLMR came into force 120 days after its publication, that is, on November 11, 2017. From 2018 to 2019 *there was no clear pattern of employment recovery*. However, there was a recovery of average real income of the employed population from 2018 until 2020, close to the last quarter. Afterwards, there was a sharp fall in average real income until the end of 2021. Moreover, the rate of unemployment started to fall in 2020 and more steadily after May-June-July of 2021.

Notes: Real income of employed population (R$ - bar, left axis) and unemployment rate (%, line, right axis) - both moving averages.

Source: Authors' own calculations based on PNADC (2022).

Figure 9 Average Real Income of the Employed Population and Unemployment Rate - 2012-2022

Table 7 presents the variation in the employed population broken down into sectors of activity, revealing the Brazilian employment structure. All variations greater than the overall average considering the period from second quarter of 2016 to first quarter of 2022 are highlighted in black[15]. All negative variations smaller than -1.52, i.e., the smallest fall in employment in second quarter of 2019 considering all sectors are highlighted in grey.

Considering these thresholds to highlight the data we can see that there are no clear patterns in the grouping activities variations before the fourth quarter of 2019. However, after this period there are two clear clusters of changes in the Brazilian labor market that deserve closer attention. The first cluster is negative and affects almost all sectors from the first quarter of 2020 to the third quarter of 2020. The second cluster is positive and affects all sectors in the fourth quarter of 2021 and almost all sectors from the first quarter of 2011 to the fourth quarter of 2021.

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[15] In Tables 7 and 8 we present just 2018.Q4-2022.Q1's data due to space limitations. However, calculations took in consideration the second quarter of 2016 to first quarter of 2022, as mentioned.

Table 7 Persons Aged 14 and over, Employed in the Period of Reference (∆ per quarter) - 2018.Q4-2022.Q1

Grouping activities in the main job - PNADC	4º T 2018	1º T 2019	2º T 2019	3º T 2019	4º T 2019	1º T 2020	2º T 2020	3º T 2020	4º T 2020	1º T 2021	2º T 2021	3º T 2021	4º T 2021	1º T 2022
Total	0,65	-0,98	1,66	0,61	0,82	-2,51	-9,73	-0,73	4,54	-0,16	2,64	4,02	2,98	-0,49
Agriculture, livestock, forestry production, fisheries and aquaculture	-3,22	0,22	3,03	-1,79	-1,76	-1,11	-3,41	3,69	3,11	0,38	3,60	2,35	-1,83	-1,55
Industry (all sectors)	-0,27	-0,92	2,83	0,57	1,12	-2,36	-8,68	-0,96	3,23	0,15	0,77	6,28	1,74	-0,73
Manufacturing industries (Section C - CNAE)	-0,75	-0,60	2,71	0,32	0,79	-2,17	-8,97	-0,24	4,38	-0,04	1,18	6,85	0,94	-0,82
Construction	0,84	-4,09	1,13	3,77	-0,55	-6,37	-16,01	9,11	5,74	0,64	5,25	7,26	3,35	-3,38
Sale, repair of motor vehicles and motorcycles	1,83	-1,11	-0,15	0,71	2,20	-3,42	-12,04	0,56	5,01	-1,13	1,60	7,48	3,37	-0,57
Transport, storage and mail	3,76	0,66	1,69	0,26	0,67	-0,62	-10,21	-4,29	3,59	2,20	3,19	3,07	1,21	2,56
Accommodation and food	0,46	1,08	0,04	1,20	3,30	-5,63	-25,14	-4,55	7,42	-3,94	10,44	10,99	5,18	2,75
Information, communication and financial, real estate, professional and administrative activities	2,26	1,16	0,42	0,69	-0,06	0,51	-5,78	-1,54	6,45	2,19	1,90	-0,36	3,32	-0,83
Public administration, defense, social security, education, human health and social services	0,47	-2,18	3,03	0,46	0,06	-0,19	0,60	-3,83	2,68	-0,67	0,86	-1,06	2,23	-0,19
Other services	0,82	-2,07	3,05	0,43	3,36	-4,39	-16,99	-2,97	5,95	-3,24	3,95	1,97	11,84	0,83
Domestic services	-0,25	-1,83	2,79	0,82	0,53	-6,07	-21,88	-2,13	6,06	0,44	4,57	8,92	6,42	-1,49
Not definied activities	-2,4	51,2	-41,9	-58,3	40,0	4,8	-22,7	-23,5	153,8	39,4	45,7	-19,4	-38,9	51,5
Average (for each period)	**0,32**	**3,12**	**-1,52**	**-3,87**	**3,88**	**-2,27**	**-12,38**	**-2,42**	**16,31**	**2,79**	**6,59**	**2,95**	**0,14**	**3,66**

Source: Authors' own calculations based on PNADC (2022).

Table 8 Persons Aged 14 and over by Position in the Occupation and Employment Category in the Main Job - 2018.Q4-2022.Q1

Position in occupation and job category in main job	4º T 2018	1º T 2019	2º T 2019	3º T 2019	4º T 2019	1º T 2020	2º T 2020	3º T 2020	4º T 2020	1º T 2021	2º T 2021	3º T 2021	4º T 2021	1º T 2022
Total	0,65	-0,98	1,66	0,61	0,82	-2,51	-9,73	-0,73	4,54	-0,16	2,64	4,02	2,98	-0,49
Employed in the private sector (*)	0,49	-0,90	1,57	0,52	1,40	-2,93	-11,57	-0,43	4,37	-0,84	2,26	5,85	3,85	0,33
Employed in the private sector, (*) - formal	0,50	-0,16	0,87	-0,26	1,78	-1,59	-8,47	-1,99	2,39	-0,24	1,85	4,39	2,95	1,10
Employed in the private sector, (*) - not formal	0,48	-3,04	3,64	2,79	0,34	-6,74	-20,89	5,03	10,80	-2,64	3,52	10,24	6,43	-1,82
Domestic worker	-0,23	-2,44	2,74	0,59	0,90	-6,22	-21,81	-2,39	5,61	1,03	4,10	9,19	6,35	-1,56
Domestic worker - formal	-1,88	-0,70	0,93	-1,85	1,65	-7,71	-14,01	-8,33	-4,94	5,45	-0,64	4,40	7,36	0,07
Domestic worker - not formal	0,44	-3,13	3,50	1,52	0,66	-5,67	-24,79	0,22	9,80	-0,49	5,82	10,83	6,02	-2,12
Employed in the public sector	-0,77	-2,15	2,73	0,42	-0,58	-0,24	4,92	-4,44	2,29	-2,32	0,44	-2,54	1,85	-0,99
Employed in the public sector, (**) - formal	-4,96	-0,50	8,83	-4,59	-5,69	0,43	3,39	-6,63	3,07	-0,60	7,02	-3,36	5,96	-4,77
Employed in the public sector , (**)- not formal	-3,21	-12,59	14,54	5,10	-3,50	-6,58	4,01	-7,63	1,60	-16,05	10,83	6,02	10,28	-5,51
Employed in the public sector - military and statutory civil servant	0,73	0,96	-1,49	-0,25	1,23	1,73	5,42	-3,18	2,38	1,25	-2,88	-4,67	-1,26	1,12
Employer	2,51	-1,87	-1,35	0,00	1,97	-1,25	-10,44	-2,24	1,32	-3,92	0,60	2,23	1,89	5,73
Self employed	1,81	-0,12	1,63	1,36	0,60	-1,90	-10,58	0,71	6,74	2,68	4,60	3,32	1,90	-2,55
Auxiliary family worker	-2,13	0,38	1,51	-3,39	-4,42	-4,47	-4,26	7,41	0,82	-1,37	0,51	1,84	-3,62	0,83
Average for each period	-0,40	-1,95	2,95	0,18	-0,20	-3,26	-8,49	-1,76	3,63	-1,30	2,90	3,70	3,78	-0,76

Notes: (*) without domestic worker and (**) without military and statutory civil servant.

Source: Authors' own calculations based on PNADC (2022).

In the first cluster in the first quarter of 2020, we can see a sharp decrease in the number of employed workers, mainly in services, such as domestic services, accommodation and food, other services, sales, repairs of motor vehicles and motorcycles. Notwithstanding, the greatest fall in first semester of 2020 was in construction. We can highlight two important issues here. Firstly, the fall in employment in services occurred because this sector is particularly sensitive to social distancing measures to contain the pandemic, given the health risks among consumers, employees, and the rest of the economy (Ernesto Pereira Galindo, Pereira Silva, and Jorge Ubirajara Pedreira Junior 2022). Second, and most important, there was a sharp fall in gross fixed capital formation from the third quarter of 2019 (Figure 10), which started to recover just after the third quarter of 2020. Therefore, it is not a coincidence that the number of employed workers increased onwards until the first quarter of 2022. As was seen in the last section, aggregated *investment was the most important variable in influencing the unemployment rate*.
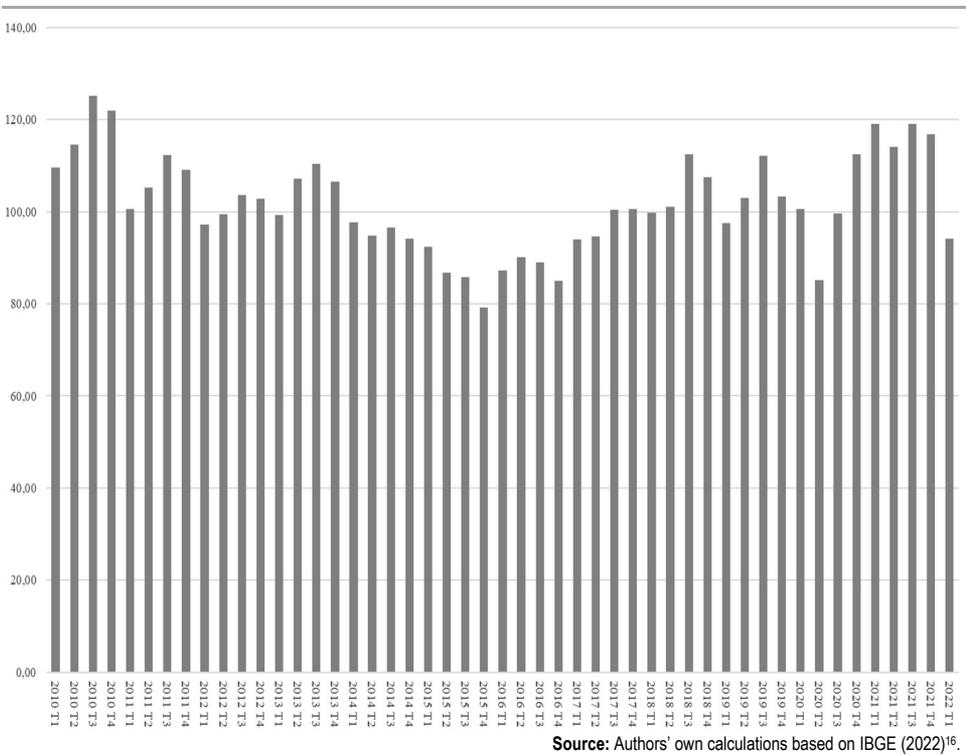

Source: Authors' own calculations based on IBGE (2022)[16].

Figure 10 Gross Fixed Capital Formation: Real Moving Base Index (Previous Year Average = 100)

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[16] **Instituto Brasileiro de Geografia e Estatística (IBGE).** 2022. National Accounts. https://secu-loxx.ibge.gov.br/economicas/contas-nacionais (accessed May 05, 2022).

In January 2021, the national vaccination campaign against COVID began in Brazil. Later, in 2021 there was a flexibilization of social distancing and new protocols related to the pandemic were introduced, which helped recover the number of employed workers from the fourth semester 2020 onwards. The greatest recoveries were verified in services. However, *the recovery in the number of employed workers was mainly in the informal sector (both private and public),* domestic workers and self-employed (see Tables 7 and 8, mainly). On average, the jobs created were jobs with low wages that require low skilled workers (Table 8).

According to Emiliano Brancaccio, Nadia Garbellini, and Raffaele Giammetti (2018) the deregulation of labor market may increase income inequalities with no significant links with real GDP growth whereas they are significantly correlated with wage share reductions (in GDP). The results of this sections about BLMR points that is precisely the case of Brazil because the decrease in unemployment rate is concentrated in a precarious job occupational structure.

Another important factor that helps to explain the recovery in the number of employed workers in the fourth quarter of 2020 was the *emergency aid* program of income transfer implemented in 2020 in the context of a national decree of war budget and state of public calamity approved by the Brazilian Congress. The aid program ("Auxílio Emergencial") paid five monthly installments of R$ 600.00 between April and August 2020, and four installments of R$ 300.00 between September and December to informal workers, individual micro-entrepreneurs (MEI), self-employed and the unemployed. According to official data the number of direct beneficiaries of the aid was 67.9 million Brazilians and the total amount transferred by the government was R$ 293.1 billion.

War budget and public calamity payments ended in December 2020 and in 2021 a constitutional amendment (PEC) with R$ 44 billion to "Auxílio Emergencial" (AE) was approved. The average value of this benefit was R$250.00 and varied from R$150.00 to R$375.00 depending on the beneficiary´s profile and the composition of each family. According to Marina Sanches, Matias Cardomingo, and Laura Carvalho (2021) AE was responsible for preventing the economy from falling between 8.4% and 14.8% last year. The reduction in household consumption could have decreased between 11 and 14.7% in the absence of this benefit, instead of the 6% drop effectively observed.

The above analysis is in line with the results of the last section, which shows that the rate of unemployment is more responsive to the investment rate and expansionary policies that may affect inflation rates. In the last case, emergency income transferring by AE was an important expansionary policy, which helped unemployed workers.

5. Final Remarks

The aim of this work was to analyze how BLMR in 2017 affected the rate of unemployment in Brazil. However, several factors other than the reform have affected the labor market, such as the economic crisis associated with the COVID pandemic and the Russia-Ukraine war. These other factors make it difficult to identify the effects of the reform itself. Moreover, there are several limitations to analyzing econometrically

(in macroeconomic terms) the isolated effects of Brazilian Labor Market Reform (BLMR). These include the fact that some effects can be cyclical, the reform is still recent and labor market changes can be slow and vary among economic activities, some time series are not homogenous due to discontinuity or methodological changes, which affect econometric robustness.

In order to overcome these limitations, we tested whether labor regulation affects the unemployment rate using a panel econometric model for 101 developing economies. Econometric results suggest that for developing economies, the rate of unemployment is more responsive to the investment rate and expansionary policies that may affect inflation rates as well as institutional variables that capture the quality of the economic environment and influence business. Furthermore, for this group of countries, employment protection legislation did not present positive effects on unemployment rates.

When analyzing just the Brazilian case similar results were found, i.e., the unemployment rate was closely associated with the investment rate and expansionary policies by government income transferring across the time span considered. In the short-term BLMR did not demonstrate a positive effect on the dynamics of the labor market based on the synthetic control method. Another important issue about this market is that the fall in the rate of unemployed more recently was mainly associated to the recovery of the private informal sector, domestic workers, and self-employed workers.

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Appendix

List of developing economies used in the sample

Albania, Algeria, Angola, Argentina, Armenia, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Beli, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Brazil, Burundi, Cabo Verde, Cambodia, Cameroon, Chad, Chile, Colombia, Costa Rica, Cote d´Ivoire, Dominican Republic, Ecuador, Egypt Arab Rep., El Salvador, Eswatini, Ethiopia, Fiji, Gabon, Gambia, Georgia, Ghana, Guatemala, Guinea-Bissau, Guyana, Honduras, Hong Kong, India, Indonesia, Iran Islamic Rep., Iraq, Israel, Jamaica, Kazakhstan, Kenya, Korea Rep., Kuwait, Kyrgyz, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Russian Federation, Saudi Arabia, Senegal, Serbia, Seychelles, Singapore, Sri Lanka, Syrian Arab Republic, Tajikistan, Tanzania, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, Uruguay, Vietnam, Yemen.

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