

EXAMINATION OF THE RELATIONSHIP BETWEEN EMPLOYMENT PROTECTION REGULATION AND UNEMPLOYMENT: PANEL CASE STUDY OF COUNTRIES OF THE COMESA

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Abstract

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This paper aims to empirically test the impact of the relationship between the rules concerning the protection of employees and the unemployment rate. The aim is to answer the question of whether there is a positive or negative relationship between stricter employment protection regulation and unemployment, and whether it is statistically significant. The methodology used is from the panel data analysis of the multifactorial regression model with fixed and random effects and the generalized method of moments (GMM) model. Fella (2000) and the Organisation for Economic Co-operation and Development (OECD, 2004), find that any tightening of regulations regarding the protection against individual dismissals of 1 percent, measured through the indicator of the stringency of employment protection — individual dismissals leads to a decrease of unemployment of 1.774 percent. Fujita and Nakajima (2016) point out that the employment rate is procyclical, while the unemployment rate is countercyclical. The research was conducted using secondary data with panel data analysis for 24 countries, 19 of which are current members of the Common Market for Eastern and Southern Africa (COMESA). The results of the endogeneity test show that there are no endogeneity variables (p-values: 0.372, 0.434, and 0.110, retrospectively for the variables *scd*, *sid*, and *tc*).

Keywords: Common Market for Eastern and Southern Africa, COMESA, Unemployment Rate, Employment Protection Regulation, Panel Analysis

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1. INTRODUCTION

The global economic landscape is replete with varying employment protection regulations, which often have significant implications for labor markets, particularly in regions such as the Common Market for the East and the South (COMESA) — a conglomerate of 21 member states with a combined gross domestic product (GDP) of \$805 billion and a massive population exceeding \$583 million. Yet, despite the vastness and economic relevance of COMESA, there exists a conspicuous gap in the literature: there are very few empirical studies that delve into the nuances of employment and unemployment regulation in this region. This study bridges this literature gap by taking a closer look at COMESA, analyzing how its employment protection regulations intersect with unemployment rates.

The importance of this paper is that we examine the relationship between the rules related to the protection of employees and the unemployment rate. Another aim is to examine the impact of the strictness of the rules on the unemployment rate. The research was conducted by applying panel data analysis to the sample of 19 COMESA member countries and 5 former member countries, among the strictest employment and unemployment protection rules, and if it is statistically significant.

The research questions are as follows:

RQ1: Is there a positive or negative relationship between stricter employment protection regulation and unemployment?

RQ2: With the tightening of regulations regarding protection from dismissals, does it have an impact on job retention?

RQ3: Do individual layoffs reduce unemployment?

Our research is grounded in a robust theoretical framework that draws insights from renowned researchers in the field. Young (2003) has posited the significant role of stricter employment protection in reducing worker turnover. Fujita and Nakajima (2016) delve into how employment and unemployment rates react to economic cycles. Bruil et al. (2010) point out that findings on these matters are often contingent upon the measurements of labor market flows. The significance of this research is in its potential to influence policy decisions and offer insights to both member and non-member states of COMESA. By understanding the dynamics of employment protection regulations and their correlation with unemployment rates, governments can implement more effective labor policies that not only protect workers but also ensure economic growth and stability. These studies further reinforce the need for a more in-depth examination, especially given the inconsistency and the relative absence of focused empirical studies on COMESA.

Utilizing a comprehensive research methodology, we applied panel data analysis on 19 COMESA member countries and 5 former member countries. Our methodology incorporated a mix of statistical and econometric analyses, employing models such as the fixed effects regression model, random effects model, and the generalized method of moments (GMM) model, to name a few. Preliminary findings indicate a notable relationship between stricter employment protection regulations and reductions in unemployment rates, with tighter regulations on individual dismissals and temporary

employment forms leading to marked decreases in unemployment.

The main models that have been used in this paper are the fixed effects regression model and random effects model, GMM model, Hausman test, endogeneity test, matrix correlation analysis, stationarity examination with augmented Dickey-Fuller (ADF) test, and Breusch-Pagan test.

Based on the results of the endogeneity test show that there are no endogeneity variables (p-values: 0.372, 0.434, 0.110, retrospectively for the variables *scd*, *sid*, and *tc*). As you can see from Table 2, there is no strong correlation between the selected variables. The results of the ADF test in Table 3 show that no variable suffers from non-stationarity.

The results of parameter estimation in Table 4 using the random effects model show that there is a statistically significant and negative correlation between the regulations dealing with protection from individual dismissals and the regulations dealing with temporary forms of employment, on the one hand, and unemployment, on the other hand. Therefore, the results obtained from Table 4 show that any tightening of the regulations regarding the protection from individual dismissals of 1%, measured through the indicator of the strictness of the employment protection — individual dismissals, leads to a decrease in unemployment of 1.774%.

Also, any tightening of regulations regarding the regulation of temporary forms of employment of 1%, measured through the indicator of the strictness of employment protection temporary contracts leads to a decrease in the unemployment rate of 1.529%. On the other hand, the results of the parameter estimation imply that there is no statistically significant correlation between regulations dealing with collective layoff protection and unemployment. This means that the tightening of these regulations does not affect unemployment.

Based on the Hausman test it has been proven that the fixed effects model is the most suitable model for this work because the results of the application of the fixed effects model show a stronger impact of tightening regulations protecting employees from individual dismissals and regulations regarding temporary forms of employment.

The paper is structured as follows. Section 1 is the introduction. Section 2 reviews the related literature presenting the findings and conclusions of studies and research in this field. Section 3 describes the research methodology. The results of the paper are presented and discussed in Section 4 and Section 5, respectively. Section 6 concludes the paper.

2. LITERATURE REVIEW

Employment protection regulation is a set of rules and procedures that regulate process of the hiring and firing workers. This set of rules includes severance pay, collective agreements, social and pension insurance, prescribed minimum wage, probation period, payment of overtime work, ways and conditions of dismissal of employees, etc. This set of rules varies from country to country. In essence, it is prescribed through labor law, but and through collective bargaining agreements.

Although this set of rules varies from country to country, it has been introduced in all countries with the aim of welfare and improving employment conditions. However, the same provisions that protect employees translate into a cost for employers and thus could have a negative impact on hiring (Organisation for Economic Co-operation and Development [OECD], 2004). Numerous empirical studies point to this duality. Under which conditions will employment protection legislation have a positive and under which conditions will a negative impact on employment depend on a number of factors? In other words, there is no clear position in professional and academic circles on whether strict regulations will lead to an increase or decrease in the unemployment rate, i.e., the duration of unemployment.

The first group of authors (Bentolila & Dolado, 1994) points out that stricter employment protection legislation leads to an increase in the period of unemployment. This is explained by the fact that stricter regulations increase the costs of employers related to the dismissal of employees, and for that reason, they are very careful when creating new jobs and new employment. In this regard, Bentolila et al. (2011) state increasing the strictness of employment protection legislation can be negatively linked with employment through increasing labor costs indirectly as a consequence of the strengthening bargaining power of workers.

The second group of authors (Nickell, 1997; Jaunky, 2013) claims that stricter employment protection legislation reduces the unemployment rate because employers, due to the high costs associated with firing workers, find it difficult to make decisions about job destruction. According to the third group of authors (Anderson et al., 1994; Belot et al., 2002), stricter employment protection regulation has little or no effect on the unemployment rate.

Research by Gonalons-Pons and Gangl (2022) notes that the Great Recession raised concerns that employment protection institutions that are effective during macroeconomic stability may become counterproductive under growing macroeconomic instability. The authors carried out research for 21 countries during 11 years, respectively from 2004 to 2014. The findings showed that unemployment signs are lower in contexts with strong employment protection, both in positive macroeconomic environments and negative ones. Further results from this paper find that the positive effects of employment protection for workers remain robust during economic downturns.

Namely, the growth in severance pay and compensation for dismissal of workers reduces the rate of dismissal of workers, but also the rate of employment of new ones, it has little and no effect on unemployment. This observation is consistent with the findings of Young (2003). He found that stricter employment protection regulation reduces worker turnover, and in the recession phase regulations influence the reduction of the firing rate, while during the economic boom, they affect the reduction of the hiring rate. In this way, stricter regulations contribute to job stability, on one side, and the unemployment duration, on the other side. Similar claims were made by Fujita and Nakajima (2016). They point out that the hiring rate is procyclical, while the firing rate is countercyclical.

Given the above, it is not a surprising fact that there is no clear view of the effects of employment protection legislation on performances and features of the labor market.

The whole thing is complicated by the fact that the effects of employment protection regulation also depend on case law. Therefore, judicial practices should be taken into account when considering the impact of employment protection legislation on unemployment. Namely, although the regulations related to the dismissal of workers can be very clear and well-known to employers, in case the employers do not comply, the costs of their non-compliance will depend on the court's decision.

They often deviate significantly from the costs prescribed by the rules, because the judges often take into account interest, mental pain, and the like. However, sometimes court decisions can also benefit employers. For this reason, judicial practices must be taken into account when considering the effects of the employment protection regulation on unemployment, which is especially catachrestic for African countries.

Based on Heimberger (2021), the size of the effect of employment protection legislation on unemployment remains unclear. Existing econometric estimates show considerable variation, and therefore it is difficult to draw valid conclusions. The report applies meta-analysis and meta-regression methods to a unique data set consisting of 881 observations on the effect of employment protection legislation on unemployment from 75 studies. The author's findings show that estimates based on survey-based employment protection legislation variables report a significantly stronger impact of employment protection legislation on unemployment growth than estimates developed using employment protection legislation indices based on OECD methodology, where the latter relies on encoding legal information. The findings further show that employment protection has a small unemployment-increasing effect on female unemployment, compared to a zero effect on total unemployment.

Overall, the theoretical analysis does not provide clear-cut answers as to the effect of employment protection on overall unemployment and employment. Hence this paper aims to examine the impact of the strictness of rules on the unemployment rate. The research was performed by applying the analysis of panel data on the example of 24 countries, 19 countries of current members of the COMESA, and all ex-members, except for Angola. In addition to high poverty levels and food and nutrition insecurity tackling unemployment is one of the priorities adopted by the COMESA strategy for the period from 2015 to 2030.

Another work carried out by Blanchard and Tirole (2022) mentions that optimality requires unemployment insurance and employment protection in the form of taxes from work; it also requires that labor taxes be equal to unemployment benefits. The authors then explore the implications of four broad categories of deviations: limits on insurance, limits on severance taxes, ex-post wage bargaining, and firm or worker heterogeneity. Coverage may be more limited than standard; so can the space for employment protection. The general principle remains, however, namely the need to see unemployment insurance and employment protection together, and not in isolation.

Although The World Bank (2020) estimates that Sub-Saharan Africa has been recording annual GDP growth rates of 4.5% between 2000 and 2013, compared to around 2% for the previous 20 years, these robust growth rates have not been able to address the problems of unemployment and poverty. Mkombe et al. (2021) and Patel et al. (2020) point out that Africa is among the continents that have faced a high unemployment rate and if not solved is expected to cause persistent poverty. Countries of COMESA have developed different guiding documents such as the employment and labor protocol, the employment promotion policy, and measures, but their effects were not adequately analyzed. For this reason, it is important to analyze all measures that affect reducing the unemployment rate. Hence, this paper is important because it indicates the effects of employee protection measures in the context of strategy implementation. The significance of this research becomes even more important given the following.

There were 18.6 million migrants in Africa in 2013; 31.3 million African people are living in countries other than their birthplace; 65% of Sub-Saharan Africa migrants remain in Sub-Saharan Africa; 71-80% in West Africa; 66% in Southern Africa and 55% in East Africa (International Organization for Migration [IOM], 2017). Besides this, the McKinsey Global Institute (2023) predicted that in the next period, about 40 million highly skilled laborers will be missing, or about 2.9 million by 2035 health workers.

In literature, there is an abundance of papers dealing the employment protection regulation that can be classified into two groups. The first group includes papers that examine the relationship between the employment protection regulation and both job and worker flows. In this group it can be differentiated two kinds of studies. The studies focus on job flows. Such studies analyze labor demand. The other group consists of studies that focus on the analysis of worker flows, or more broadly, of flows of persons, and they consider the supply side of the labor market and relate to all transitions between the various states of the labor market and the reallocation of work. There are papers that have been studied at the same time both job and worker flows, but the number of these papers is limited.

The most famous studies are the papers conducted by Anderson et al. (1994), Burda and Wyplosz (1994), Burgess et al. (2000), Davis and Haltiwanger (1999), Davis et al. (1998), and Davis et al. (2006). The second group consists of papers that focus on studying the impact of different segments of the employment protection regulation on the labor market, i.e., on unemployment, such as a study which was conducted by Obenauer and von der Nienburg (1915), which is one of the oldest research from this field, or research conducted by Dube et al. (2010), which is interesting because it is based on the use of different specifications of the panel model.

The first to study the impact of employment protection regulation on the labor market was Marchingiglio and Poyker (2019). The author studied the effect of employment protection regulation on the performance of the labor market. The first to examine the impact of employment protection legislation on job and worker flow were Davis and Haltiwanger (1999), Davis et al. (1998), and Davis et al. (2006). Their studies are significant as they present new methodologies for measuring job

creation and job destruction. The studies were built based on establishment-level employment observations that measure net rates of job creation and job closures.

The first to start this research at the level of OECD countries was Grubb and Wells (1993). Their study is specific as they were the first to include some dimensions in the study, from the minimum wage, collective agreements, etc. Nickell (1997) found that there is a strong relationship between employment protection regulation and a high level of unemployment in Europe. He highlights that strict employment protection regulation leads to the rigidity of the labor market in Europe. The consequence of the implementation of those rules is high unemployment. The opposite, in America, the labor market is flexible. This is a consequence of less strict rules than in Europe. The result of such a measure is a low unemployment rate.

Siebert (1997) also found that increasing the employee protection regulations, such as tightening layoff restraints, and increasing severance pay in the case of closings both by acts of legislation and by the judicial system and the like, caused an increase in the rigidity of the European labor market. The consequence of that is an increase in the duration of unemployment. The author concludes that higher rigidity is strongly positively associated with a high unemployment rate. Blanchard and Portugal (2001) point out that when studying the link between employment protection regulation and unemployment, the size of companies must also be taken into account.

In addition, Blanchard and Portugal (2001) point out that stricter regulations are associated with a low fluctuation rate of workers and jobs and a longer unemployment duration. Gómez-Salvador et al. (2004) show that firm and sectoral characteristics are important determinants of job flows. When taking into account a feature of firms and sectoral characteristics, the employment protection regulation leads to reduced job creation.

Gómez-Salvador et al. (2004) did not find that there is a statistically significant correlation between employment protection regulation and job destruction. Kiyotaki and Lagos (2007) have studied how different characteristics of labor markets, like worker transition rate, rate of job flow, worker flow, duration of unemployment and job tenures, the changes in incomes were generated by displacements and/or workers changing jobs, linked with the employment protection regulation. They found that the importance of that link depends on the specific sector and country.

Bruil et al. (2010) found that the study's findings depend on how labor market flows are measured, i.e., as they are defined. More precisely, they discovered that this depends on what is meant by the minimum size and length of a job, i.e., whether only concluded labor contracts are counted under the job or vacancies are also included. Similar papers were published by Bassanini and Marianna (2009), Haltiwanger and Vodopivec (2002, 2003), Haltiwanger et al. (2008), Hijzen et al. (2010), etc. They investigated a relationship between worker flow rates and job flow rates. Fujita and Nakajima (2016) showed that the possibility of transition from job to job has to be taken into account when studying worker flows and job flows. This allows the cyclic characteristics of both flows to be captured.

Contrary to the above studies, the research conducted by the OECD (2004) indicates that strict employment protection reduces flows into and out of unemployment. The results of this research show that stricter employment protection regulations are linked with a lower inflow unemployment rate and that there is no statistically significant relationship with outflow from unemployment. Fella (2000) states that promoting cooperation between workers and their employers through building stable employment relationships as a consequence of higher employment protection can increase total employment. A consequence of this is enhanced productivity as a result of enhanced investment in employed workers and human capital.

Consistent with this view, Belot et al. (2002) state that in conditions where there is no protection of employees, employees would invest very little in their training, which is specific to the company, because they could be fired at any time. So investing in training will not pay off them. The consequence is low productivity. Otherwise, they will be motivated to invest in their training. The result will be productivity growth. They conclude that the growth of costs related to the dismissal of employees can be compensated by the positive effects of investing human capital. In this way, not only does productivity increase in the company, but the negative effects of increasing the strictness of employee protection regulations on job creation are partially offset.

Hethey-Maier and Schmieider (2013) warn of caution when accepting the results of the above studies. They point out that the bias in the results stems from poor data classification. They drew their conclusions based on research conducted on the example of the German Establishment History Panel.

In the last decade, Africa has experimented with high levels of growth, however, there are still governance weaknesses. This means that the debate on the determinants of African growth is central for economists and scholars. Economies in transition — emerging and developing — are experiencing a certain socio-economic dynamism and will have new challenges to face in the future (Casagrande & Dallago, 2023).

Having in mind the previously mentioned studies and their findings, no clear conclusion can be drawn regarding the strength and significance of the link between employment protection regulation and unemployment. Hence, this study aims to examine whether strict measures affect the increase or decrease of the unemployment rate in selected COMESA countries. Since the authors are not aware of the research that had selected countries as the subject of the research, the importance of this study is reflected in the fact that the research is conducted using a dynamic panel model.

3. RESEARCH METHODOLOGY

For the processing of accurate and reliable data, the work required many models and test regressions, which were done through the program Stata (statistical software for data science), and IBM Statistical Package for the Social Sciences (SPSS) (software for advanced statistical analysis), using different models and tests, until the most suitable model, depending on the testing needs of

the variables. But the main models that have been used in this paper are the fixed effects regression model and random effects regression model, GMM model, Hausman test, endogeneity test, matrix correlation analysis, stationarity examination with ADF test, and Breusch-Pagan test.

The research examines 19 members of COMESA and 5 ex-members, for the period from 2007 to 2021. The data were collected from COMESA statistics. A panel data approach was used. This method was used for the reason to discover whether there is any pattern in the data collected between states and during time. The *unemployment rate* is the dependent variable. It is used as a proxy for unemployment. We have used annual data. This is because the regulation about employment did not change so often. In other words, changes in the legislation do not happen so fast and frequently, as evidenced by the collected data on employment protection regulations.

The impact of the overall employment protection regulation on unemployment primarily depends on its three components: rules that determine the protection against individual dismissal, rules that determine the protection against collective dismissals, and rules that regulate temporary forms of employment. For those reasons, for purposes of this study, three indicators of strictness of employment protection regulation were taken as independent variables: 1) *indicator of strictness of employment protection* — collective dismissals; 2) *indicator of strictness of employment protection* — individual dismissals (regular contracts); 3) *indicator of strictness of employment protection* — temporary contracts. All three indicators are synthetic indicators that incorporate a larger number of sub-indicators.

For example, the first indicator measures the strictness of the procedures required and the social cost in case of collective dismissals. The second indicator takes into consideration conditions and procedures for initiating and implementing the dismissal process, the amount of severance pay, and the manner and conditions of payment of severance pay, etc. The third indicator measures the restrictions related to forms of temporary employment, taking into account the types of work.

A large number of panel estimators are available to researchers to estimate the relationship between employment protection regulation and unemployment. The choice of estimators depends primarily on the type of collected data and on its variation between countries and over time. Since most of the variability in the employment protection regulation arises from differences between countries, rather than changes in the rules over time, the use of the pooled ordinary least squares (OLS) method is not be reasonable choice. Pooled OLS takes into account variations between countries, but every successive observation for each country is considered as independent.

A consequence of this is the neglect of important information. The better solution is the use of the fixed effects or random effects estimator. The first is based on assumptions that the differences across countries may be captured by a fixed effect. The second estimator assumes that differences across countries may be captured as random effects. In other words, the use of fixed effects or random

effects methods is justified. For this kind of research, Heckman and Pagès (2000) suggest the using random effects method. They justify this by the fact that the estimates obtained by the fixed effects method probably will be imprecise because they do not take into account the cross-section variation.

That means that these estimates do not take into account the cross-country variation in the strictness of the employment protection regulation. Radivojevic and Jovic (2017) and Moundigbaye et al. (2018) point out that if there is a suspicion that differences between countries may affect employment protection legislation, then the use of the random effects method is necessary. The use of the random effects method allows the inclusion of dummies for countries in the model. Having in mind the above, the random effects method was used for this study. It is important to point out that the estimators were chosen keeping in mind the results of the endogeneity test. The endogeneity was tested using the Hausman test. The results of the endogeneity test show that there are no endogeneity variables (p-values: 0.372, 0.434, 0.110, retrospectively for variables *scd*, *sid*, and *tc*).

Another method by which the paper could be carried out is qualitative research methods. They delve deeper into understanding the underlying reasons, opinions, and motivations behind certain phenomena. In the context of employment protection regulations and their impact on unemployment, using qualitative methods would involve a more detailed exploration of the lived experiences, perceptions, and interpretations of stakeholders involved. This could mean conducting in-depth interviews with policymakers, employers, union leaders, and even employees to gauge their perspectives on the effects of specific regulations. Narratives could provide insights into how these regulations play out in real-life scenarios, going beyond mere numbers to uncover the intricacies of labor market dynamics.

The model whose parameters are estimated using the estimator described above can be mathematically represented as follows:

$$unr_{i,t} = \alpha_1 + \beta_1 scd_{i,t} + \beta_2 sid_{i,t} + \beta_3 tc_{i,t} + \varepsilon_{i,t} \quad (1)$$

where, *unr* is the unemployment rate; *scd* expresses the indicator of strictness of employment protection – collective dismissals; *sid* is the indicator of strictness of employment protection – individual dismissals (regular contracts), and *tc* is the indicator of strictness of employment protection – temporary contracts; The subscript *t* corresponds to the examined period and subscript, *i* – to the examined country.

4. RESULTS

Table 1 reported the results of the descriptive statistics. It can be seen that the unemployment rate ranges from 1.014% to 30.467%. The large discrepancy between the minimum and maximum values in the unemployment rate indicates large differences between the selected countries. Confirmation of this can be found in the value of the standard deviation (446.4%). The maximum value of the unemployment rate of almost 30.5% indicates

that some countries face a major unemployment problem. An average unemployment rate of 12.05% indicates that most of the countries in the sample are not successfully facing this problem.

Table 1. The summary descriptive statistics of collected data

Variable	Mean	Minimum	Maximum
<i>unr</i>	9.721	1.014	30.467
<i>scd</i>	2.931	0.000	4.875
<i>tc</i>	1.641	0.250	4.00
<i>sid</i>	2.237	0.587	4.416
Variable	Std. Dev.	Skewness	Ex. kurtosis
<i>unr</i>	4.464	1.990	4.703
<i>scd</i>	0.992	-0.841	1.548
<i>tc</i>	0.825	0.671	0.050
<i>sid</i>	0.730	0.108	0.494

Source: Authors' calculations using Stata 16.

The analysis of descriptive statistics of the variable *scd* indicates the existence of large differences between countries in terms of treatment of this issue, from the fact that in some countries there are almost no regulations dealing with this issue, to countries where special attention is paid to the strict regulations on collective dismissals. A value of standard deviation of variable *scd* of about 100% suggests this conclusion. The situation is similar regarding the other two indicators. However, it is important to mention that in the case of regulations concerning protection against collective dismissals, a larger number of countries strive to relax these regulations, while in the case of regulations concerning temporary contracts tend to regulate this area in as much detail as possible.

To identify a potential problem of multicollinearity in the next step, an analysis of matrix correlation was conducted. The matrix correlation is presented in Table 2. As it can be seen from Table 2, there is no strong correlation between selected variables.

Table 2. Matrix correlation

Variable	<i>unr</i>	<i>scd</i>	<i>tc</i>	<i>sid</i>
<i>unr</i>	1	0.097	0.178	0.112
<i>scd</i>		1	0.18	-0.080
<i>tc</i>			1	0.383
<i>sid</i>				1

Source: Authors' calculations using Stata 16.

The next step in panel data analysis is to examine stationarity. For this purpose, the ADF test was used in the paper. The results of the ADF test are shown in Table 3 and they show that no one variable suffers from non-stationarity.

Table 3. The results of the ADF test

Variable	ADF	
<i>unr</i>	Level	0.004
	1st difference	0.000***
<i>scd</i>	Level	0.000***
<i>tc</i>	Level	0.000***
<i>sid</i>	Level	0.000***

Note: *** indicate significance at 1%.

Source: Authors' calculations using Stata 16.

The results of using the random effects estimator are given in Table 4.

Table 4. The parameters estimations by the random effects and fixed effects methods

<i>The random effects method</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>Z</i>	<i>p-value</i>
Constant	14.513	1.967	7.379	< 0.0001***
<i>scd</i>	-0.130	0.431	-0.303	0.762
<i>tc</i>	-1.529	0.470	-3.257	0.001***
<i>sid</i>	-1.774	0.660	-2.686	0.007***
Joint test on named regressors — Chi-square (3) = 24.292 (2.17e-05)				
Breusch-Pagan test — Chi-square (1) = 889.083 (2.3e-195)				
Schwarz criterion — 2242.792				
Hausman test — Chi-square (3) = 24.652 (1.82e-05)				
<i>The fixed effects method</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>r-ratio</i>	<i>p-value</i>
Constant	18.8782	2.031	9.296	< 0.0001***
<i>scd</i>	-0.082	0.493	-0.166	0.867
<i>tc</i>	-2.258	0.502	-4.496	< 0.0001***
<i>sid</i>	-3.25	0.787	-4.137	< 0.0001***
Test for different group intercepts — P (F(23, 333) > 32.47) = 4.57e-71				
<i>One step GMM</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>r-ratio</i>	<i>p-value</i>
Constant	12.281	2.031	9.296	< 0.0001***
<i>scd</i>	-0.062	0.493	-0.166	0.867
<i>tc</i>	-1.371	0.502	-4.496	< 0.0001***
<i>sid</i>	-4.008	0.787	-4.137	< 0.0001***

Note: *** indicate significance at 1%.

Source: Authors' calculations using Stata 16.

The results of the estimation of parameters by using the random effects method show that there is a statistically significant and negative correlation between the regulations concerning the protection against individual dismissals and the regulations concerning temporary forms of employment, with one side, and unemployment, on the other side. These findings are consistent with the findings of Fella (2000) and the OECD (2004). The obtained results indicate that any tightening of regulations concerning protection against individual dismissals of one percent measured through the indicator of strictness of employment protection — individual dismissals lead to a reduction in unemployment of 1.774%.

This result can be justified by the fact that as a consequence of compliance with the regulations on individual dismissals, there is an increase in the cost of dismissal of workers, and in such circumstances, employers find it harder to decide to dismiss employees. On the other hand, in such conditions, employers are expected to have a hard time deciding to create new jobs, but when creating new jobs, they are also guided by the hope that the negative effects of tightening these regulations will be offset through the establishment of stable and long-term relationships with employees and productivity growth as consequences invest in employees training.

Also, any tightening of regulations related to the regulation of temporary forms of employment of 1% measured through *t* indicator of strictness of employment protection — temporary contracts leads to a reduction in the unemployment rate of 1.529%.

On the other hand, the results of the parameter assessment imply that there is no statistically significant correlation between the regulations concerning protection against collective dismissals and unemployment. This means that the tightening of these regulations does not affect unemployment. This finding is a bit surprising. Justification can be found in the fact that these regulations rarely change, so it is difficult to determine the true impact of these regulations on the change in the unemployment rate by applying panel data.

The joint test on named regressors results show that our model is fit, while the Breusch-Pagan test results show that the choice of random effects model is a better choice than the pooled OLS method. However, the results of the Hausman test show that the fixed effects method is a better choice compared to the random effects method. For that reason, the fixed effects method was employed also in the paper. The estimates of the parameters of Eq. (1) using the fixed effects estimator are shown in the second part of Table 4.

The results of the application of the fixed effects method confirm the previous findings. The only difference is in the values of the coefficient with the variables *sid* and *tc*. The results of the application of the fixed effects method indicate a stronger impact of the tightening of regulations for the protection of employees from individual dismissals and regulations concerning temporary forms of employment.

5. DISCUSSION

The question of whether African markets can grow and evolve beyond their colonial trading roots is a matter of both historical significance and contemporary relevance. Africa, with its rich resources and emerging middle class, possesses untapped potential to be a significant player in the global marketplace. Yet, its colonial trading past casts a long shadow, presenting both structural and psychological challenges to overcome (Ben Yedder et al., 2023). Can Africa chart a new path, independent of its colonial ties, while fully embracing and integrating into the global economic landscape, as other regions have? There is no denying the presence of significant data limitations when examining African markets. Such limitations are common to many studies focusing on the continent. Various factors, including inconsistent data collection, infrastructure challenges, and historical inadequacies in research investment, contribute to this data insufficiency. In response, this study employs regression models and exercises rigorous due diligence to mitigate these data gaps.

These efforts, while not wholly eliminating the limitations, strive to ensure a level of accuracy and reliability in the analysis (Akuffo-Kwapong, 2023).

The heterogeneity among African nations in terms of employment protection regulations is a noteworthy observation. This variability is often due to intrinsic differences between countries and their specific historical, cultural, and economic contexts, rather than temporal shifts in policies. In light of this, the pooled OLS method was not deemed appropriate. This method, despite accounting for inter-country variability, views subsequent data points for a country as distinct entities, potentially skewing analysis. Given this, the study leans heavily on advanced econometric tools and software platforms, such as EViews, RStudio, Python, SAS, Tableau, PowerBI, NVivo, STATGraphics, and SmartPLS. Incorporating methods like the vector autoregression (VAR) model, multifactorial econometric models, and the Lagrange Multiplier (LM) test for introducing new variables enriches the depth of the analysis.

As we look to the horizon, it is pivotal to broaden our analytical scope. We advocate for the use of diverse analytical tools and models to facilitate comparisons not just within Africa, but extending to other continents such as Europe, Asia, Australia, and the Americas. Such cross-continental analyses will not only enhance our understanding of African markets in the global context but also foster international collaboration and knowledge exchange.

6. CONCLUSION

Interest in African emerging markets is growing at least for three reasons: 1) governance in developed and developing countries, especially in Eastern and Southern Asia, is concerned about ensuring the supply of strategic raw materials to manufacturing industries; 2) the so-called “African lions” — Ethiopia, Ghana, Kenya, Mozambique, Nigeria, and South Africa — have experienced fast growth (International Monetary Fund [IMF], 2019); 3) it expects that the African Continental Free Trade Area Agreement (AfCFTA) will increase income in countries by at least 9% by 2035 (The World Bank, 2020, 2022). Multilateral and free trade agreements will be important for the success of African countries, as a consequence of the economic and geopolitical processes that are affecting the globalized world.

Although this replication study can marginally contribute to expanding the specialized literature on African growth, nevertheless, it introduces an element of novelty by analyzing African growth in relation to specific openness degrees proxied by merchandise imports and exports with the clusters of developed and developing countries as defined by the World Bank Group researchers. Therefore, based on the time-series data collected and the estimation methodology used, our results show the variables that significantly influenced African growth from 2010 to 2019.

The results of the parameter estimation using the random effects method show that there is a statistically significant and negative correlation between the regulations concerning protection from individual dismissals and the regulations concerning temporary forms of employment, on the one hand, and unemployment, on the other.

The results obtained show that each tightening of the regulations regarding the protection against individual layoffs of one percent measured through the indicator of the strictness of employment protection — individual layoffs leads to a decrease in unemployment of 1.774%. Namely, the increase in severance pay and severance pay reduces the unemployment rate, but also the youth employment rate, which has little or no effect on unemployment. Endogeneity was tested using the Hausman test.

The results of the endogeneity test show that there are no endogeneity variables (p-values: 0.372, 0.434, 0.110, retrospectively for the variables *scd*, *sid*, and *tc*).

From Table 1 it can be seen that the rate of *unr* varies from 1.014% to 30.467%. The large discrepancy between the minimum and maximum values in the unemployment rate indicates large differences between the selected countries. Confirmation of this can be found in the standard deviation value (446.4%).

The peak unemployment rate of nearly 30.5% indicates that some countries face a major unemployment problem. An average unemployment rate of 12.05% shows that most of the countries in the sample are not successfully dealing with this problem. Two evaluators, fixed effects and random effects, were used for the research needs. The results of the estimation of the parameters of both evaluators show that there is a statistically significant relationship between the rules concerning protection against individual dismissals and temporary forms of employment and the unemployment rate.

While the paper does not reveal that there is a statistically significant influence of the rules related to collective dismissals. This is explained by the fact that the value of the indicator describing these regulations does not change so often, so it is difficult to detect its true effect on the change in the unemployment rate by applying panel analysis.

The main findings highlight that the surge in African emerging markets can be attributed to the strategic raw materials demand by developed and developing nations, rapid economic expansion in the so-called “African lions” countries, and the promising potential of the AfCFTA to boost national incomes. Additionally, multilateral and free trade agreements are set to play an essential role in determining the future success and growth trajectories of African nations in a globalized world.

Delving deeper into the intricacies of employment regulations and their economic implications, we found a significant negative correlation between certain employment regulations and unemployment rates. Stricter regulations surrounding individual layoffs, particularly the nuances of severance pay, lead to decreases in unemployment rates.

Implications of the results suggest that for policymakers, it is crucial to strike a balance between employment regulations and economic growth. Meanwhile, for investors and businesses eyeing the African market, these findings provide a roadmap to navigate opportunities and challenges effectively.

However, every research has its set of constraints, and ours is no exception. Limitations of

our study arise primarily from data constraints, a common issue in African-centric studies. Additionally, our focus on specific African nations might not capture the intricate economic tapestry of the entire continent.

Looking ahead, perspectives for future research hint at the need for comparative analyses with

continents such as Europe, Asia, and America to foster a better understanding of global economic dynamics. Moreover, considering the rules related to collective dismissals do not alter frequently, more nuanced research methodologies might be better equipped to shed light on their impact.

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