

DOES THE STRENGTH OF LABOUR REGULATION AFFECT SELF-EMPLOYMENT? EVIDENCE FROM THE BRICS COUNTRIES

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This article examines the relationship between labour regulation and self-employment in the BRICS countries by using data from the Labour Regulation Index developed at the Centre for Business Research at Cambridge University (CBR-LRI) and the ILOSTAT collected and developed by the ILO Department of Statistics from 1992 to 2013. The research is conducted in two strands. In the first strand, the study examines the relationship between labour regulation and self-employment at the overall level. The empirical results obtained suggest that a negative relationship exists in Brazil, China, and South Africa, while a positive relationship exists in Russia and South Africa. This implies that, as the relative strength of labour regulation increases in Brazil, China, and South Africa, fewer workers are likely to be engaged in self-employment. In Russia and India, however, the result implies that more workers are likely to be engaged in self-employment with relatively stronger labour regulation. In the second strand, the study provides a breakdown of labour regulation and self-employment into measures of their constituent components, including the regulation on different forms of employment, working time, dismissal of employees, employee representation, and industrial actions and employers' and vulnerable employment. The findings suggest that not all five aspects of labour regulation have a significant effect on employers' and vulnerable employment in the BRICS countries except for Russia. The most influential or the only aspect that has a significant effect on employers' employment is the regulation on different forms of employment in Brazil and South Africa (negative) and Russia (positive), and the regulation on industrial actions in India (positive) and China (negative), while the most influential or the only aspect affecting vulnerable employment is the regulation on dismissal in Brazil (negatively), the regulation on employee representation in Russia (positively), the regulation on different forms of employment in India (positively), the regulation on industrial actions in China (negatively), and the regulation on working time in South Africa (positively).

Keywords: labour regulation; self-employment; BRICS countries; CBR-LRI; ILOSTAT; empirical research.

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Introduction

Self-employment is becoming increasingly significant in the world of work. According to the International Labour Organization's (ILO) World Employment and Social Outlook 2021, an estimated 1.55 billion people, or 47 per cent were engaged in some form of self-employment by the end of 2019.¹ Self-employment is defined by the ILO Resolution concerning the International Classification of Status in Employment 1993 (ICSE-93) as

the jobs where the remuneration is directly dependent upon the profits (or the potential for profits) derived from the goods and services produced (where own consumption is considered to be part of profits).²

¹ ILO, *World Employment and Social Outlook: Trends 2020* (2020), at 18–9 (Jul. 1, 2023), available at https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_734455.pdf.

² ILO Resolution concerning the International Classification of Status in Employment 1993 (ICSE-93), para. 7 (Jul. 1, 2023), available at https://www.ilo.org/global/statistics-and-databases/standards-and-guidelines/resolutions-adopted-by-international-conferences-of-labour-statisticians/WCMS_087562/lang--en/index.htm.

It is distinguished from “paid employment” on the other side, and it embraces four sub-categories: employers, own-account workers, members of producers’ cooperatives, and contributing family workers.³ Of the four sub-categories, the own-account workers and contributing family workers make up the group of “vulnerable employment,” meaning that these workers have a lower likelihood of having formal work arrangements and are more likely to live in conditions of poverty.⁴

Many efforts have been made to get a better understanding of self-employment. Empirical research into self-employment has focused chiefly on its relationship with economic development. A number of scholars have observed a negative relationship between self-employment and economic development, which implies that the self-employment rate tends to decline with economic growth.⁵ A few scholars, however, have found no evidence that increases in the self-employment rate have increased the real growth rate of the economy.⁶ A second strand of research has attempted to explain the cross-national variations in the rate and characteristics of self-employment. In this regard, a variety of factors have been recognised, such as unemployment, female labour force participation, taxation, public policies, and cultural factors.⁷ An additional third strand has attempted to analyse the relationship between employment protection legislation and self-employment, particularly in developed countries. Within this vein, several studies have reported evidence of a positive relationship existing between the strictness (or rigidity) of employment protection legislation and self-employment in OECD countries.⁸ This indicates

³ According to the ICSE-93, “employers” are defined as “workers who working on their own account or with one or a few partners, hold the type of jobs defined as a self-employment job, and, in this capacity, on a continuous basis have engaged one or more persons to work for them as employees”; “own-account workers” are defined as “workers who working on their own account or with one or more partners, hold the type of jobs defined as a self-employment job, and have not engaged on a continuous basis any employees to work for them during the reference period”; “members of producers’ cooperatives” are defined as “workers who hold a self-employment jobs in a cooperative producing goods and services”; “contributing family workers” are defined as “workers who hold a self-employment jobs in a market-oriented establishment operated by a related person living in the same household.” For more information, see ICSE-93, paras. 9–12.

⁴ ILO, *supra* note 1, at 16, 34.

⁵ E.g., Dieter Bögenhold & Udo Staber, *The Decline and Rise of Self-Employment*, 5(2) Work, Emp. & Soc’y 223 (1991); Zoltan J. Acs et al., *Why Does the Self-Employment Rate Vary Across Countries and Over Time?*, Centre for Economic Policy Research Discussion Paper No. 871 (1994); Carlo Pietrobelli et al., *An Empirical Study of the Determinants of Self-Employment in Developing Countries*, 16(6) J. Int’l Dev. 803 (2004).

⁶ E.g., David G. Blanchflower, *Self-Employment in OECD Countries*, 7(5) Lab. Econ. 471 (2000).

⁷ E.g., Simon C. Parker & Martin T. Robson, *Explaining International Variations in Entrepreneurship: Evidence from a Panel of OECD Countries*, 44 Entrepreneurship Res. Series (2003); Roberto Torrini, *Cross-Country Differences in Self-Employment Rates: The Role of Institutions*, 12(5) Lab. Econ. 661 (2005).

⁸ E.g., David Grubb & William Wells, *Employment Regulation and Patterns of Work in EC Countries*, OECD Economic Studies 7 (1993); OECD, *Employment Outlook* (1999) (Jul. 1, 2023), available at https://www.oecd-ilibrary.org/employment/oecd-employment-outlook-1999_empl_outlook-1999-en; Concepción Román et al., *Dependent Self-Employment as a Way to Evade Employment Protection Legislation*, 37(3) Small Bus. Econ. 363 (2011).

employers may use self-employed contractors as a means of circumventing the effects of regulation on their ability to hire and fire employees.⁹ However, research professor, M. Robson questioned this result and re-examined the evidence on their relationship in OECD countries.¹⁰ Based on empirical research, he concluded that little evidence for a positive relationship between the strictness of employment protection legislation and self-employment can be found, and in some cases, stricter employment protection legislation may even reduce the rate of self-employment.¹¹ A more recent study by Adams et al. tested the relationship between labour regulation and economic outcomes (including self-employment) using a dataset covering 117 countries.¹² They found that self-employment is negatively linked to the strength of regulation on different forms of employment, which implies that, as the relative strength of legislation on different forms of employment increases, self-employment becomes less attractive relative to paid employment.¹³ As for the relationship between self-employment and employment protection legislation, however, they observed a positive result, indicating that more workers are likely to be engaged in self-employment with relatively stronger employment protection legislation.¹⁴

The interest of this article lies in the third strand, namely, the relationship between labour regulation and self-employment. As can be seen from the existing literature, the results of empirical work have been mixed or even conflicting. A possible explanation for this might be that the results depend on the model of econometric analysis and its underlying assumptions, as well as the sources of data that have been employed. In addition, much of the existing literature is confined to the developed countries; little is said about the developing countries. Although the recent study by Adams et al. provided an analysis across 117 countries, it failed to demonstrate significant differences between developed and developing countries. Considering the large differences in economic structures and labour market performances of the two groups of countries, it is neither appropriate to extend the findings based on one group to the other nor to incorporate both groups into a unified analytical framework. Moreover, the existing research fails to capture the complex, multi-dimensional nature of employment protection legislation and self-employment. When it comes to employment protection legislation, the focus tends to be limited to regulations governing the hiring and firing of employees. A full analysis of the

⁹ *Supra* note 8.

¹⁰ Martin T. Robson, *Does Stricter Employment Protection Legislation Promote Self-Employment?*, 21(3) *Small Bus. Econ.* 309 (2003).

¹¹ *Id.*

¹² Zoe Adams et al., *The Economic Significance of Laws Relating to Employment Protection and Different Forms of Employment: Analysis of a Panel of 117 Countries, 1990–2013*, 158(1) *Int'l Lab. Rev.* 1 (2019).

¹³ *Id.* at 15–6.

¹⁴ *Id.*

strength of labour regulation covering various aspects such as regulation on working time, employee representation, and industrial actions is lacking. As for the concept of self-employment, as mentioned at the very beginning of this introduction, it comprises four sub-categories: employers, own-account workers, members of producers' cooperatives, and contributing family workers. Each of these categories is further explicitly defined by the ILO. Unfortunately, to the best of our knowledge, no academic research has applied these sub-categories for empirical analysis, although a few research studies did use the concept of own-account workers or family workers to represent self-employment or distinguish non-agricultural self-employment from the more general category of self-employment.¹⁵

The present article attempts to fill the gaps and shed some light on the relationship between labour regulation and self-employment in developing countries. Research is conducted in two strands in five major developing countries, namely the member countries of BRICS. In the first strand, the study examines the relationship between the overall strength of labour regulation in general and the overall self-employment rate in the BRICS countries by using data from the Labour Regulation Index developed at the Centre for Business Research at Cambridge University (CBR-LRI) and the ILOSTAT dataset collected and developed by the ILO Department of Statistics.¹⁶ In the second strand, it provides a breakdown of the incidence of labour regulation and self-employment into measures of their constituent components. Specifically, according to the CBR-LRI, the five areas of labour regulation are further divided into five sub-indices: different forms of employment; working time; dismissal; employee representation; and industrial actions. Based on the ICSE-93 and the ILOSTAT dataset, self-employment can be divided into two sub-categories: employers and vulnerable employment. The reason for the selection of the BRICS countries is because they are five large developing countries whose economies currently have a very significant impact in the world of work, representing about 42 per cent of the global population, 23 per cent of the world's production, 30 per cent of the territory, and 18 per cent of the global trade.¹⁷ In addition, these countries tend to have the expertise as well as the political and economic capacities to determine the orientation of their own labour laws.¹⁸

In order to maintain consistency throughout the research, certain terminological issues need to be clarified at the outset. First, this research uses the expression 'the strength of labour regulation' rather than 'the strictness of employment protection

¹⁵ E.g., Acs et al. 1994.

¹⁶ John Armour et al., *CBR Leximetric Datasets* (2016) (Jul. 1, 2023), available at <https://ilostat.ilo.org/topics/employment>.

¹⁷ BRICS INDIA 2021 (Jul. 1, 2023), available at <https://brics2021.gov.in/>.

¹⁸ Sean Cooney et al., *Building BRICS of Success?*, in Matthew W. Finkin & Guy Mundlak (eds.), *Comparative Labour Law* 440 (2015).

legislation.” The term “strictness” is often used to indicate labour market rigidity or the degree of legal protection for workers regarding hiring and firing-related issues,¹⁹ whereas the term “strength” tends to be broader, which implies the degree of legal protection of legal rules in general. Since the focus of this article is not merely limited to employment protection legislation, but rather on the overall labour regulation with its various constituent components, the term “strength” is employed, and it indicates a protective function of labour regulation for workers. Second, this research uses the concept of self-employment as defined by the ILO but with some adjustments. Instead of the four sub-categories of self-employment as developed by the ICSE-93, a dual classification of employers and vulnerable employment is made. This is because “employers’ employment” may be fundamentally related to entrepreneurship, while “vulnerable employment” tends to be associated with informality, income insecurity, and a lack of access to social protection, leading to conditions of poverty.²⁰ This is consistent with the ILO’s annual report, *World Employment and Social Outlook: Trends*, and the ILOSTAT dataset, in which a dual classification of employers and vulnerable employment that are made up of own-account workers and contributing family workers in self-employment is recognised.²¹

The remainder of this article proceeds as follows. Section 1 discusses the theory and sources of data that are relevant to this research. Section 2 firstly reviews the development of labour regulation in the BRICS countries and then provides the trends in the strength of labour regulation and its constituent components (i.e. different forms of employment; working time; dismissal; employee representation; and industrial actions). Section 3 provides the trends in the rate of self-employment and its constituent components (i.e. employers’ and vulnerable employment). Section 4 examines the relationship between labour regulation (including its components) and self-employment (including its components) in the BRICS countries. Section 5 discusses the empirical results obtained from this study, followed by some concluding remarks.

¹⁹ E.g., Sangheon Lee et al., *The World Bank’s “Employing Workers” Index: Findings and Critiques – A Review of Recent Evidence*, 147(4) *Int’l Lab. Rev.* 416 (2008).

²⁰ E.g., ILO, *supra* note 1, at 34; Brendan Burchell et al., *Self-Employment Programmes for Young People: A Review of the Context, Policies and Evidence*, ILO Working Papers, No. 198 (2015) (Jul. 1, 2023), available at https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_466537/lang-en/index.htm.

²¹ It should be noted that one of the four sub-categories of self-employment – members of producers’ cooperatives – that identified by the ICSE-93 has not (yet) been recorded by the ILO. Based on the ILOSTAT dataset and the ILO’s report *World Employment and Social Outlook: Trends*, overall self-employment consists of three components: employers, own-account workers, and contributing family workers, and the last two make up vulnerable employment. See ILO, *supra* note 1, at 87.

1. Theory, Research Questions, and Sources of Data

The operation of the labour market is clearly affected to a large extent by labour regulation.²² In general, the economic theory can offer two schools of thought in regard to the relationship between the strength of labour regulation and its economic effects: “neoclassical” and “new institutional.” As pointed out by Davies, these two schools of thought “differ as to the goals they are pursuing and the assumptions they use in their analysis.”²³ Neoclassical economists advocate that the self-regulating market is under perfect competition since the market in and of itself is efficient and the involved actors are rational, and any artificial interventions such as labour regulation would destroy the balance of the labour market.²⁴ New institutional economists, however, argue that the unregulated market often leads to failures in terms of the achievement of efficient outcomes, and labour regulation would help to overcome such failures and at the same also create a positive relationship between employers and employees.²⁵ Unfortunately, neither school of thought currently offers a clear answer when it comes to the economic effects of the strength of labour regulation on the rate of self-employment. The overriding message from the existing literature on the economic effects of the strength of labour regulation on the rate of self-employment, as mentioned in the introductory section of this article, is ambiguous, depending to a large extent on the model of econometric analysis and its underlying assumptions as well as the sources of data applied.

In this article, the author does not attempt to arrive at a more realistic theory, but instead intends to provide some preliminary empirical evidence for understanding the relationship between labour regulation and self-employment. Rather, this work seeks to address the following questions: (a) what are the trends in the strength of labour regulation and the rate of self-employment in the BRICS countries? (b) is there a relationship (either positive or negative) between the strength of labour regulation and the rate of self-employment in the BRICS countries? and (c) what are the similarities and differences in the empirical outcomes of the BRICS countries? The answers to these questions may help scholars and policy makers to gain a better understanding of how labour regulation affects self-employment in the BRICS countries, leading to theory building or some labour law reforms in the future.

One of the most well-known tools for examining the relationship between two variables is correlation analysis through the scatterplot.²⁶ If the points on a scatterplot

²² Anne C.L. Davies, *Perspectives on Labour Law* 26 (2009).

²³ *Id.*

²⁴ *Id.* at 27–9.

²⁵ *Id.* at 29–32.

²⁶ Samprit Chatterjee & Ali S. Hadi, *Regression Analysis by Example* 25 (2015).

follow a somewhat straight-line pattern, a linear relationship (either positive or negative) can be identified.²⁷ To further quantify the strength and direction of the linear relationship between the two variables, a simple Ordinary Least Squares (OLS) regression may take place. In this study, the two primary variables are the strength of labour regulation and the rate of self-employment in the BRICS countries, and both the scatter plot and the simple OLS regression are employed to understand the relationship between these two variables.

Another challenge in examining the relationship between two variables is finding or developing the relevant data. Thus, in order to carry out this study, it was necessary to find or develop the data on the strength of labour regulation and the rate of self-employment in numerical values that are present in the BRICS countries. In terms of measuring the strength of labour regulation, a number of studies have been carried out, such as the Labour Regulation Index constructed by Botero et al., the World Bank's Employing Workers Index, the OECD's Employment Protection Index, and the ILO's Employment Protection Legislation Database.²⁸ However, these datasets only cover limited aspects of labour regulation. In addition, they either lack a consistent time series or fail to cover all five BRICS countries. The CBR–LRI dataset, by contrast, provides a time series of changes in labour laws across 117 countries going back to the early 1970s until 2013, including each of the five BRICS countries, and it provides data on the strength of labour regulation in numerical values. The CBR–LRI dataset contains a total of forty indicators, which are grouped into five sub-indices of labour regulation: different forms of employment (i.e. self-employment, part-time work, fixed-term employment, and temporary agency work); working time (i.e. annual leave entitlements, public holiday entitlements, overtime *premia*, weekend working, limits to overtime working, duration of the normal working week, and maximum daily working time); dismissal (i.e. both procedural and substantive constraints on dismissal, reinstatement as the standard solution for unfair dismissal, notification of dismissal, redundancy selection, and priority in re-employment); employee representation (i.e. the right to unionisation and collective bargaining, the duty to bargain, the extension of collective agreements, closed shops, and codetermination); and industrial actions (i.e. the unofficial, political, and secondary industrial action, lockouts, and the right to industrial action). Each indicator is scaled to lie between a minimum value of 0 (representing no protection or the lowest protection offered

²⁷ Sampriti Chatterjee & Ali S. Hadi, *Regression Analysis by Example* 25 (2015).

²⁸ Juan Botero et al., *The Regulation of Labour*, 119(4) Q.J. Econ. 1339 (2004); World Bank, *Labour Market Regulation Methodology* (Jul. 1, 2023), available at <http://www.doingbusiness.org/Methodology/labor-market-regulation>; The OECD, *Employment Protection Legislation* (Jul. 1, 2023), available at <https://www.oecd-ilibrary.org/content/thematicgrouping/lfs-epl-data-en/datasets?fmt=ahah>; ILO, *Employment Protection Legislation Database* (Jul. 1, 2023), available at https://www.ilo.org/dyn/eplx/termmain.home?p_lang=en.

for workers) and a maximum value of 1 (representing the maximum or highest protection offered for workers).²⁹

The data on the self-employment rate tends to vary significantly across countries and time due to the differences in the way self-employment is measured. Nevertheless, the definitive source of data can be obtained from various international organisations, such as the ILO, the OECD, and the World Bank. Since the ILO has the most expertise in the world of work and covers nearly all of the countries, including the BRICS countries, this study uses the data collected and estimated by the ILO, namely, the ILOSTAT. The ILOSTAT is a leading source of labour statistics in the world of work, covering comprehensive international data on a wide range of labour-related topics for 189 countries, including the rate of self-employment in the BRICS countries since the early 1990s. It should be noted that the data on self-employment is divided into three different groups in the ILOSTAT: employers, own-account workers, and contributing family workers. As mentioned earlier in the introduction, for research purposes, own-account workers and contributing family workers are incorporated into one group, referred to as vulnerable employment. In other words, three variables concerning self-employment can be identified: the rate of overall self-employment and its two constituent components, namely, the rate of employers and the rate of vulnerable employment.

The production of data in the CBR-LRI and the ILOSTAT provides the possibility to carry out statistical analysis by means of the scatterplot and the simple OLS regression aimed at identifying the correlation between labour regulation and self-employment in the BRICS countries. The longitudinal data also offer significant advantages for researchers to track changes over time series and to conduct international comparisons. Due to the lack of data on the earlier part of the period covered by the dataset in Russia, this study focuses on the period from 1992 to 2013. For research purposes, the study also considers the relationship between the strength of labour regulation and the self-employment rate in the BRICS countries. In other words, the strength of labour regulation is considered the explanatory variable, while the rate of self-employment is the dependent variable. The two strands of our research will be examined in greater detail in the sections that follow.

2. Measuring Labour Regulation in the BRICS Countries

2.1. Labour Regulation in the BRICS Countries: An Overview

Before measuring the strength of labour regulation in the BRICS countries by using the data from the CBR-LRI, it is necessary to provide a brief overview on the labour law developments in the five countries over the selected time period. This

²⁹ For a more detailed explanation for each of the 40 indicators, see Zoe Adams et al., *CBR Labour Regulation Index: Dataset of 117 Countries* (2016).

is because such information would provide important contexts for the changes that are depicted graphically below in the data analysis and help us gain a better understanding of the empirical results.³⁰

A useful place to start is with the introduction of the “labour code” in each of the BRICS countries. The term “labour code,” in the most literal sense, refers to the codification of labour laws in legislative form, which can also be understood as the fundamental labour law governing labour matters in each country. Due to the complexity of the legal systems and national contexts of the BRICS countries, not all of these countries have a labour code, but even for those countries without a labour code, some primary labour legislation dealing with labour matters can still be identified. Based on the ILO’s Database of National Labour, Social Security, and Related Human Rights Legislation (NATLEX) and National Labour Law Profiles and the International Encyclopaedia for Labour Law and Industrial Relations concerning the BRICS countries, the labour code or the functional equivalent of a labour code or the primary labour legislation of each country can be recognised: for example, the Consolidation of Labour Laws of 1943 in Brazil; the Labour Code of 2001 in Russia; various federal labour laws in India; the Labour Law of 1994 and the Labour Contract Law of 2007 in China; and the Labour Relations Act of 1995 and the Basic Conditions of Employment Act of 1997 in South Africa.³¹

In Brazil, the Consolidation of Labour Laws of 1943 is the fundamental labour law that regulates labour matters. It was enacted in 1943 by the then-President Getulio Vargas by uniting and structuring all of the existing labour laws at that time into a single codified document.³² Since entering into force in 1943, it has undergone dozens of amendments. The law contains extensive labour provisions on labour matters such as duties of employers and rights of employees, special rules for certain groups and categories of employees, individual and collective labour contracts, industrial associations, application of administrative fines, labour courts,

³⁰ Cf. Simon Deakin et al., *Labour Law and Inclusive Development: The Economic Effects of Industrial Relations Laws in Middle-Income Countries*, in Michèle Schmiegelow & Henrik Schmiegelow (eds.), *Institutional Competition Between Common Law and Civil Law* 185 (2014).

³¹ The NATLEX is a legal database developed by the ILO’s International Labour Standards Department. It contains national labour, social security, and related human rights legislation for 196 countries as well as 160 territories, provinces, or other sub-divisions, including the BRICS countries. It is available at https://www.ilo.org/dyn/natlex/natlex4.home?p_lang=en (Jul. 1, 2023); The National Labour Law Profiles are developed by the ILO’s Governance and Tripartism Department. It aims to facilitate a general understanding of how labour law works in each country, and to provide the reader with easy access to information on various topics. It should be noted that, of the five BRICS countries, only Russia and South Africa are covered. The country profiles are available at <https://www.ilo.org/ifpdial/information-resources/national-labour-law-profiles/lang--en/index.htm> (Jul. 1, 2023); The International Encyclopaedia for Labour Law and Industrial Relations provides information on international and national labour law and standards in the world of work. It covers various country monographs, including the BRICS countries.

³² Ronald Amorim e Souza, *Labour Law in Brazil* 29 (2004).

etc. In addition to the Consolidation of Labour Laws of 1943, the Constitution of 1988 also plays an essential role in dealing with labour matters. This Constitution provides a long list of labour rights, which not only confirm or reaffirm the provisions contained in the Consolidation of Labour Laws of 1943 but also serve to amend and supplement it.³³ Since its enactment in 1988, the Brazilian labour laws have been improved with the modernisation of previous laws, including the Consolidation of Labour Laws of 1943, and with intense state regulation regarding the nature of labour relations. Since 1992, the major developments in this Constitution include the enhancement of protections for part-time workers starting in 2001; the elimination of the warning period for dismissal under legislation enacted from 1998 to 2000 in an effort to promote greater labour market flexibility; and the introduction of an extra three days of paid leave per additional year of employment starting in 2011.³⁴

In Russia, the labour regulation system can be characterised as “codified-plus”: it consists of a labour code bringing together several statutory provisions concerning various labour-related issues and some other pieces of labour legislation supplementing or elaborating the provisions contained in the labour code.³⁵ The history of the labour code in Russia goes back to the Labour Codes of 1918, 1922, and 1971 that were enacted during the period of the Soviet Union. With the collapse of the Soviet Union in 1991, the Russian Federation emerged on the global stage as an independent country. Since 1991, the Labour Code of 1971 has been amended almost every year and supplemented by the adoption of federal labour laws, such as the Employment of Population Act of 1991, the Collective Agreements and Accords Act of 1992, the Settlement of Collective Labour Disputes Act of 1995, the Trade Union Act of 1996, the Russian Tripartite Commission for Regulation of Socio-Labour Relations Act of 1999, the Fundamentals of Health and Safety Act of 1999, the Compulsory Social Insurance Against Occupational Accidents and Diseases Act of 1998, and the Minimum Wages Act of 2000.³⁶ This reflected a new era of economic development and the fact that Russia had acquired sovereign statehood with an independent legislative system.³⁷ The Labour Code of 1971 ceased to be in force on 1 February 2002 due to the enactment and entry into effect of the current Labour Code of 2001. With the changing socio-economic conditions and the increasing complexity of the employer-employee relationship originating from globalization and technological progress, countless amendments have been added to the Labour

³³ Souza 2004, at 36–40.

³⁴ Cf. Zoe Adams et al. 2016.

³⁵ ILO, *National Labour Law Profile: Russian Federation* (January 2002) (Jul. 1, 2023), available at https://www.ilo.org/ifpdial/information-resources/national-labour-law-profiles/WCMS_158917/lang--en/index.htm.

³⁶ *Id.*

³⁷ Zhanna A. Gorbacheva, *Labour Law in Russia* 53 (2019).

Code since its adoption in 2001.³⁸ In particular, substantial amendments were made in 2006, 2011, and 2013.³⁹ The current Labour Code of Russia contains extensive provisions on labour matters such as the fundamentals of labour legislation, labour relations, social partnership, employment contracts, working conditions, labour disciplines, female and youth labour, health and safety, different forms of work, trade unions, and labour dispute settlements.

Unlike Russia and Brazil, India has neither a labour code nor a functional equivalent of the labour code. However, it has a great number of labour laws since the federal and state legislatures have co-equal powers on the making of labour legislation, making it a very complex labour regulation system in India.⁴⁰ It should be noted that Indian labour laws are in many ways dispersed and fragmentary. They not only distinguish between workmen (i.e. those who are employed to do any manual, unskilled, skilled, technical, operational, clerical, or supervisory work for hire or reward) and non-workmen (i.e. those who mainly work in a managerial or administrative capacity), but also apply differently depending on the nature of the activity that workers are engaged in and their place of work.⁴¹ In general, Indian labour laws can be broadly classified into four categories: conditions of work (e.g. the Factories Act of 1948, the Plantation Labour Act of 1951, the Mines Act of 1952, Contract Labour “Regulation and Abolition” Act of 1970, the Child Labour “Abolition and Regulation” Act 1985); labour relations (e.g. the Trade Unions Act of 1926, the Industrial Employment “Standing Orders” Act of 1946, and the Industrial Disputes Act of 1947); wages and monetary benefit (e.g. the Minimum Wages Act of 1948, the Payment of Wages Act of 1936, the Payment of Bonus Act of 1965, and the Equal Remuneration Act of 1976); and social security (e.g. the Workmen’s Compensation Act 1923, the Employees’ State Insurance Act of 1948, the Maternity Benefit Act 1961, and the Payment of Gratuity Act of 1972).⁴² Since 1992, the major developments in Indian labour laws included the expansion of restrictions on industrial actions that started in 1998 and the relaxation of protections for workers who hold a fixed-term contract, which followed in 2003.⁴³

³⁸ See Vladimir Lebedev, *The Development of Employment Legislation in the Post-Soviet Period*, in Vladimir Lebedev & Elena Radevic (eds.), *Labour Law in Russia: Recent Developments and New Challenges* (2014); Andrey Lushnikov, *The Development of Russian Labour Law in the 21st Century: A Comparative Sketch of Regularities and Trends*, in Vladimir Lebedev & Elena Radevic (eds.), *Labour Law in Russia: Recent Developments and New Challenges* (2014).

³⁹ *Id.*

⁴⁰ Chandra K. Johri, *Labour Law in India* 52–8 (2014).

⁴¹ *Id.*; see also Debi S. Saini, *Labour Law in India: Structure and Working*, in Pawan S. Budhwar & Jyotsna Bhatnagar (eds.), *The Changing Face of People Management in India* 60–94 (2008).

⁴² *Id.*

⁴³ Cf. Zoe Adams et al., *supra* note 29.

In China, the primary labour legislations are the Labour Law of 1994 and the Labour Contract Law of 2007. The Labour Law of 1994 represented an important milestone for Chinese labour legislation. It established the basic legal rules on labour matters such as employment promotion, individual and collective labour contracts, working time, wages, occupational health and safety, special protection for female and juvenile workers, vocational training, social insurance, labour disputes resolution, and labour inspection. Based upon the Labour Law of 1994, the Labour Contract Law was enacted in 2007 and came into force in 2008. The Labour Contract Law of 2007 provides for systematic regulation of the conclusion, content, performance, and termination of labour contracts, along with matters concerning liability and dispute resolution. In addition to these two labour laws, some other regulations that serve to specify or enrich the contents of Labour Law of 1994 can also be recognised, such as the Trade Union Law of 1992, the Regulation on Working Time of Workers of 1995, the Regulation on Unemployment Insurance of 1999, the Employment Promotion Law of 2007, the Labour Dispute Mediation and Arbitration Law of 2007, and the Social Insurance Law of 2010.

In South Africa, the primary labour legislations are the Labour Relations Act of 1995 and the Basic Conditions of Employment Act of 1997. It should be noted that South Africa witnessed a new birth with the abolishment of the apartheid system during the period between 1991–1994. In 1994, the Department of Labour appointed a Ministerial Legal Task Team to draft new labour legislation. In this context, the Labour Relations Act was born in 1995 and came into effect in 1996, marking a new area in South African labour laws.⁴⁴ This law deals with issues such as unfair dismissal, unfair labour practices, trade unions, collective bargaining, strikes, workplace representation, fixed-term contracts, and part-time work. Another important labour law is the Basic Conditions of Employment Act of 1997, which deals with labour matters including written particulars of employment, payment of wages, working time, rest breaks and periods, annual leave, sick leave, maternity leave, other parenthood-related leave, family responsibility leave, and notice periods. Additionally, some other labour laws can also be recognised, such as the Occupational Health and Safety Act of 1993, the Compensation for Occupational Injuries and Diseases Act of 1993, the Employment Equity Act of 1998, the Skills Development Act of 1998, and the Unemployment Insurance Act of 2001.⁴⁵

2.2. Trends in the Strength of Labour Regulation in the BRICS Countries

According to the CBR-LRI, the strength of labour regulation can be presented in numerical form in accordance with the provisions contained in the national labour

⁴⁴ ILO, *National Labour Law Profile: South Africa* (March 2002) (Jul. 1, 2023), available at https://www.ilo.org/ifpdial/information-resources/national-labour-law-profiles/WCMS_158919/lang-en/index.html.

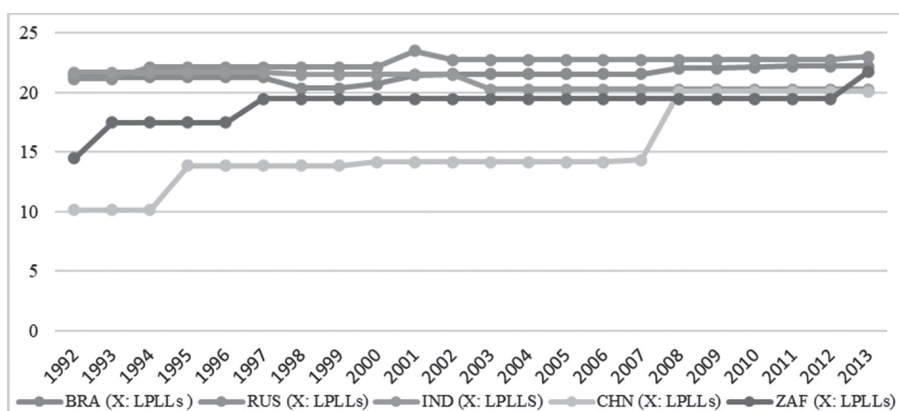
⁴⁵ *Id.*

laws. Figure 1 below shows the trends in the overall strength of labour regulation (that is, covering all of the five sub-indices) for the BRICS countries from 1992 to 2013. Scores are represented as the aggregative values of 40 indicators. As can be seen from the figure, Russia has had the strongest legal protection for workers among the five countries since 1994, reflecting the implementation of various labour provisions after the dissolution of the Soviet Union. Brazil also provided relatively strong protection for workers based on the Consolidation of Labour Laws of 1943. It is worth noting that both Russia and Brazil witnessed some fluctuations in the strength of labour regulation, but their overall trends saw a rise. China had the weakest legal protection for workers, running through almost the entire selected period, but in the meantime, it also witnessed the most significant changes in strengthening its labour laws. However, it has come close to the other four countries since 2008 due to the implementation of the Labour Contract Law of 2007. Like China, South Africa also experienced a significant increase in the strength of labour regulation, which reflected the implementation of various labour laws such as the Labour Relations Act of 1995 and the Basic Conditions of Employment Act of 1997. What is striking in Figure 1 is the decrease in the strength of labour regulation in India, which indicates that Indian labour laws became gradually less protective for workers over the selected period. This reflected a relaxation of the protection of labour laws for workers in India. Nevertheless, Indian labour laws remained at a high level of protection for workers due to the country's great number of labour laws, particularly from 1992 to 1994, when it had the strongest protection among the five countries.

Figures 2–6 break down the overall strength of labour regulation by sub-indices for the BRICS countries from 1992 to 2013. Scores are represented as averages to illustrate and compare general trends over time. In Figure 2, the trends in labour regulation on different forms of employment are presented. In general, Brazil and Russia had stronger legal protection for workers than India, China, and South Africa. Although Brazil witnessed some fluctuations, it remained at its topmost level during the whole period. China and South Africa experienced significant changes in the strengthening of each of these countries' respective labour laws in 2008 and 2013, respectively, making them notable increases in the trends. Russia also saw a rise in the legal protection of different forms of employment. India was the only country that showed a different trend, which means the regulation on different forms of employment became less protective for workers during the selected period. Figure 3 presents the changes in the regulation of working time. China showed the most significant changes among the five countries. It had the weakest legal protection before 1995. It then increased gradually, and after 2007, it reached the highest point among the five countries. Different from China, Russia and South Africa experienced a significant change in weakening working time regulation in 2002 and 1997, respectively, making them less protective for workers. Brazil witnessed a short-period fluctuation from 1997 to 2002, while India remained at the same

level without any changes for twenty-two years. Figure 4 illustrates the trends in the strength of dismissal regulation. The five countries tended to vary significantly from one another. India had the highest point of protection against dismissal before the year 2008 and remained at the same level without any changes over the whole period. China showed a rapid increase in 2008, reaching the highest level of protection among the five countries. Russia and South Africa also saw a rise in dismissal regulation. Brazil had the weakest dismissal protection and witnessed a flat trend apart from a short-period fluctuation from 1997 to 2000. Figure 5 illustrates the trends in the strength of employee representation regulation. In general, South Africa and Brazil had stronger legal protection for workers than India and China. Brazil, India, and China remained at the same level without any changes during this period. Only South Africa and Russia witnessed some changes. Specifically, South Africa experienced a significant increase in 1993, and later in 1997, it saw a slight decrease. Russia reached its highest point in 2001 but only lasted for one year. Figure 6 illustrates the trends in the strength of industrial actions regulation. In general, the disparity among the five countries became smaller over time. While Russia, China, and South Africa witnessed an increase in the legal protection for industrial actions, India showed a decreasing trend. It is interesting to note that none of the five countries have seen any changes since 2000. This is especially noticeable in Brazil, where a flat trend is observed running throughout the entire period.

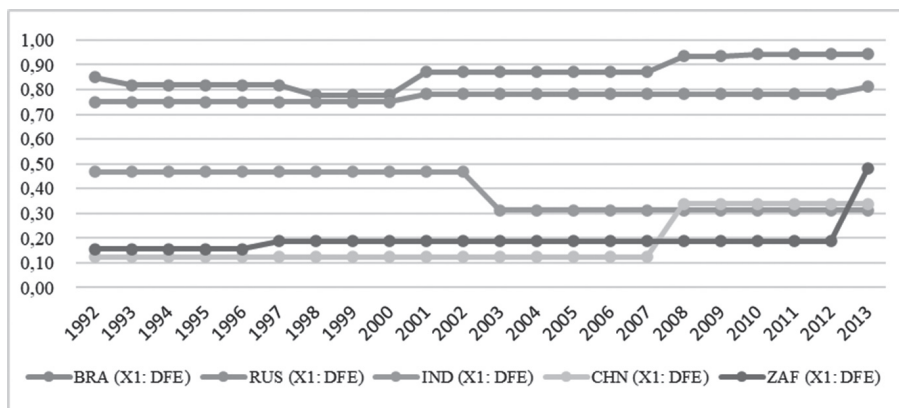
Figure 1: **Trends in the overall strength of labour regulation in the BRICS countries, 1992–2013**



Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.

Source: CBR-LRI (2016), and own calculations.

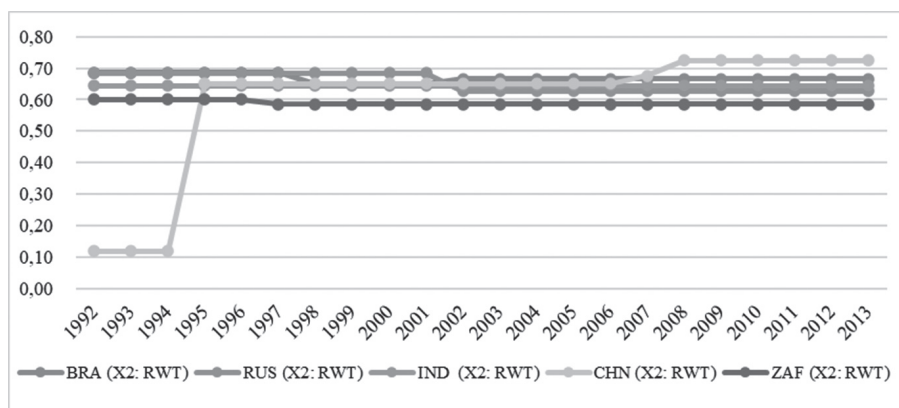
Figure 2: **Trends in the strength of regulation on different forms of employment in the BRICS countries, 1992–2013**



Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.

Source: CBR-LRI (2016), and own calculations.

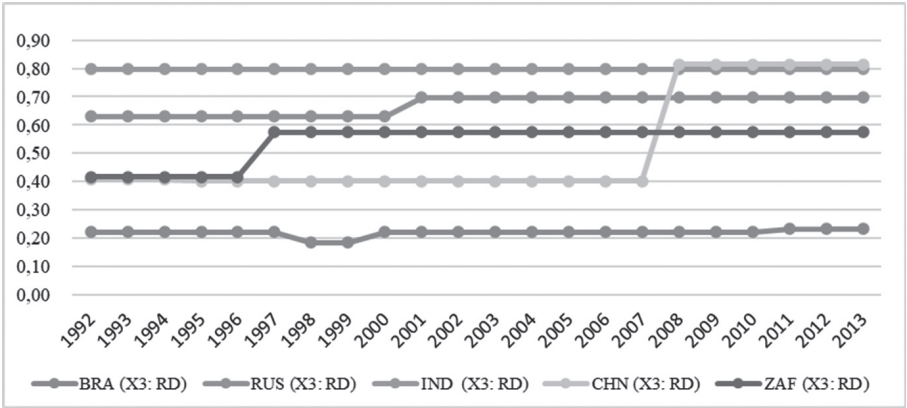
Figure 3: **Trends in the strength of working time regulation in the BRICS countries, 1992–2013**



Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.

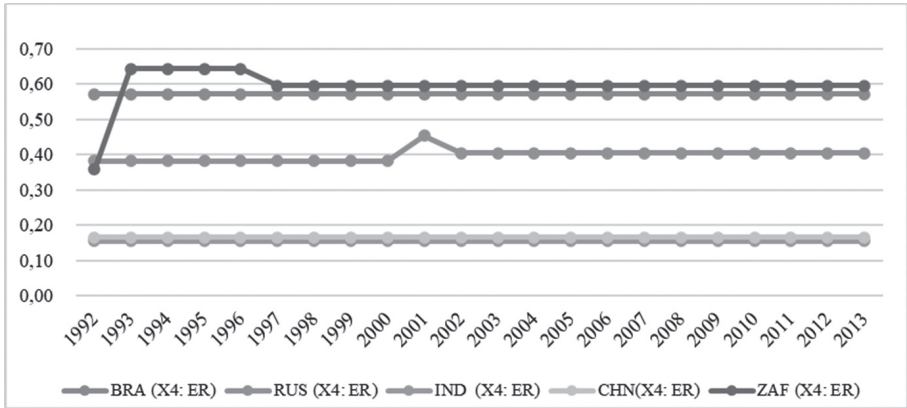
Source: CBR-LRI (2016), and own calculations.

Figure 4: Trends in the strength of dismissal regulation in the BRICS countries, 1992–2013



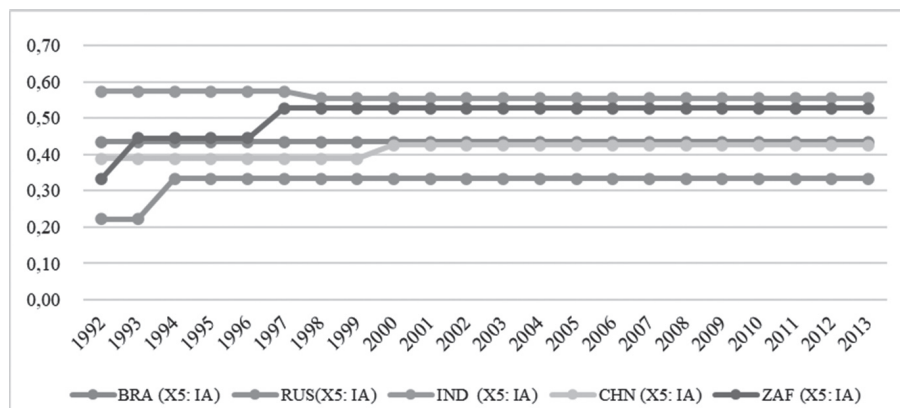
Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.
Source: CBR-LRI (2016), and own calculations.

Figure 5: Trends in the strength of employee representation regulation in the BRICS countries, 1992–2013



Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.
Source: CBR-LRI (2016), and own calculations.

Figure 6: Trends in the strength of industrial actions regulation in the BRICS countries, 1992–2013



Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.

Source: CBR-LRI (2016), and own calculations.

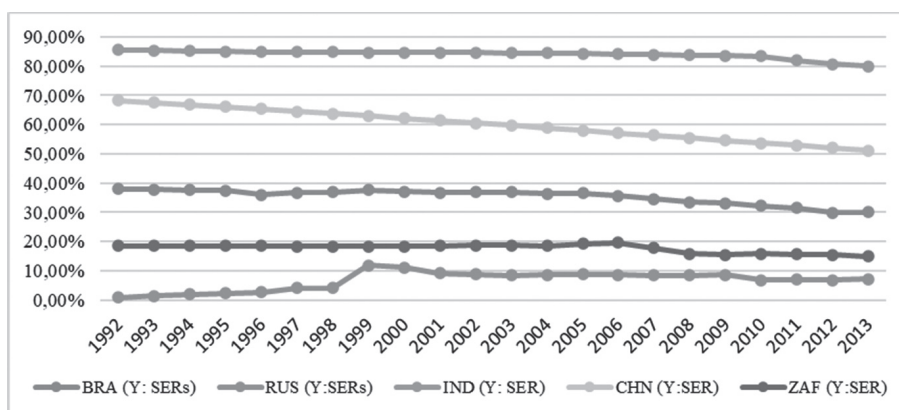
3. Measuring Self-Employment in the BRICS Countries

The ILOSTAT allows for the presentation of the trends in self-employment rates in the BRICS countries. Figure 7 illustrates the trends in the overall self-employment rates in the BRICS countries over the course of twenty-two years (1992–2013). As can be seen from this figure, India had the highest self-employment rate. Approximately 85 per cent of India's employment was self-employed. China's self-employment rate decreased from 68.29 per cent in 1992 to 51.17 per cent in 2013, representing the most significant change among the five countries analysed. In Brazil, the self-employment rate declined gradually between 1992 and 2013, falling by approximately 7.82 per cent to reach 30.13 per cent at the end of this period. Russia had the lowest self-employment rate among the five countries analysed. The self-employment rate was almost nil (0.86 per cent) in 1992 and only began to slowly increase during the subsequent seven years (1992–1999). Additionally, the rate rarely exceeded 10 per cent, with the exception of the years 1999 and 2000.

Figures 8–9 present a breakdown of self-employment by its two constituent components for the BRICS countries. Figure 8 provides the trends in employers' employment in the BRICS countries from 1992 to 2013. South Africa had the highest employers' employment rate, which reached its highest point (8.39 per cent) in 2006, and then declined significantly until 2013. Brazil showed a few fluctuations during

this period, ranging from 4 per cent to 5 per cent. What stand out most from the figure are the trends in Russia, India, and China; they tended to vary from 1992 to 1997. However, since 1997, the three countries have produced similar outcomes regarding the rates of employers' employment, at around 1.4 per cent. Figure 9 shows the trends in vulnerable employment in the BRICS countries from 1992 to 2013. As can be seen from this figure, the trend in vulnerable employment in the BRICS countries was consistent with the trend in overall self-employment, as indicated in Figure 7. In addition, it can be found that, in each of the five BRICS countries, the major proportion of self-employment is vulnerable employment.

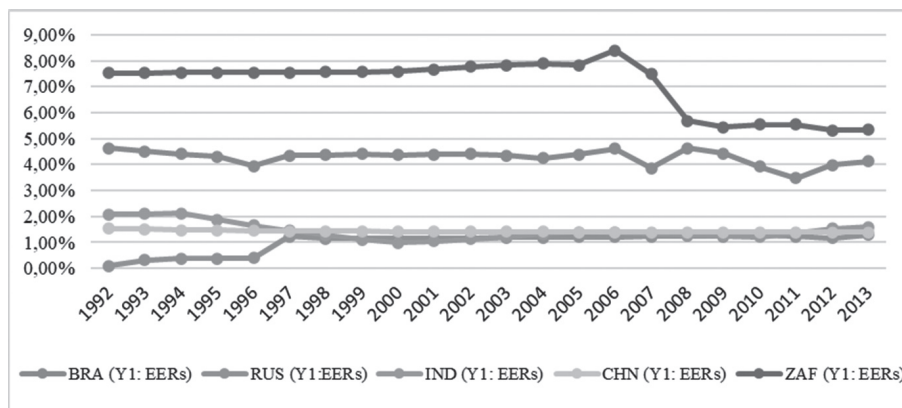
Figure 7: **Trends in the overall self-employment rates in the BRICS countries, 1992–2013**



Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.

Source: ILOSTAT, ILO modelled estimates (2019).

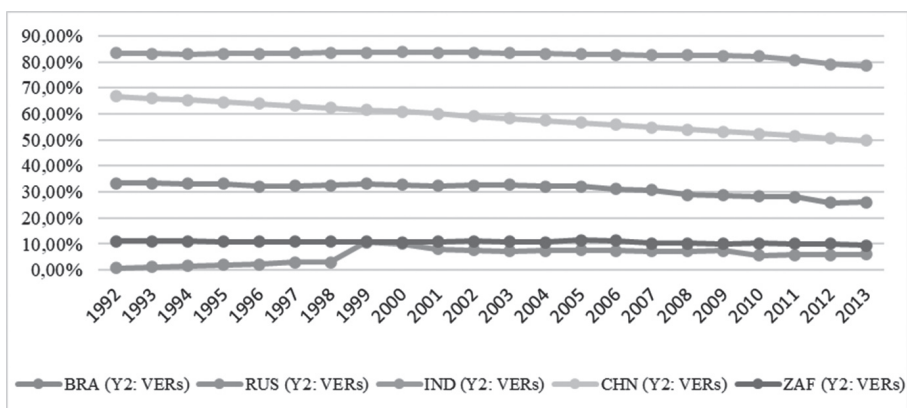
Figure 8: **Trends in the rates of employers' employment in the BRICS countries, 1992–2013**



Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.

Source: ILOSTAT, ILO modelled estimates (2019).

Figure 9: **Trends in the rates of vulnerable employment in the BRICS countries, 1992–2013**



Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa.

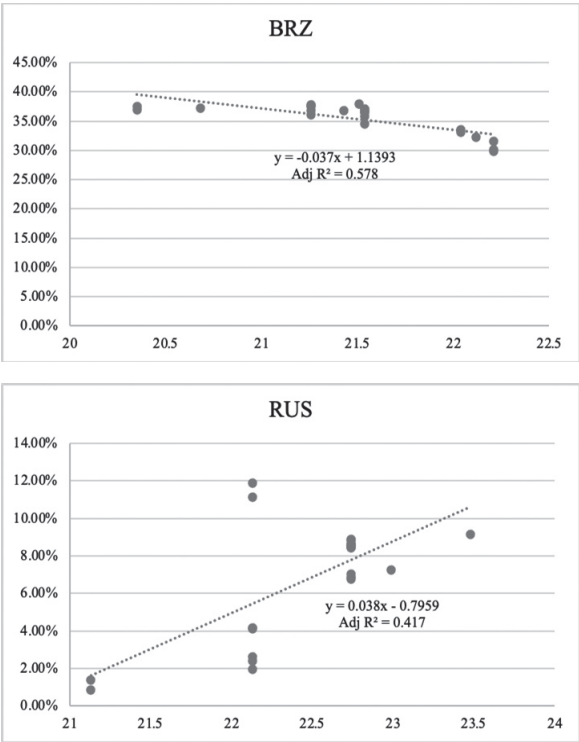
Source: ILOSTAT, ILO modelled estimates (2019).

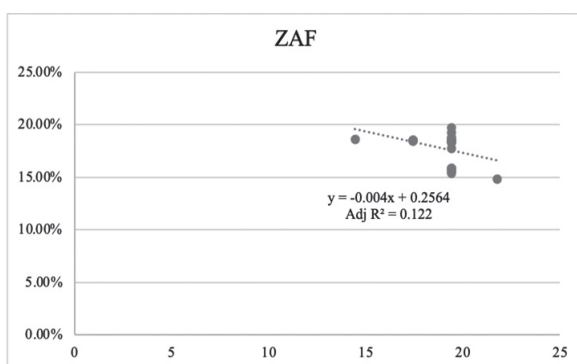
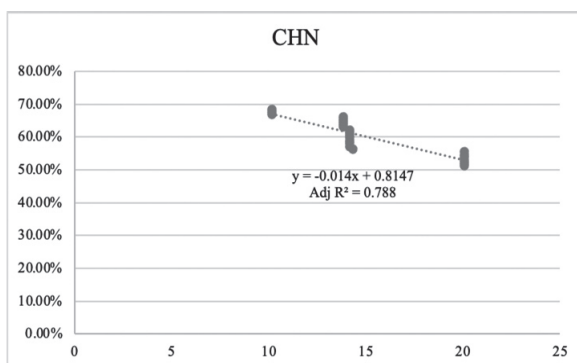
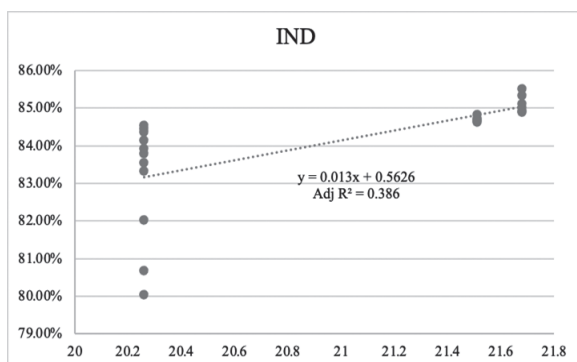
4. Labour Regulation and Self-Employment: Empirical Results

4.1. The Relationship Between Labour Regulation and Self-Employment

In this section, the empirical results regarding the relationship between labour regulation and self-employment in the BRICS countries are provided by using the data as described in sections 3 and 4. Figure 10 plots the values of the overall strength of labour regulation against the corresponding values of the overall self-employment rate in the BRICS countries from 1992 to 2013. The graph below illustrates a significant correlation between these two variables, indicating that changes in the strength of labour regulation tend to affect overall self-employment rates. While a negative relationship is observed in Brazil, China, and South Africa, a positive one exists in Russia and India. Specifically, it is expected that an increase in the strength of labour regulation in Brazil, China, and South Africa decreases the self-employment rate by 0.037 per cent, 0.014 per cent, and 0.004 per cent, respectively. In Russia and India, however, it is expected that an increase in the strength of labour regulation will increase the self-employment rate by 0.038 per cent and 0.013 per cent, respectively.

Figure 10: The relationship between the overall strength of labour regulation and the overall self-employment rates in the BRICS countries, 1992–2013





Note: BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa; X: the overall strength of labour regulation; Y: the overall employment rate.

Source: CBR-LRI (2016), ILOSTAT, ILO modelled estimates (2019), and own calculations.

4.2. The Relationship Between Individual Components of Labour Regulation and Self-Employment

In the second strand of the empirical analysis, a breakdown of labour regulation and self-employment into measures of their constituent components is conducted. While labour regulation is divided into five variables, including different forms of employment, working time, dismissal, employee representation, and industrial actions, self-employment is categorised into two variables, consisting of employers' and vulnerable employment. The research examines the effects of the strength of regulation relating to different forms of employment, working time, dismissal, employee representation, and industrial actions on the rates of employers' and vulnerable employment. The empirical results are reported in Table 1 below.

In Brazil, not all five variables of labour regulation have been shown to have significant effects on the rates of employers' and vulnerable employment. In fact, only the regulation on different forms of employment is negatively associated with the employers' employment rate, while the other four variables of labour regulation provide no evidence of a linear relationship ($p > 0.1$ or no p -value). It is estimated that an increase in the strength of regulation on different forms of employment decreases the employers' employment rate by 0.019 per cent. With respect to the relationship to vulnerable employment, the regulation on different forms of employment remains significant and a negative relationship can be observed. In addition, the strength of dismissal regulation is also estimated to have a significant negative effect on the rate of vulnerable employment. Compared to the regulation on different forms of employment, its effect on vulnerable employment tends to be greater (-0.894 per cent).

Unlike Brazil, in Russia, all five variables of labour regulation have significant effects on the rates of employers' and vulnerable employment. While it is observed that the strength of regulation on different forms of employment, dismissal, employee representation, and industrial actions is positively associated with the rates of employers' and vulnerable employment, the regulation on working time tends to have a negative effect. The most influential variables for employers' and vulnerable employment are the regulation on different forms of employment and employee representation, respectively. It appears that an increase in the strength of regulation on different forms of employment increases the employers' employment rate by 0.137 per cent, while an increase in the strength of employee representation decreases the vulnerable employment rate by 0.833 per cent.

In India, like in Brazil, not all five variables of labour regulation have significant effects. The only significant relationships are those that exist between the strength of regulation on industrial actions and the rate of employers' employment and between the strength of regulation on different forms of employment and the rate of vulnerable employment, in both of which a positive relationship can be observed. In other words, with an increase in the strength of regulation on industrial actions and different forms of employment, the rates of employers' and vulnerable employment are expected to grow by 0.323 per cent and 0.102 per cent, respectively.

In China, except for the variable of the regulation on employee representation, all the other four variables provide significant results. It is estimated that fewer workers are likely to be engaged in both employers' and vulnerable employment as a result of relatively stronger regulation on different forms of employment, working time, dismissal, and industrial actions. The regulation on industrial actions serves as the most influential variable for both the employers' and vulnerable employment. It is also expected that an increase in the strength of regulation on industrial actions decreases the rate of employers' employment by 0.019 per cent and the rate of vulnerable employment by 2.425 per cent, respectively.

In South Africa, like in Brazil, only the strength of regulation on different forms of employment is negatively associated with the rate of employers' employment. It is observed that an increase in the strength of regulation on different forms of employment decreases the rate of employers' employment by 0.065 per cent. As for the relationship to vulnerable employment, like in China, except for the variable of the regulation on employee representation, all the other four variables provide significant results. While it is observed that the strength of regulation on different forms of employment, dismissal, and industrial actions is negatively associated with the rates of vulnerable employment, the regulation on working time tends to have a positive effect. The most influential variable for vulnerable employment is the regulation on working time, and it is estimated that an increase in the strength of regulation on working time increases the rate of vulnerable employment by 0.292 per cent.

Table 1: Relationship of the strength of labour regulation (with its constituent components) to the self-employment rate (with its constituent components) in the BRICS countries, 1992–2013

		<i>BRA</i>	<i>RUS</i>	<i>IND</i>	<i>CHN</i>	<i>ZAF</i>
<i>Employers' employment</i>	<i>Different forms of employment</i>	-0.019* (0.078)	0.137*** (0.001)	0.012 (0.219)	-0.002** (0.016)	-0.065* (0.055)
	<i>Adjusted R²</i>	0.104	0.385	0.028	0.222	0.131
	<i>Working time</i>	0.011 (0.829)	-0.083*** (0.002)	0 (no p-value)	-0.002*** (0.000)	0.417 (0.263)
	<i>Adjusted R²</i>	-0.047	0.362	-0.048	0.762	0.015
	<i>Dismissal</i>	-0.071 (0.184)	0.078*** (0.001)	0 (no p-value)	-0.001** (0.017)	-0.038 (0.263)
	<i>Adjusted R²</i>	0.041	0.427	-0.048	0.214	0.015
	<i>Employee representation</i>	0 (no p-value)	0.119** (0.014)	0 (no p-value)	0 (no p-value)	-0.003 (0.946)
	<i>Adjusted R²</i>	-0.048	0.232	-0.048	-0.048	-0.050
	<i>Industrial actions</i>	0 (no p-value)	0.079*** (0.001)	0.323*** (0.000)	-0.019*** (0.000)	-0.046 (0.317)
	<i>Adjusted R²</i>	-0.048	0.416	0.653	0.646	0.002

Vulnerable employment	<i>Different forms of employment</i>	-0.356*** (0.000)	0.766** (0.024)	0.102*** (0.005)	-0.430*** (0.000)	-0.043*** (0.003)
	<i>Adjusted R²</i>	0.712	0.193	0.297	0.598	0.337
	<i>Working time</i>	0.340 (0.430)	-0.460** (0.030)	0 (no p-value)	-0.181*** (0.001)	0.292* (0.073)
	<i>Adjusted R²</i>	-0.017	0.175	-0.048	0.433	0.109
	<i>Dismissal</i>	-0.894** (0.040)	0.470*** (0.009)	0 (no p-value)	-0.220*** (0.000)	-0.027* (0.073)
	<i>Adjusted R²</i>	0.154	0.262	-0.048	0.591	0.109
	<i>Employee representation</i>	0 (no p-value)	0.833** (0.022)	0 (no p-value)	0 (no p-value)	-0.006 (0.733)
	<i>Adjusted R²</i>	-0.048	0.196	-0.048	-0.048	-0.044
	<i>Industrial actions</i>	0 (no p-value)	0.468** (0.011)	0.463 (0.204)	-2.425*** (0.000)	-0.034* (0.089)
	<i>Adjusted R²</i>	-0.048	0.244	0.033	0.666	0.095

Notes: a) BRA: Brazil; RUS: Russia; IND: India; CHN: China; ZAF: South Africa. b) Regression coefficients are reported; p-values in parentheses; ***Significant at 0.01 level; **significant at 0.05 level; *significant at 0.1 level.

Source: CBR-LRI (2016), ILOSTAT, ILO modelled estimates (2019), and own calculations.

5. Discussion

On the basis of the above empirical results, it is evident that there is a significant relationship between labour regulation and self-employment in the BRICS countries, but the direction and degree of the relationship tend to be different. It should be noted at the outset that the empirical results primarily show the strength of the association between labour regulation and self-employment, and they can at most indicate the direction (positive or negative) of the potential effects of labour regulation on self-employment. They do not, in and of themselves, imply the causal effects of the strength of labour regulation to induce more or less self-employment.

In general, the results suggest that a negative relationship exists in Brazil, China, and South Africa. This could imply that, as the relative strength of labour regulation increases, fewer workers are likely to be engaged in self-employment, which means self-employment becomes less attractive relative to paid employment in these three countries. In addition, the estimated coefficient for Brazil is larger than the estimated coefficients for China and South Africa. This indicates that changes in the strength of labour regulation tend to have a larger effect on self-employment in Brazil than similar changes in China and South Africa. In other words, as the strength of labour regulation increases by the same degree in these three countries, Brazil would have a greater decrease in the rate of self-employment. In Russia and India, however,

a positive relationship can be observed. This could imply that more workers are likely to be engaged in self-employment with relatively stronger labour regulation, that is, self-employment becomes more attractive relative to paid employment. Moreover, it is found that the effect of the relationship in Russia is larger than that in India, meaning Russia would have a greater increase in the rate of self-employment than India with the relatively stronger labour regulation to the same degree.

Considering the complexity of labour regulation and self-employment, this article has also attempted to conduct a correlation analysis of their constituent components. The results suggest that not all five sub-indices of labour regulation have a significant effect on employers' and vulnerable employment in the BRICS countries, except for Russia. Specifically, in terms of the relationship to the employers' employment, only one aspect provides a significant result in Brazil (i.e. different forms of employment), India (i.e. industrial actions), and South Africa (i.e. different forms of employment), while four aspects in China (except for employee representation) and all five aspects in Russia provide significant effects. As for the relationship to vulnerable employment, similar results can be found in Russia and China, that is, four aspects (except for employee representation) and all five aspects result in significant outcomes, respectively. In Brazil and South Africa, however, in addition to the regulation on different forms of employment, some other aspects also have a significant effect on vulnerable employment, namely, the regulation on dismissal in Brazil and the regulation on working time, dismissal, and industrial actions in South Africa. In India, there remains one aspect that has a significant effect on vulnerable employment, but it has recently shifted from the regulation on industrial actions to the regulation on different forms of employment. A possible explanation for these results is that several aspects of labour regulation remained at the same level without any changes during the selected period, which means no additional information could be offered. For example, aspects such as the regulation on working time and dismissal in India, the regulation on employee representation in Brazil, China, and India, and the regulation on industrial actions in Brazil.

There is also some evidence to suggest that certain aspects of labour regulation provide an opposite outcome to the direction of the relationship between labour regulation and self-employment at the overall level. In the case of Russia, despite the fact that all five aspects have a significant effect on both employers' and vulnerable employment, one of them provides an opposite outcome to the direction of the relationship at the overall level, namely, the regulation on working time. This indicates that fewer workers are likely to be engaged in both employers' and vulnerable employment with relatively stronger regulation on working time. In the case of South Africa, in contrast to a negative relationship at the overall level, the effect of regulation on working time is positively associated with vulnerable employment, meaning more workers are likely to be engaged in vulnerable employment with relatively stronger regulation on working time. The inconsistent outcomes can be

explained by the multi-dimensional nature of labour regulation. In other words, different aspects of labour regulation in each country may have different effects on the protection of workers as well as economic outcomes. In this respect, further research is needed to focus on the effect of certain specific aspects of labour regulation on self-employment.

Moreover, it should be noted that the majority of the estimated coefficients for vulnerable employment are larger than those for employers' employment. This could imply that changes in different aspects of labour laws tend to have a greater effect on vulnerable employment than on employers' employment in the BRICS countries, with South Africa serving as an exception in terms of the regulation on different forms of employment and India serving as another exception, in which the only one but different aspect of labour regulation has a significant effect on employers' and vulnerable employment. Two points should be mentioned here. Firstly, it is observed that the major proportion of overall self-employment in the BRICS countries is vulnerable employment, rather than employers' employment. Secondly, the most influential aspect of labour regulation for self-employment varies according to countries as well as the categories of self-employment. A tailored approach regarding the country case study is needed. This is a matter for future research.

Additionally, several limitations need to be noted regarding the present study. The first limitation is that the data on the strength of labour regulation is based on the legal texts of each country. The data provided here only indicates a picture of the 'law in books', and it is not clear how labour laws operate in practice in the BRICS countries. This may hinder the actual regulatory impacts on self-employment in these countries. Secondly, the scope of this study was limited to the period from 1992 to 2013. In the absence of comparative data from before 1992 and after 2013, it is unfortunate that the study is not able to capture the earlier developments as well as the more recent changes regarding the relationship between labour regulation and self-employment in the BRICS countries. Thirdly, although the study has divided labour regulation into five specific aspects, these five aspects remain very broad. A further breakdown of each aspect is needed to determine how each legal rule may impact self-employment.

Conclusion

Several empirical studies have been done regarding the relationship between labour regulation and self-employment in developed countries. The results obtained from these studies tend to be mixed or even conflicting according to the model of econometric analysis and the underlying assumptions as well as the data employed. This article has attempted to extend the scope of the research to developing countries by undertaking an investigation of the relationship between the strength

of labour regulation and the rate of self-employment in the BRICS countries. Using data from the CBR-LRI from 1992 to 2013, our study found that labour regulation in general has been gradually strengthened over time in the BRICS countries, except for India, where labour regulation became less protective for workers. In addition, it is observed that several specific aspects of labour regulation have remained at the same level without any changes over time, such as the regulation on working time and dismissal in India, the regulation on employee representation in Brazil, China, and India, and the regulation on industrial actions in Brazil. Using data from the ILOSTAT, the study has found that the major proportion of self-employment in the BRICS countries is vulnerable employment, and there has been, in general, a decrease in the rate of self-employment in the BRICS countries over time, except for Russia, where an increasing trend was observed.

According to the statistical analysis that was carried out using the data from the CBR-LRI and ILOSTAT, this study found evidence for a significant relationship between the overall strength of labour regulation and the overall self-employment rate in the BRICS countries. While a negative relationship is observed in Brazil, China, and South Africa, a positive one is found in Russia and South Africa. This indicates that, as the relative strength of labour regulation increases, fewer workers are likely to be engaged in self-employment in Brazil, China, and South Africa, while more workers are likely to be self-employed in Russia and South Africa. Subsequently, this study has examined the relationship between individual components of labour regulation and self-employment, that is, the relationship between the regulation on different forms of employment, working time, dismissal, employee representation, and industrial actions and employers' and vulnerable employment. The findings suggest that not all five aspects of labour regulation have a significant effect on employers' and vulnerable employment in the BRICS countries, except for Russia, where all five aspects provide significant outcomes. In terms of the relationship to the employers' employment, the most influential or even the only aspect of labour regulation that has a significant effect is the regulation on different forms of employment in Brazil and South Africa (negative), and Russia (positive), and the regulation on industrial actions in India (positive) and China (negative). As for the relationship to vulnerable employment, the most influential or the only aspect affecting it is the regulation on dismissal in Brazil (negatively), the regulation on employee representation in Russia (positively), the regulation on different forms of employment in India (positively), the regulation on industrial actions in China (negatively), and the regulation on working time in South Africa (positive).

It should further be noted that this article provides some empirical evidence for understanding the relationship between labour regulation and self-employment in the BRICS countries. The results are only statistically presented. They should be considered a preliminary analysis, and much more work remains to be done in order to gain a better understanding of the relationship between labour regulation and

self-employment in each of the five BRICS countries, to extend the analysis to cover each legal rule of the five aspects of labour regulation, and to take into account the institutional and economic context of each country.

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