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The Evaluation of Türkiye's Labour Market Regulations Together with Its Macroeconomic Performance with a Comparison of Some Selected Countries' Performances

Bazı Seçilmiş Ülkelerin Performanslarıyla Karşılaştırmalı olarak Türkiye'nin İşgücü Piyasası Düzenlemelerinin Makroekonomik Performansıyla Birlikte Değerlendirilmesi

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Abstract

The relationship between labour market regulations and macroeconomic performance is a complex issue in the economics literature. The study evaluates the issue for Türkiye for the period of 1980-2021 by using the original Macroeconomic Performance Index (MPI) and the Labour Market Regulations Index (LMRI). The MPI, measured by the Magic Hypercube method, incorporates economic growth, current account, inflation, and unemployment. LMRI is a composite index reflecting labour market regulations' flexibility or rigidity based on seven dimensions such as minimum wage, hiring and firing regulations, flexible wage determination, hour regulations, costs of worker dismissal, conscription, and foreign labour. Overall, it can be said that during 1980–2021, the macroeconomic performance of Türkiye is mostly unrelated to the labour market regulations; namely, it seems that the MPI of Türkiye does not depend on LMRI at all. At least, it can be said that there seem to be no findings confirming the neoclassical view's expectations; rather, the opposite one seems valid. When a comparison of some selected countries' performances of MPI and LMRI for the period of 1990-2021 is done similar interpretations were reached at.

Keywords: *Labour Market Regulations, Macroeconomic Performance, Magic Hypercube, Türkiye.*

Öz

İşgücü piyasası düzenlemeleri ve makroekonomik performans arasındaki ilişki, ekonomi literatüründe karmaşık bir konudur. Çalışma, orijinal Makroekonomik Performans Endeksi (MPE) ve İşgücü Piyasası Düzenlemeleri Endeksi (İPDE)'ni kullanarak konuyu Türkiye için 1980-2021 dönemi için değerlendirmektedir. Sihirli Hiperküp yöntemi ile ölçülen MPE, ekonomik büyümeyi, cari hesabı, enflasyonu ve işsizliği içerir. İPDE, asgari ücret, işe alım ve işten çıkarma düzenlemeleri, esnek ücret belirleme, saat düzenlemeleri, işçi çıkarma maliyetleri, zorunlu hizmet ve yabancı işgücü gibi yedi boyuta dayalı olarak işgücü piyasası düzenlemelerinin esnekliğini veya katılığını yansıtan bir bileşik endekstir. Genel olarak, denilebilir ki 1980-2021 yılları arasında, Türkiye'nin makroekonomik performansı çoğunlukla işgücü piyasası düzenlemeleri ile ilgisizdir; yani, Türkiye'nin MPE'sinin İPDE'ye çok da bağlı olmadığı görülmektedir. En azından, neoklasik görüşün beklentilerini doğrulayan hiçbir bulgu olmadığı söylenebilir; aksine, tam tersi geçerli gibi görünmektedir. Bazı seçilmiş ülkelerin MPE ve İPDE performanslarının 1990-2021 dönemi için kıyaslaması yapıldığında benzer çıkarımlara varılmıştır.

Anahtar Kelimeler: *İşgücü Piyasası Düzenlemeleri, Makroekonomik Performans, Sihirli Hiperküp, Türkiye.*

JEL Codes: *E60, J01, J80.*

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Introduction

There has been a hot debate on the relationship between labour market regulations and macroeconomic performance going back to the classical school, then shaped by the neoclassical labour market theory. It is, indeed, a complex and controversial issue in the economics literature. On one side of the argument, several studies argue that the implementation of flexible Labour Market Regulations (LMR) can enhance macroeconomic performance by increasing the efficiency and adaptability of the labour market, reducing labour costs and rigidities, and stimulating employment and growth. On the other hand, several studies argue that stringent labour market restrictions can improve macroeconomic performance through the augmentation of worker security and bargaining strength, the promotion of human capital and innovation, and the stabilization of income and demand (Belot et al., 2014).

LMR are the rules and institutions that regulate and govern the complex employment relationship between employees and employers. LMR have a multifaced impact on the labour market since it is directly concerned with factors related to the hiring and firing process, the wage-setting mechanism, the working hours and conditions, social security and protection, and labour mobility and migration (Ernst et al., 2022). LMR are commonly regarded as a balance between efficiency and equity, as they possess the capacity to have both favourable and unfavourable consequences for a nation's economic performance and social well-being. On the one hand, LMR have the potential to augment equity or fairness within the labour market by protecting the fundamental rights and interests of the workers, guaranteeing the minimum standards of living and working conditions, and mitigating instances of inequality and discrimination. On the other hand, LMR have the potential to have the adverse effects on the efficiency and productivity of the labour market. This is primarily attributed to the imposition of costs and barriers on employers, which are accepted to restrict the flexibility and adaptability of the labour market to reply to the fluctuations in demand and unforeseen shocks. As a result, these regulations may discourage the creation of employment opportunities and ultimately hinder economic progress. Moreover, the macroeconomic performance of a country is a multifaceted concept that encompasses multiple aspects of economic activity, including economic growth, the current account, inflation, and unemployment. These dimensions serve as indicators of a nation's economic output levels, external balance, price stability, and labour utilization. Several factors contribute to shaping a country's macroeconomic performance, such as fiscal and monetary policies, trade and investment flows, productivity and competitiveness, as well as institutional and structural reforms. These elements collectively influence and define the overall economic health and trajectory of a nation.

Over the past four-decade period, Türkiye has undergone substantial economic and political crises, along with comprehensive reforms and transformations, which have left a noticeable impact on both the country's labour market and its broader economic landscape. Furthermore, Türkiye has also encountered various challenges and opportunities, such as globalisation and integration, demographic and social changes, and environmental and technological developments that have affected her labour market and economy. The research employs two comprehensive indicators to handle the labour market regulations and the macroeconomic performance of Türkiye. The first indicator is the Labour Market Regulations Index (LMRI), which is a composite index that reflects the degree of flexibility or rigidity of the labour market regulations in Türkiye based on seven dimensions: Labour regulations and minimum wage, hiring and firing regulations, flexible wage determination, hour regulations, costs of worker dismissal, conscription, and foreign labour. The second indicator is the macroeconomic performance index measured by the Magic Hypercube method, which is a multidimensional approach that encompasses four aspects of economic performance: Economic growth, current account, inflation, and unemployment. Through this examination, the study aims to evaluate Türkiye's LMRI together with her MPI for the period of 1980–2021 with a comparison of the related performances of some selected countries for the period of 1990-2021 by using the original MPIs calculated for this research and the LMRIs together. In this regard, the study is organized as follows. After the introduction, the theory framework and a brief literature review are tackled first and then in the main part, Türkiye's Economic Performance in the relevant period is evaluated in terms of LMRI and MPI, respectively, and then together with a comparison of the related performances of some selected countries for the period of 1990-2021 before the conclusion.

1. The Theory Framework

1.1. Macroeconomic Performance Index

Price stability, financial stability, economic growth, employment, and the balance of payments are all examples of economic policy goals. While some of these objectives complement one another, others contradict one another; in other words, while working towards achieving one aim, another can be reached simultaneously or can be drawn away. For example, when economic growth is achieved, employment normally increases, yet when price stability is sought, growth and employment may decrease to a certain level, which presents difficulties in assessing a country's overall economic performance, especially when objectives conflict with each other. In such a circumstance, a single and comprehensive

measure of the overall economic performance is needed to provide a summary and a comparable index of the economic performance of different countries, regions, or periods. Composite indicators (CIs) are the right tools for this purpose (Saltelli, 2007).

CIs are increasingly recognized as useful tools for policy analysis and public communication, as they can simplify and compare complex issues across different countries and fields. CIs have the ability to measure and rank the performance of countries in terms of innovation, human development, corruption, or women's empowerment, etc. Moreover, CIs can be used for various purposes, such as identifying trends and patterns, drawing attention to particular issues, setting policy priorities, and benchmarking or monitoring performance. CIs can also stimulate the search for better data and indicators and foster dialogue and learning among policymakers and the public. Nevertheless, there are several limitations and obstacles associated with CIs. These include the selection and weighting of the indicators, the aggregation and normalisation methods, and the interpretation and communication of the results. Therefore, CIs should be constructed and used with caution and transparency, and they should be accompanied by robustness and sensitivity analysis. Moreover, CIs should also measure multidimensional concepts that cannot be captured by a single indicator and that are relevant and meaningful for the policy context and the stakeholders, such as competitiveness, industrialisation, sustainability, single market integration, and knowledge-based society (OECD, 2008: 13). As a result, analysing a country's economic performance using a single variable such as GDP per capita does not provide a clear view of the overall economy; hence, the concept of an index that includes the relevant macroeconomic indicators becomes more meaningful.

Arthur Okun introduced the concept of the "Misery Index" or "discomfort index" as an initial attempt to synthesize inflation and unemployment into a single measure. This index gained a substantial importance during the 1960s, '70s, and '80s, a period marked by elevated levels of inflation and unemployment in many Western countries. Over time, it was developed to encompass additional factors such as bank lending rates. Despite a decline in the use of Okun's Misery Index during the low inflation and unemployment era of the 1990s, recent discussions have revived its relevance due to the resurgence of inflation and unemployment in industrialized nations (Clemens et al., 2022: 2). However, apart from being only two-dimensional (including only two variables), the Misery Index aggregates unweighted unemployment and inflation rates which means that the relative significance of each variable is undefined, therefore, by giving unemployment and inflation different weights, can result in different trends. In the 1960s, for example, a high weight on unemployment caused the index to fall, while a high weight on inflation caused it to rise. Moreover, a limitation of the Misery Index lies in its two-dimensional nature, incorporating only two variables (Asher et al., 1993: 59). As an alternative to Okun's Index for assessing macroeconomic performance, the Calmfors Index has been introduced by Calmfors and Driffill in 1988, which offers a distinct perspective. This index is characterized by the disparity between the unemployment rate and the normalized trade balance (adjusted by GDP). However, similar to the Misery Index, the Calmfors Index is also two-dimensional in nature, with each of its components having equal unitary weights (Lovell et al., 1995: 508).

Melyn and Moesen (1991) raised concerns regarding the equally weighted average method utilized in the Okun and Calmfors Driffill indexes, which means assuming equal importance of the variables involved. In response, the authors developed the Leuven Macroeconomic Performance Index (LIMEP). LIMEP incorporates four variables, two stages, and varying weights. These variables include the unemployment rate, GDP deflator change rate, real GDP growth rate, and current account balance/GDP ratio. The LIMEP calculation approach is derived from the Data Envelopment Analysis (DEA) framework, first proposed by Charnes, Cooper, and Rhodes in their seminal works published in 1978, 1979, and 1981. Following that, many studies utilizing the DEA model appeared in the literature. Lovell (1995) evaluated the performance of ten Asian countries using four indicators: The unemployment rate, price stability (inflation), the growth of GDP per capita, and the trade balance for the period of 1970–1988. Furthermore, Lovell et al. (1995) used a DEA model to evaluate the macroeconomic performance of European and non-European OECD countries by creating two indices: A first index capturing the four traditional single indicators, and the other measure by adding two environmental indicators (carbon and nitrogen emissions).

Hanke (2018) introduced a modified version of the "Misery Index" by subtracting the annual increase in GDP per capita from the sum of unemployment, inflation, and bank loan interest rates. This adjusted index provides an alternative perspective on assessing economic well-being by considering the net impact of these economic indicators on the per capita GDP growth.

In 1971, Kaldor, during his tenure as a special advisor to the British chancellor, authored an essay in which he presented a novel framework for evaluating macroeconomic performance. This framework introduced a set of targets referred to as "economic policy objectives." Kaldor, in his essay, was mainly concerned about the economic situation that Great Britain was experiencing at the time, as it recorded the slowest growth rate among the major industrialized countries in Europe. According to Kaldor, following the end of the Second World War, governments commenced the declaration of the

objectives associated with full employment, balance of payments, economic growth, and wage increase policy. These objectives were considered the foremost priorities in economic policies at the time, urging Kaldor to evaluate England's macroeconomic performance based on these criteria. He further considered that successful management is the one that can achieve the relevant targets simultaneously.

As Kaldor hasn't used any graphical illustrations or quantitative instruments in his initial work, the name "Magic Square" was coined to this approach by the German politician and minister of the economics of the Federal Republic of Germany Karl Schiller (1972) who presented a graphical representation of Kaldor's idea. After that, the wide use of this approach began starting from the mid-seventies, especially by the OECD countries, with minor modifications applied in order to be effective in evaluating the performance of a particular country or to compare the performance of several countries for a specific period of time.

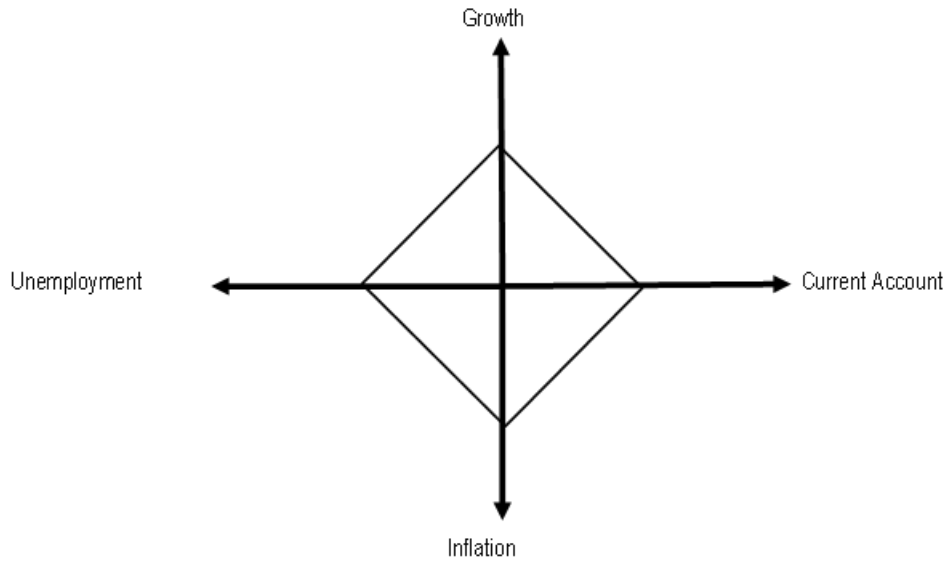

Figure 1. Macroeconomic Variables and Magic Square Used in the Kaldor Approach

Source: Bernard et al., 1988.

Bernard et al. (1988) illustrated the magic square diagram in its original configuration, as in Figure 1, applying slight adjustments to the four variables and plotting them in the four cardinal directions: North, south, east, and west. Specifically, on the horizontal axis, the rightward direction from the origin denoted the average surplus (+) or deficit (-) on the current account as a percentage of GDP, while the leftward direction represented the average unemployment rate as a percentage of the active population. On the vertical axis, upward movements from the origin indicated the average real GDP growth, whereas downward movements represented the inflation rate.

In the original MS, the optimal values were initially from 0% to 10% GDP growth, the trade balance with an interval of -2% to 4%, inflation from 10% to 0%, and the unemployment rate from 12% to 0%. It's noteworthy that according to this approach, the countries that achieve the highest percentages in all four indicators are the ones with the best economic performance, or what is called "Wonderland". Medrano-B and Teixeira (2013) criticised this approach for not providing a true indication as it does not use a uniform scale of the axes; thus, to construct an appropriate MS, all four scales must be adjusted to be homogeneous by normalizing the graphic to a unit area. They presented the variables as follows: γ, τ, φ, and ζ, for growth, current account, inflation, and unemployment, respectively; additionally, to show the performance of any country within the MS, it should be a diamond-shaped rather than a square. This geometric structure allows the interior figure to be quantified as a ratio of the unified MS. As a result of these advances since Kaldor's original study, a new term, "the indicator of economic welfare", was introduced.

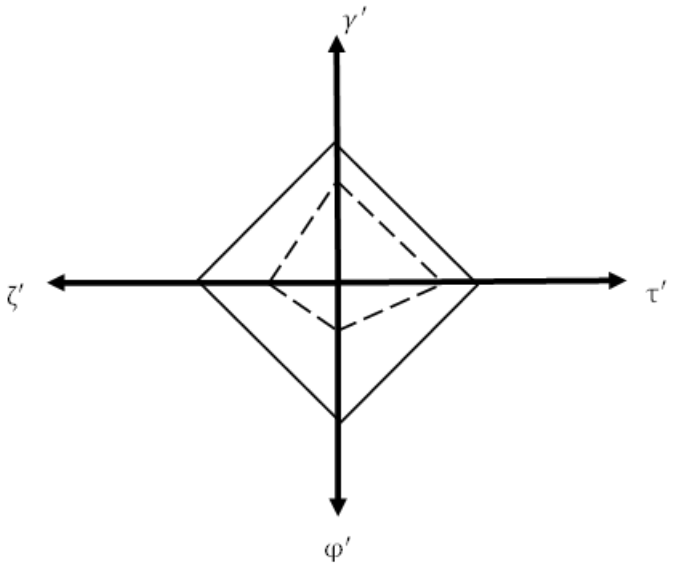

Figure 2. The Magic Square (MS)

Source: Saavedra-Rivano and Teixeira, 2017: 91.

Saavedra-Rivano and Teixeira (2017) noted that despite the MS's sensitivity to the ordering of the variables all along the verticals, the approach completely ignored this because numerical calculations show that different orderings of the four variables produce different values for the index of welfare. The authors introduced a mathematical approach called the Magic Hypercube (MH) as an alternate technique to overcome the oversight: An index that is independent of variable ordering and allows for comparisons. The "Magic Hypercube" (MH) is a geometric construct with an associated quantitative index of the multi-dimensional volume. It consists of an n-dimensional parallelotope with edges along the axes going from the origin to the value of the corresponding variable, and the n-dimensional volume is the product of the values of all variables.

According to the relevant approach, the macroeconomic performance index is calculated as follows.

$$\mu = \gamma' \cdot \tau' \cdot \varphi' \cdot \zeta' \quad (1)$$

As can be seen, the index value calculated with the help of the equation varies between 0 and 1.

$$0 \leq \mu \leq 1 \quad (2)$$

According to these approaches, the index takes the value of 1 in the period when the country has the best macroeconomic performance, while it takes the value of 0 in the period when the country has the worst macroeconomic performance. In the proposed approach, there are no complications when assessing performance across multiple years or when the most unfavourable values for all variables coincide in the same year. However, a significant challenge arises when the worst values for individual variables occur in different years. This scenario introduces the potential for multiple instances of zero values, as the occurrence of the worst value for one variable in a specific year may overshadow positive outcomes from other variables, thereby falsely portraying the country's macroeconomic performance as zero. To overcome this challenge, a systematic solution was developed. When determining the normalized value for the worst-case scenario of a variable in a particular year, the normalized value from the second-worst year is utilized as the baseline. This baseline is then multiplied by a ratio derived from the actual values, specifically the second-worst value over the worst value of the variable. This adjustment ensures that the normalized values accurately reflect the relative distribution of worst-case values across different variables and years, thereby avoiding the issue of multiple zeros.

1.2. Labour Market Regulation Index (LMRI)

The issue of rising youth unemployment in Western European countries during the late 1980s has attracted significant attention within the social, political, and economic arenas. Scholars such as Lazear (1990) and Layard et al. (1991) have extensively attempted to discover the reasons behind this phenomenon. One of the explanations was under the neoclassical labour market theory, which attributed the elevated unemployment rates to stringent labour market regulations that posed obstacles to achieving full employment (Blanchard & Summers, 1986; Lazear, 1990; OECD, 1994).

Throughout the 1990s and the early 2000s, several empirical studies provided support for the neoclassical hypothesis. Justifications for supporting neoclassical theory for greater labour market flexibility revolve around the idea that labour market flexibility is important for both developed and developing countries as it contributes to increase productivity, firm competitiveness, and economic and social development, but the most important one is to lower unemployment (Jha & Golder, 2008). The origin of labour deregulation can be traced to the Washington Consensus of 1989, which is sometimes referred to as market fundamentalism. This consensus carried one primary message: To enhance overall economic performance, therefore, it is vitally important to deregulate the labour market and abolish or reduce labour protections.

Neoclassical theory proclaims that stringent labour market regulations can affect unemployment rates through four channels: (1) Due to stringent regulations, wages exceed workers' marginal productivity in a state of equilibrium, resulting in resource misallocation. (2) High labour market rigidity is indeed a barrier to labour market adjustment in times of fluctuations caused by the business cycle (Jha & Golder, 2008: 1). (3) Rigidity in labour markets creates an economic "rent" from capital to labour, diminishing investor profitability and discouraging investment and economic growth (e.g., collective bargaining schemes and expansionary fiscal programmes to fund public employment), discouraging new investors from injecting more capital and thus haltering economic growth (Calderon & Chong, 2005); (4) Rigid labour regulations prevent the rotation over employment as they protect existing workers while preventing job seekers from entering the job market.

Consistent with these concepts, various European countries have undertaken labour market reforms since the late 1990s (Tridico, 2018). The fundamental aims of these reforms are threefold:

1. The creation of "atypical" jobs, specifically focusing on fixed-term and part-time contracts, primarily aimed to facilitate the integration of young individuals into the labour market.
2. Reduction of hiring and firing costs: This is designed to enable firms to enhance their competitiveness in international markets and to adjust labour demand in response to fluctuations in the business cycle (Zemanek, 2010).
3. Diminution of employment security: With a primary goal to decrease the protection afforded to insider workers (existing workers), thereby addressing labour market segmentation as described by insider-outsider theory **(**Blanchard & Summers**,** 1986; Lindbeck & Snower, 1988). In order to prevent the market from becoming divided into separate groups of insiders and outsiders, this necessitates reducing the security that insider employees enjoy.

As clear evidence of the importance and utility of the CIs and in order to capture the level and the development of labour market flexibility, the Labour Market Regulation Index (LMRI) was developed by the Fraser Institute, which has advantages for two key reasons as follows.

- Comprehensive consideration of changes in labour market institutions: The LMRI enables a holistic assessment of changes in labour market institutions, providing a broader understanding of the overall landscape **(**Liotti, 2020).
- Availability of reliable long-term data: The index offers accessible and reliable data, making it particularly suitable for analysing the extensive shifts in labour market institutions that have occurred over decades, with relevant data available since 1970 (Liotti, 2022).

In the most recent release of the 2023 annual report, the Fraser Economic Freedom of the World Index assesses the extent to which the policies and institutions of nations support economic freedom. This evaluation is based on five key areas: Government Size, Legal System and Property Rights, Sound Money, Freedom to Trade Internationally, and Regulation. Labour market regulation is a specific subcomponent within the Regulation category, comprising seven components:

1. **Regulations concerning labour and minimum wage:** This component assesses labour regulations and minimum wage policies using data from the World Bank's Doing Business and the Economist Intelligence Unit. It considers factors like the prohibition of fixed-term contracts for permanent tasks, the maximum duration of such contracts, and the ratio of the minimum wage to the average value added per worker. The final rating is an average of available sources. Countries that impose limitations on fixed-term contracts, restrict the duration of such contracts, and/or set higher minimum wages tend to receive lower rating.
2. **Hiring and firing regulations**: This component evaluates the restrictions or flexibility in hiring and firing workers. It draws data from the Global Competitiveness Report and the Economist Intelligence Unit's "Restrictiveness of Labour Laws" indicator. The final rating is an average of these sources, where a score of (1)

indicating that the hiring and firing are strictly restricted by regulations, while a score of (7) if employers are flexibly determining these actions.

3. **Flexible wage determination:** This component focuses on how wages are established across countries which is based on the data from the Global Competitiveness Report. Evaluating this aspect on a scale ranging from 1 to 7, where a rating of (1) is assigned when wages are established through a centralized negotiation process, representing the least favourable state. Conversely, a rating of (7) is given when wages are determined independently by individual companies, signifying the most favourable condition.
4. **Hour regulations:** This component analyses regulations related to working hours using information from the World Bank's Doing Business. It considers factors such as restrictions on night and holiday work, workweek length, restrictions on overtime, and average paid annual leave. The rating reflects the number of regulations in place, with the highest score of (10) indicating the fewest restrictions and (0) otherwise.
5. **Costs of worker dismissal:** This component examines the financial implications associated with employee termination. It relies on data from the World Bank's Doing Business report, specifically focusing on the expenses paid due to advance-notice restrictions, layoff payments, and penalty fees imposed when dismissing a worker who has been employed for a period of 10 years. The component is rated on a scale from (0) to (10), where a higher score signifies a greater degree of flexibility in terms of the financial consequences associated with worker dismissal.
6. **Conscription:** This component evaluates the existence and duration of military service within nations. Ratings are determined by conscription periods, with extended durations exceeding 18 months receiving the lowest rating of 0. Conversely, a rating of 10 is designated for countries without any form of military conscription.
7. **Foreign labour:** Evaluating the impact of labour regulations on the ability to hire foreign labour this component combines data from the Global Competitiveness Report and the Economist Intelligence Unit's "Hiring of Foreign Nationals" indicator. Ratings range from (1) indicating severe limitations on hiring foreign labour to (7) signifying no restrictions on hiring foreign labour at all.

2. A Brief Literature Review

The relationship between labour market regulations and economic performance has been a subject of considerable interest and debate among researchers. Numerous studies have explored how different regulatory frameworks impact economic outcomes, such as employment and productivity. However, the originality of this study lies in its comprehensive approach to evaluating these relationships through the lens of the MPI and the LMRI and its comparison with other countries'. And regarding the originality of the current research, the literature review is built considering two aspects of the existing literature: the literature related to the MPI and the literature related to labour market regulations LMR and their impact on various economic dimensions as mentioned earlier.

Jha and Golder (2008) emphasise that the mainstream explanation for high unemployment often centres on the rigidity of labour markets, particularly the downward rigidity and the consequent high wages, and that they frequently employ models based on the concept of the Non-Accelerating Inflation Rate of Unemployment (NAIRU), which was developed by Modigliani and Papademos in 1975 to support this claim. NAIRU, which is an improvement of the "natural rate of unemployment" term proposed by Milton Friedman, posits that there is a specific level of unemployment at which inflation remains stable. If unemployment falls below this level, inflation tends to accelerate; conversely, if unemployment rises above this level, inflation tends to decelerate. In this regard, Modigliani and Papademos (1975) underline that the implication of the NAIRU concept is that there is a natural rate of unemployment that cannot be reduced through demand-stimulating measures. Instead, the only viable policy option to reduce long-term unemployment (or the NAIRU) is to address structural issues within the labour market. This involves removing frictions and rigidities, such as minimum wage laws, strict hiring and firing regulations, and other constraints that prevent the labour market from adjusting efficiently (Modigliani & Papademos, 1975). Indeed, The International Monetary Fund (IMF), in its 2003 report, has emphasised the significance of labour market flexibility in Europe using the argument of the NAIRU framework. The IMF (2003) argued that to achieve desired economic growth, European labour market regulations should adopt the flexibility observed in the United States.

Djankov et al. (2003) tried to examine the impact of labour market regulations in 85 countries and concluded that wealthier nations have less stringent work regulations compared to poorer nations and they offer a somehow more generous social security scheme. Furthermore, the study mentions that rigid labour regulations harm labour force participation and increase unemployment rates. Calderón and Chong (2005) using panel data for 76 countries for the

period of 1970–2000, concluded that, in emerging nations, the primary mechanisms through which stricter labour regulations negatively affect growth are the minimum wage and trade unions. Bertola, Blau, and Kahn (2001) attempted to capture the reasons behind the high unemployment rates in OECD countries, taking into account macroeconomic shocks and labour market institutions. The study found a correlation between low unemployment and both wage inequality and low wage levels. Blanchard and Wolfers (2000) examined the interactions between macroeconomic shocks (slowdown in total factor productivity growth, trends in long-term real interest rates, and shifts in labour demand) and labour market institutions for the period of 1960–1998 using the non-linear least squares regression method. The study found that when exposed to negative macroeconomic shocks, protective labour market institutions contribute to higher unemployment.

Marelli, Choudhry, and Signorelli (2013) assess the impact of the LMRI, along with many other explanatory factors, on both youth and overall unemployment rates in OECD countries from 1980 to 2009. The results suggested that, in addition to economic expansion, economic freedom, and active labour market policies, labour market flexibility is a powerful instrument for reducing unemployment and enhancing labour market performance. Adascalitei and Pignatti Morano (2016) analysed the factors and immediate impacts of labour market reforms using data from 110 developed and developing economies between 2008 and 2014. The analysis demonstrates that labour market reforms aimed at reducing regulations tend to cause a temporary increase in the unemployment rate when implemented during periods of economic downturn. However, these reforms have no substantial impact on unemployment when implemented during periods of economic stability or growth. Rafi (2017) employed panel data spanning from 2000 to 2012 for OECD countries. The study aimed to determine the extent of the correlation between the level of flexibility in labour regulations and unemployment. The study indicates that increasing flexibility in labour market regulations across the OECD leads to a significant decrease in both unemployment and worker underutilization. Duval and Furceri (2018) used panel data from 26 developed economies from 1970 to 2014 to evaluate the dynamic macroeconomic consequences of labour and product market reforms on output, employment, and productivity. Their findings suggest that labour market reforms primarily affect employment, but the extent of this impact varies depending on the type of reform and the overall business cycle conditions. Kovaci, Belke, and Bolat (2018) used panel data analysis to examine the influence of labour market restrictions on unemployment in selected OECD nations from 2005 to 2014. The findings demonstrated that the presence of flexible labour market regulations has a significant negative effect on all measures of unemployment, and the higher the labour market flexibility, the lower the unemployment rates. Liotti (2022) conducted an empirical study to examine the correlation between the LMRI and youth unemployment in 28 European nations from 2000 to 2018. The study employed the Pooling Mean Group approach. The analysis revealed that the primary drivers for reducing youth unemployment are increased economic development and enhanced investment in active labour market policy.

Wang and Le (2018) studied the macroeconomic performance of developed economies and developing Asian nations for the periods between 2013 to 2016 and 2017 to 2020. Variables such as real GDP growth, government gross debt, unemployment and inflation rates are used as macroeconomic indicators and the Data Envelopment Analysis method was conducted. The empirical findings show that the United States, Singapore, and Switzerland have achieved the most effective macroeconomic management over time. Daşbaşi, Barak, and Çelik (2019) analysed the MPI of Türkiye from 1990 to 2017 by having utilised the OECD method to implement the Artificial Neural Network technique. According to the OECD method, the unemployment rate remained at 20%, economic growth decreased from 30% to around 27%, and inflation declined from 20% to 17%. The weight of the budget deficit and current account deficit components remained at 20% and 17%, respectively. Switzerland has achieved the most successful macroeconomic management in the given period. Coşkun (2022) examined the macroeconomic performance indicators of Brazil, Russia, India, China, South Africa, and Türkiye (BRICS-T countries) from 2011 to 2020. Macroeconomic performance indicators encompassed variables such as GDP, GDP per capita, exports, growth rate, foreign direct investment, imports, inflation rate, and unemployment rate. The Weighted Aggregated Sum Product Assessment (WASPAS) approach was utilised. Based on the findings, China's macroeconomic performance surpasses that of other countries. Following China, the following nations in order of success are Brazil, Russia, India, Türkiye, and South Africa. Doğan (2022) examined the macroeconomic performance of Türkiye between 2010 and 2020. The analysis involved assessing many indicators such as GDP growth rate, GDP per capita, export-import ratio, FDI inflow, interest rate, inflation rate, and unemployment rate. The study utilised the Criteria Importance Through Intercriteria Correlation (CRITIC) and Additive Ration Assessment (ARAS) methodologies. The results indicated that Türkiye had the highest macroeconomic performance in 2012, followed by 2015 and 2013. The year of 2020 exhibited the most inferior performance. Al and Demirel (2022) examined Türkiye's macroeconomic performance throughout 2002-2019. They conducted the TOPSIS method, which used inflation, economic growth, current account and unemployment factors to define performance requirements. The weighing of the criterion was done using Kaldorian, Keynesian, and Heterodox techniques. Research results showed that the highest macroeconomic performance was in 2002, while the worst was in 2008.

3. The Evaluation of Türkiye's Economic Performance for the Period of 1980-2021

3.1. The Evaluation of Türkiye's Macroeconomic Performance Based on the Magic Hypercube Approach

$$[\min \leq \gamma \leq \max], [\min \leq \tau \leq \max], [\max \geq \varphi \geq \min], [\max \geq \zeta \geq \min] \quad (3)$$

In this context, the variable γ denotes the real growth rate of GDP per capita. The variable τ indicates the change in international trade, specifically determined by the balance in the current account. Additionally, φ and ζ correspond to the inflation rate measured by the Consumer Price Index (CPI) and the unemployment rate as a percentage of the total labour force, respectively.

Table 1. Türkiye's Macroeconomic Variables for the Period of 1980-2021

Years	γ Economic growth	τ Current Account	φ Inflation	ζ Unemployment
1980	-4.44	-4.95	94.26	10.90
1981	2.78	-2.73	37.61	10.92
1982	1.38	-1.47	29.14	10.93
1983	2.57	-3.12	31.39	12.06
1984	4.32	-2.40	48.39	11.92
1985	1.98	-1.51	44.96	11.21
1986	4.78	-1.93	34.61	10.51
1987	7.29	-0.92	38.86	9.51
1988	0.31	1.76	68.81	8.04
1989	-1.65	0.88	63.27	8.26
1990	7.22	-1.74	60.30	8.02
1991	-1.09	0.17	65.98	8.21
1992	3.21	-0.61	70.08	8.51
1993	5.78	-3.57	66.09	8.96
1994	-6.33	2.01	105.21	8.58
1995	6.07	-1.38	89.11	7.64
1996	5.62	-1.34	80.41	6.63
1997	5.85	-1.39	85.67	6.84
1998	0.82	0.72	84.64	6.89
1999	-4.71	-0.36	64.87	7.69
2000	5.39	-3.62	54.92	6.50
2001	-7.14	1.86	54.40	8.38
2002	4.97	-0.26	44.96	10.36
2003	4.37	-2.40	21.60	10.54
2004	8.31	-3.47	8.60	10.84
2005	7.53	-4.14	8.18	10.64
2006	5.57	-5.59	9.60	8.72
2007	3.75	-5.42	8.76	8.87
2008	-0.39	-5.12	10.44	9.71
2009	-6.02	-1.75	6.25	12.55
2010	6.99	-5.74	8.57	10.66
2011	9.73	-8.87	6.47	8.80
2012	3.25	-5.45	8.89	8.15
2013	6.65	-5.83	7.49	8.73
2014	2.88	-4.14	8.85	9.88
2015	4.04	-3.16	7.67	10.24

2016	1.57	-3.11	7.78	10.84
2017	6.10	-4.76	11.14	10.82
2018	2.09	-2.79	16.33	10.89
2019	-0.03	0.70	15.18	13.67
2020	1.15	-4.93	12.28	13.11
2021	10.51	-1.67	19.60	11.97

Source: World Bank Data

$-7.14 \leq \gamma \leq 10.51$ (4)

$-8.87 \leq \tau \leq 2.01$ (5)

$105.21 \geq \varphi \geq 6.25$ (6)

$13.67 \geq \zeta \geq 6.5$ (7)

The process of normalisation required a transformation to be applied to the initial rates that were expressed.

$[0 \leq \gamma' \leq \alpha]; [0 \leq \tau' \leq \alpha]; [0 \leq \varphi' \leq \alpha]; [0 \leq \zeta' \leq \alpha].$ (8)

Where $\alpha = 1$ (9)

$\gamma' = \frac{1}{17.65}(7.14+\gamma)$ (10)

$\tau' = \frac{1}{10.88}(8.87+\tau)$ (11)

$\varphi' = \frac{1}{98.96}(105.21-\varphi)$ (12)

$\zeta' = \frac{1}{7.17}(13.67-\zeta)$ (13)

Table 2. Türkiye's Economic Performance Index associated with the Magic Hypercube (MH) (1980-2021)

Years	μ Macroeconomic Performance Index	Best Year Performance Rank
1980	0.002352	42
1981	0.083083	29
1982	0.096350	23
1983	0.048688	35
1984	0.054074	34
1985	0.072975	31
1986	0.135283	13
1987	0.232220	1
1988	0.119064	17
1989	0.089094	27
1990	0.190480	2
1991	0.085831	28
1992	0.113591	19
1993	0.092574	26
1994	0.003238	41
1995	0.070463	32
1996	0.123016	16
1997	0.095160	24
1998	0.078108	30

1999	0.036612	36
2000	0.174088	3
2001	0.015232	38
2002	0.152509	6
2003	0.142977	10
2004	0.167260	4
2005	0.149580	7
2006	0.144584	9
2007	0.127516	14
2008	0.069743	33
2009	0.006500	40
2010	0.094312	25
2011	0.118900	18
2012	0.138767	11
2013	0.148334	8
2014	0.126981	15
2015	0.156685	5
2016	0.101518	22
2017	0.107059	20
2018	0.101615	21
2019	0.024133	37
2020	0.012454	39
2021	0.135674	12

Source: Calculated and prepared by the Authors

By the estimation of the Equation 1, the findings of the Macroeconomic Performance Index are shown above in Table 2. The results show that for the period of 1980-2021 the best year performance by the Turkish government is in 1987, where it achieved the highest score of the macroeconomic performance index (0.232220), the second-best year is 1990 with a score of 0.190480, and third-best year is 2000 with a score of 0.174088. On the other hand, the worst performance economic performance is in 1980, with the lowest score of 0.002352, the second worst year is 1994 with a score of 0.003238, and third-worst economic performance is in 2009 with a score of 0.006500. All these match with the crises yeas of Türkiye, such as 1980, 1994 and 2009, respectively. Another crisis year of Türkiye which corresponds to 2001 with the rank of 39 in the above list (fifth worst) also shows the bottom of the "V shape" formation of MPI as seen in the following Figure 3. 2020 as the COVID year indicates the fourth worst in terms of MPI.

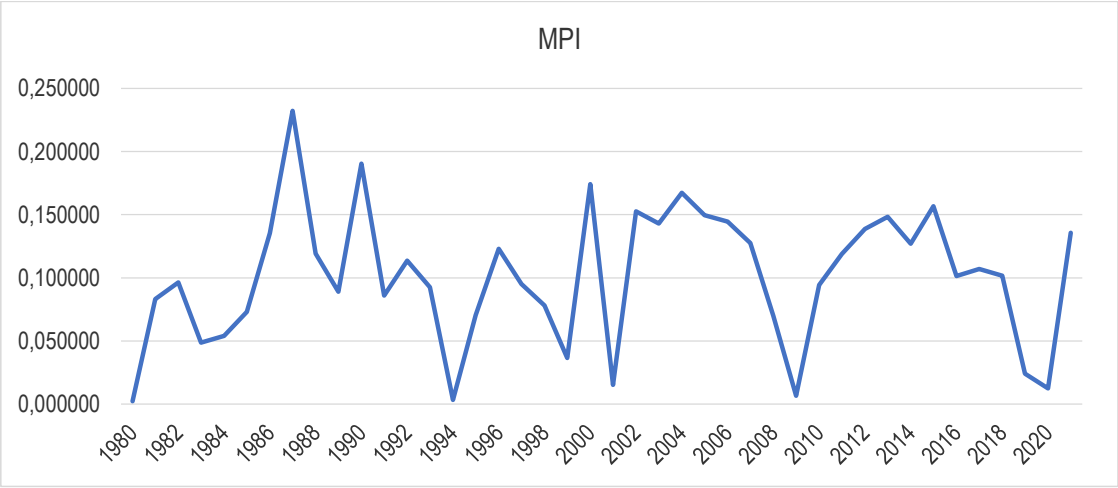

Figure 3. Türkiye's Economic Performance Index associated with the magic hypercube (MH) (1980-2021)

Source: prepared by the authors based on calculations of the Economic Performance Index

When examining the MPI of Türkiye from 1980 to 2021, it becomes evident that the country has experienced significant economic and political crises, as well as extensive reforms and changes through the years, which have had an apparent impact on the economic landscape of Türkiye. Based on the MH approach it was found that the worst performance year is 1980 with the lowest score (0.002352). During the period of 1979–1980, there was a notable upsurge in the levels of unemployment (10.90%), and inflation (94.26%), coupled with a decrease in real wages, and the slowest growth since 1950 recording -4.44%. Simultaneously, a global recession made the situation worse by limiting opportunities for employment abroad and consequently decreasing the flow of remittances into the nation. In addition to that, the increased interest rates on external debts, totalling $20 billion back then, along with the rising expenditure in oil imports, exacerbated the circumstances, leading to an unprecedented deficit in the balance of payments (Naylor, 2004: 96).

On January 24, 1980, a notable initiative was undertaken with the aim of attaining a durable decrease in inflation and guiding the economy towards sustainable growth. The administration has officially declared its commitment to adapting to economic liberalization and its intention to adopt a growth plan that places a strong emphasis on the promotion of exports. Subsequently, a military regime took charge in September 1980, with a coup d'état known as the 12 September Coup, led by General Kenan Evren. Although, the coup occurred in response to many negative factors, including the weak parliamentary democracy, incidents of political terrorism, an economic crisis, and shifts in the international political landscape (Aydin & Çetin, 2017: 109), the programme implemented on January 24 efficiently accomplished its primary goals, resulting in a significant reduction in inflation, an increase in GDP growth, and the establishment of a somewhat more liberalized external trade and financial system (Ertuğrul & Selçuk, 2001: 6), although with some short notice. This is because the requirements of export oriented economic growth such as new investments were not able to be realised for the long run, instead the existing plants were used with the full capacity and also beside the devaluation the wage cuts made both the cost of labour cheaper and reduced their demand towards the domestic products leading exports increase for a while. However, these policies could not last too long since firstly the employees getting wage increase under the inflation suffered a lot from the existing severe economic conditions.

It can be said that the export-led growth strategy-although with its shortages- implemented in the early 1980s proved relatively effective. In this regard, the real GDP experienced an impressive average annual growth rate of 5.8% from 1981 to 1988, and notably, the economy remained recession-free during this period. The country's achievements gained recognition in the annual reports of the IMF, positioning it as an exemplary case. Türkiye achieved its most outstanding macroeconomic performance in 1987, with the highest macroeconomic performance index of 0.232220. In 1987, Türkiye experienced a record high economic growth rate of 7.29%, relatively a low inflation rate of 38.86%, coupled with a relatively low unemployment rate of 9.51%, and a minimal current account deficit of -0.92% of GDP.

3.2. The Evaluation of Türkiye's Labour Market Regulations for the Period of 1980-2021

3.2.1. Labour Market Regulations in Türkiye Between 1980 and 2021

Akçay (2023) divides the last century of Türkiye into four sub-periods. The first sub-period, which is from 1923 to 1960, was characterised by state-building efforts to establish Western-style capitalism. Within the framework of economic planning, the import substitution industrialization strategy dominated the second sub-period from 1960 to 1980. The third sub-period which is from 1980 to 2001 was marked by economic liberalisation, a transition from import substitution to export-led industrialization, and authoritarian politics introduced by the military coup of 1980 and the last one is the sub-period started in 2002 and still continuing, which can be tackled as 2002-2009 and 2010-2021 as follows.

3.2.1.1. 1980–2001: Liberalisation and Structural Reforms

The 1980s marked a transformative era for Türkiye’s labour market, characterised by a shift from a state-controlled economy to a more liberalised market model. The political atmosphere in the 1970s posed significant barriers to implementing effective reforms. Labour unions fiercely resisted planned economic adjustments, leading to a record-high number of strikes at the end of the 1970s. This unrest culminated in a military coup in September 1980, which aimed to create the necessary conditions for pushing through a programme of structural reforms (Önis & Webb, 1992). Guided by international financial institutions such as the IMF and the World Bank, Türkiye embarked on structural adjustment programmes that drove this transition from import substitution to export-led industrialization. However, paradoxically, the state introduced new legislation to strengthen its control over organised labour, shutting down unions and subjugating independent social institutions (Armstrong, 2015). Despite these measures, the era saw mixed outcomes: the unemployment rate decreased from 11.6% in 1980 to 8.2% in 1989, while the real wage in manufacturing decreased from 119 to 94 (TL CPI deflated), and the dollar wage also decreased from 4231 to 3356 during the same period (Önis & Webb, 1992: 2). The 1990s were marked by economic instability and several financial crises, which significantly impacted labour market policies. The government prioritised flexibility, frequently adjusting the minimum wage to address inflation and economic conditions. For instance, the net minimum wage changed dramatically from 6,550 TL in 1980 to 151,612,500 TL in 2001 (Güneş, 2007: 199).

3.2.1.2. 2002-2009: European Harmonisation and Labour Market Reforms

The arrival of the AK Party to power in 2002 marked a turning point in Türkiye's history (Balci & Monceau, 2003). The early 2000s saw Türkiye actively pursue alignment with European Union (EU) labour market standards as part of its EU accession process since the European Commission started the process of cooperation and harmonisation on employment with candidate countries in 1999 (Eser & Terzi, 2008). A significant milestone was the enactment of Labour Law No. 4857 in 2003, a comprehensive reform aimed at modernising the regulations related to working hours, employment contracts, and worker rights. Additionally, the government implemented social security reforms to enhance coverage and sustainability (Dereli, 2014: 4). Yamak, Dursun, and Topbaş (2007) highlighted the pivotal role that labour unions played in enhancing the economic gains and working conditions of their members between 1991 and 2005. Their study confirmed that while union activities have been significantly restricted from time to time in Türkiye, periods of liberalisation allowed unions to play a significant role, particularly in influencing the nominal wage per capita. Despite these efforts, the success of the reforms was mixed. Yamak and Dursun (2009) emphasised the insignificant impact that unionization has on labour productivity in this period of time. While some improvements were observed, challenges in enforcement persisted (İçduygu, 2016). Between 2002 and 2007, the Turkish economy grew by an average of 7% per year, and per capita GNI rose from USD 3,529 in 2002 to USD 8,730 in 2009. The GDP per capita based on purchasing power parity (PPP) reached USD 13,000 in 2010, a significant improvement since 2002 (World Bank). Unfortunately, Türkiye failed to match this solid growth performance with similar outcomes in employment creation, with employment growth rates remaining modest since it grew by 1.1% in 2007 and 1.8% in 2008. The global financial crisis of 2008 further impacted the economy, causing a contraction of 6.2% in the fourth quarter of 2008, resulting in an overall growth of only 0.65% that year (World Bank).

3.2.1.3. 2010-2021: Economic Growth and Labour Market Challenges

The 2010s were a decade of robust economic growth for Türkiye, but they also brought significant labour market challenges. During this period, Türkiye's GDP grew by an average of 5.94% between 2010 and 2021 (World Bank). The Labour Market Regulations Index (LMRI) also saw a notable increase, rising from an average of 3.86 in the 2000s to 4.2 in 2010 and 5.8 in 2021 (Fraser Institute, 2021). In this period, the government introduced policies aimed at increasing labour force participation among youth and women, tapping into this underutilised potential. The government also implemented stricter enforcement of labour laws to reduce the high levels of informal employment, in line with EU labour reforms. The emphasis on labour market flexibility continued, with reforms facilitating part-time and temporary work arrangements (Hendrickx, 2019).

The COVID-19 pandemic in 2020 had a profound impact on Türkiye's labour market, prompting the government to implement emergency measures to protect workers from the pandemic's detrimental effects. These measures included the introduction of a short-time work allowance to support businesses and workers affected by the pandemic. Additionally, the establishment of a legal framework for remote working arrangements provided greater flexibility for certain workers. Temporary bans on layoffs and financial support for affected workers were also introduced to mitigate the economic impact (Sahin, 2021).

Overall, Türkiye's labour market regulations have undergone significant evolution over the past four decades, reflecting broader economic and political changes. The balance between flexibility and protection has been a central theme, with varying degrees of success in different periods. While reforms aimed to increase flexibility and promote economic growth, challenges in enforcement and the impact of external factors continue to shape the Turkish labour market landscape.

3.2.2. The Evaluation of Türkiye's LMRI for the Period of 1980-2021

Table 3 shows the Labour Market Regulation Index for Türkiye for the Period of 1980-2021. The value of the LMR Index varies from 1 to 10. The higher the value is the higher the degree of flexibility of the labour market.

Table 3. Türkiye's Labour Market Regulations Index: 1980-2021

Years	**1980**	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**
LMRI	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62	3.62
Years	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
LMRI	5.16	5.16	5.16	5.16	5.16	5.35	5.35	5.35	5.35	5.35
Years	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
LMRI	3.77	3.75	3.8	3.78	3.78	4.1	3.83	3.84	3.81	4.15

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
LMRI	4.2	4.42	4.59	4.47	4.42	4.27	4.42	4.53	5.08	5.08
Years	**2020**	**2021**								
	5.08	5.08								

Source: Fraser Institute (LMR Index), 2021. https://www.fraserinstitute.org/economic-freedom/map?geozone=world&page=map&year=2021

As shown in Figure 4, after a long stability period from 1980 to 1989 at a level of 3.62, there was a significant increase in LMR index to achieve 5.16 in 1990, however, a decrease in labour market flexibility in Türkiye during the year 2000 is observed. This decline was notable, dropping from its highest point of 5.35 recorded in 1995 to 3.77 in 2000 and reaching its lowest level of 3.75 in 2001, indicating a highly rigid labour market during that period. However, because of the reforms implemented by the Turkish government, labour market restrictions became more adaptable. LMRI began a consistent upward trend in the subsequent years, reaching a substantial level of 5.08 in 2018 and maintaining stability until 2021. This represented a 35% increase from its lowest value, although it still remained below the peak level observed in 1995.

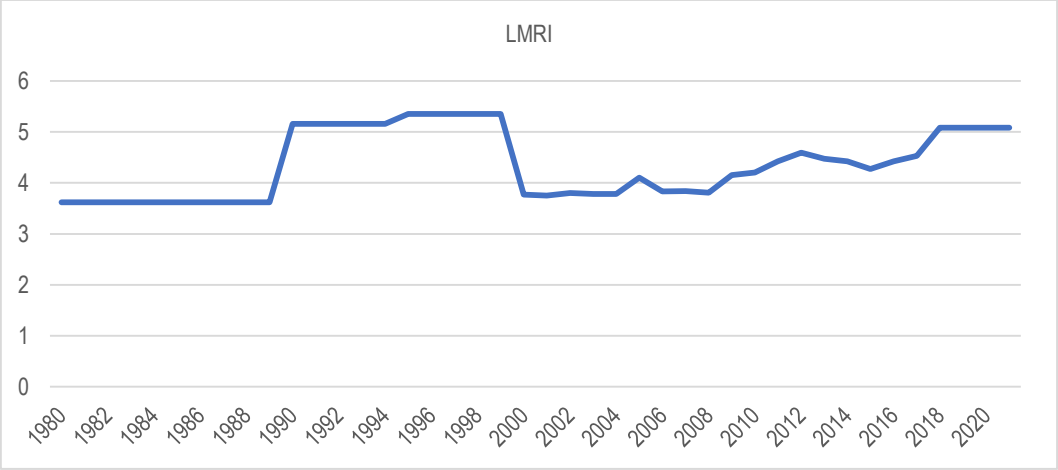

Figure 4. Türkiye's Labour Market Regulations Index: 1980-2021

Source: prepared by the Author based on data from Fraser Institute (LMR Index)

3.3. The Evaluation of Türkiye's LMRI and MPI together with a Comparison of Some Selected Countries' Performances

Figure 5 indicates both MPI and LMRI together for the period of 1980-2021. As it is shown, there seems no relationship between these two indicators. At least, it can be said that there seem no findings confirming neoclassical view's expectations, rather opposite one seems valid generally, such as when the LMRI gets high, for instance for the 1990s, referring the more flexibility for the labour market MPI gets worse, for the same period except for the year of 1990, opposite to the expectation of the neoclassical view. On the other hand, when it decreases, for instance for the period of 2000s, referring the less flexibility for the labour market, MPI can be high again opposite to the expectation of the neoclassical view. It seems that MPI of Türkiye do not depend on LMRI at all.

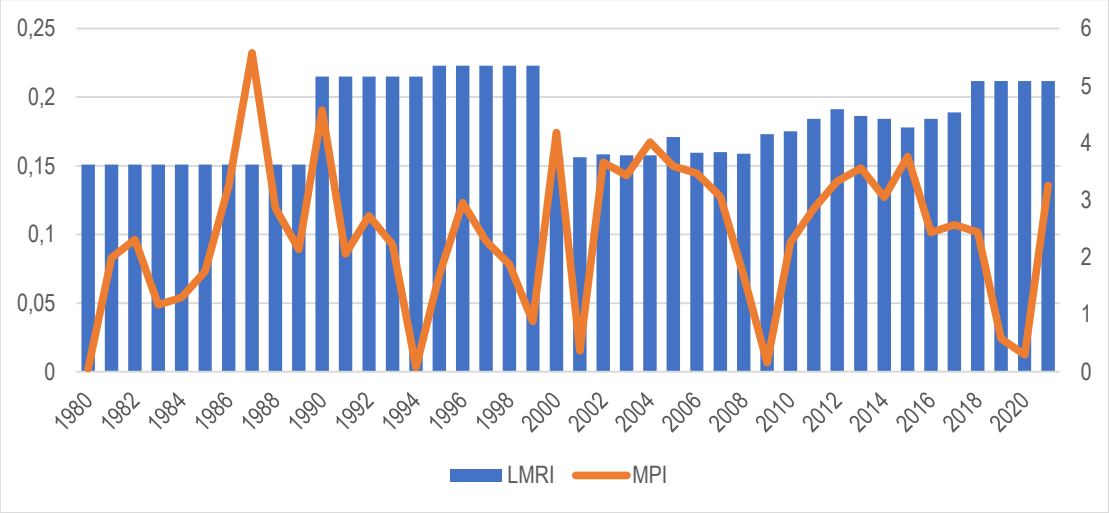

Figure 5. Türkiye's Average LMRI and MPI: 1980-2021

Source: Prepared by the Authors

The following Table 4 indicates the Türkiye's LMRI comparatively with some selected countries' including both developed and developing ones for the period of 1990-2021[4]. It seems that for the 1990s, the first sub-period of the whole period, when Türkiye's LMRI is compared with the developed countries', it is higher than Germany's but lower than the US and UK's, which somewhat reflects the Anglo-Saxon culture shaped by more neo-classic view than the others, especially Germany shaped by more social capitalism. When Türkiye's LMRI is compared with the developing ones, it seems that for the same sub-period it is higher than the ones of Brazil, Chile, China, Indonesia, Russia and Poland, as the last two are accepted as transition economies; lower than the ones of Mexico, Philippines, Malaysia and India. However, after the 2000s it seems that when Türkiye's LMRI starts to diminish till the 2009, the year in which the Global Financial Crisis of 2008 felt deeply in Türkiye, the others generally increased with some exceptions. After 2010 each country seems to increase its index, at least, when they are compared with the starting indexes in 1990 with some minor exceptions. Among them the dramatic increases were experienced in the transition economies, which is not surprising at all. On the other hand, Türkiye, although she increased its index after 2010 it could not reach to the level of the starting point, with some challenging arguments in the political arena regarding the regulations on the labour issues. When the averages of the sub-group periods are compared except for the 1990s, the other sub periods indicate that Türkiye's LMRI is relatively lower than the others, both the developing and developed ones, except for the Indonesia for the last sub-period. It seems that although Türkiye preferred (or had to) to deregulate its labour market in the 1990s, such deregulation tendency seems to turn into reverse since 2000.

Table 4. Labour Market Regulations Index of Some Selected Countries

Years	Brazil	China	Chile	Indonesia	India	Malaysia	Mexico	Poland	Philippines	Russia	U.K.	U.S.	Germany	Türkiye
1990	4.78	3.16	4.95	2.78	6.26	8.19	5.08	3.62	7.65	1.84	7.24	7.68	3.48	5.16
1991	4.78	3.16	4.95	2.78	6.26	8.19	5.08	3.62	7.65	1.84	7.24	7.68	3.48	5.16
1992	4.78	3.16	4.95	2.78	6.26	8.19	5.08	3.62	7.65	1.84	7.24	7.68	3.48	5.16
1993	4.78	3.16	4.95	2.78	6.26	8.19	5.08	3.62	7.65	1.84	7.24	7.68	3.48	5.16
1994	4.78	3.16	4.95	2.78	6.26	8.19	5.08	3.62	7.65	1.84	7.24	7.68	3.48	5.16
1995	5.3	4.54	5.27	4.22	6.11	7.55	5.87	4.45	6.82	4	7.22	7.46	3.56	5.35
1996	5.3	4.54	5.27	4.22	6.11	7.55	5.87	4.45	6.82	4	7.22	7.46	3.56	5.35
1997	5.3	4.54	5.27	4.22	6.11	7.55	5.87	4.45	6.82	4	7.22	7.46	3.56	5.35
1998	5.3	4.54	5.27	4.22	6.11	7.55	5.87	4.45	6.82	4	7.22	7.46	3.56	5.35
1999	5.3	4.54	5.27	4.22	6.11	7.55	5.87	4.45	6.82	4	7.22	7.46	3.56	5.35

[4] Due to the data limitations of some countries before 1990 the data is started from 1990.

AVE.	**5.04**	**3.85**	**5.11**	**3.50**	**6.19**	**7.87**	**5.48**	**4.04**	**7.24**	**2.92**	**7.23**	**7.57**	**3.52**	**5.26**
2000	4.19	4.54	6.21	4.3	6.53	6.72	5.28	6.53	5.15	5.98	8.14	8.88	3.74	3.77
2001	4.16	4.45	6.09	4.16	6.53	6.7	5.33	6.44	4.98	5.96	8.08	8.94	3.76	3.75
2002	3.88	4.56	6.61	4.65	6.74	7.16	5.61	6.79	5.52	6.01	8.52	9.31	3.98	3.8
2003	3.86	4.52	6.66	4.75	6.62	7.07	5.59	6.86	5.52	6.01	8.57	9.26	4.06	3.78
2004	3.86	4.52	6.66	4.77	6.68	7.17	5.63	6.76	5.58	5.96	8.57	9.32	4.16	3.78
2005	4.5	4.84	7.09	5.3	7.21	7.49	6.19	6.91	6.28	6.42	8.82	9.61	4.73	4.1
2006	4.85	4.59	6.82	5.17	6.85	7.01	6.11	6.88	5.7	5.97	8.78	9.4	4.3	3.83
2007	4.88	4.62	6.74	5	6.78	6.91	6.1	6.99	5.71	5.95	8.45	9.39	4.21	3.84
2008	4.69	4.59	6.59	4.83	6.76	6.75	5.84	6.94	5.7	6.16	8.33	9.19	4.08	3.81
AVE.	**4.32**	**4.58**	**6.61**	**4.77**	**6.74**	**7.00**	**5.74**	**6.79**	**5.57**	**6.05**	**8.47**	**9.26**	**4.11**	**3.83**
2009	5.03	5.1	6.58	4.65	7.06	6.82	5.79	7.72	5.69	6.29	8.38	9.12	5.15	4.15
2010	4.95	5.18	6.94	4.64	7.08	6.96	5.76	8.15	5.77	6.45	8.32	9.09	5.2	4.2
2011	5.11	5.32	6.33	4.55	7.21	7.16	5.72	7.72	6	6.23	8.45	9.06	6.28	4.42
2012	5.09	5.28	5.42	4.51	7.25	7.13	5.72	7.73	6.05	6.3	8.46	9.09	6.32	4.59
2013	5.01	5.18	5.45	4.47	6.44	7.2	6.08	7.71	6.59	6.18	8.37	9.33	6.62	4.47
2014	5.08	5.28	5.47	4.55	5.95	7.15	5.79	7.72	6.55	5.91	8.33	9.36	6.37	4.42
2015	5.04	5.19	5.56	4.46	5.99	7.18	5.91	7.69	6.53	6.02	8.38	9.36	6.98	4.27
2016	5.05	5.13	5.56	4.51	5.95	7.19	5.88	7.24	6.55	5.87	8.37	9.33	7.08	4.42
2017	5.1	5.13	5.47	4.62	6.09	7.26	5.89	7.25	6.75	5.88	8.37	9.19	7.13	4.53
2018	5.14	5.13	5.4	4.6	5.93	7.23	5.91	7.24	6.75	6.18	8.31	9.14	7.1	5.08
2019	5.14	5.13	5.4	4.6	5.93	7.23	5.91	7.24	6.75	6.18	8.31	9.14	7.1	5.08
2020	5.14	5.13	5.4	4.6	5.93	7.23	5.91	7.24	6.75	6.18	8.31	9.14	7.1	5.08
2021	5.14	5.04	5.33	4.64	6.11	7.23	5.91	7.24	6.75	5.92	8.23	9.14	7.1	5.08
AVE.	**5.08**	**5.17**	**5.72**	**4.57**	**6.38**	**7.15**	**5.86**	**7.53**	**6.42**	**6.12**	**8.35**	**9.19**	**6.58**	**4.60**

Source: Fraser Institute (LMR Index), 2021.

Figure 6 shows the deregulation process of the labour markets of the selected countries over time. It seems that after the 1990s most of the countries generally had a tendency towards more deregulation of their labour markets.

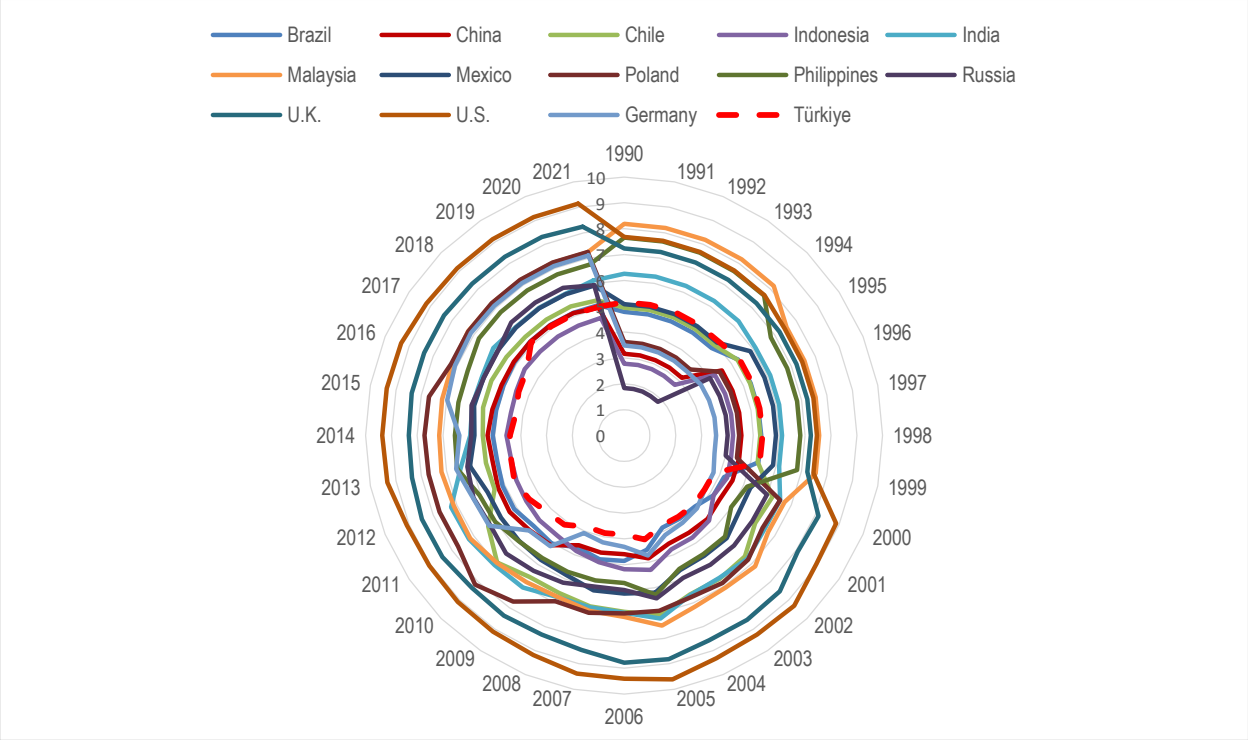

Figure 6. LMRI of Some Selected Economies Compared to Türkiye, 1990-2021

Source: Prepared by the Authors based on data from Fraser Institute (LMR Index)

Table 5 indicates the MPI of the selected countries. Among them Türkiye's performance, although increased by the time, is still one of the worst ones when it is looked at the total period average of MPI. It seems that most of the countries increased their MPIs as total period average compared to the average MPIs of the 1990s, except for firstly the US as most suffering economy from the Global Financial Crisis of 2008.

Table 5. Macroeconomic Performance Index, Magic Hypercube (MH), of Some Selected Countries

Countries	1991-1995	1996-2000	Average (1990s)	2001-2005	2006-2010	Average (2000s)	2011-2015	2016-2021	Average (2010-2021)	Total Period Average of MPI
Brazil	0.1282	0.0408	0.0845	0.1747	0.2125	0.1936	0.0501	0.0259	0.038	0.1054
Chile	0.1396	0.0676	0.1036	0.0767	0.1296	0.10315	0.1197	0.0605	0.0901	0.099
China	0.0924	0.1091	0.10075	0.0553	0.0964	0.07585	0.0202	0.0127	0.01645	0.0643
Germany	0.0064	0.009	0.0077	0.0254	0.1295	0.07745	0.3509	0.3742	0.36255	0.1492
India	0.146	0.2126	0.1793	0.3252	0.1057	0.21545	0.1295	0.2604	0.19495	0.1965
Indonesia	0.1091	0.1048	0.10695	0.1221	0.0996	0.11085	0.0868	0.1706	0.1287	0.1155
Malaysia	0.0092	0.1123	0.06075	0.1431	0.1344	0.13875	0.1304	0.0725	0.10145	0.1003
Mexico	0.0605	0.1789	0.1197	0.3122	0.2648	0.2885	0.193	0.2701	0.23155	0.2132
Philippines	0.0114	0.0165	0.01395	0.0782	0.1185	0.09835	0.206	0.1852	0.1956	0.1026
Poland	0.0366	0.0958	0.0662	0.0163	0.0796	0.04795	0.1902	0.4324	0.3113	0.1418
Russia	0.0047	0.064	0.03435	0.2625	0.1947	0.2286	0.1087	0.151	0.12985	0.1309
U.K.	0.0372	0.2566	0.1469	0.2954	0.0928	0.1941	0.0513	0.1656	0.10845	0.1498
U.S.	0.1463	0.2538	0.20005	0.052	0.0167	0.03435	0.1208	0.1628	0.1418	0.1254
Türkiye	0.0791	0.1064	**0.09275**	0.1297	0.0901	**0.1099**	0.1496	0.0783	**0.11395**	**0.1055**

Source: Calculated by the Authors based on World Bank database

Table 6 indicates the whole comparison picture of the selected countries in terms of both LMRI and MPI for the whole period. It seems that except for some countries the rank of ALMRI does not match with the AMPI for the top 5 list. In

other words, although the most deregulated country of the selected countries for the whole period of 1990-2021 seems US, it is not in the top 5 list of AMPI. Again, Malaysia and Philippines, which are 4th and 5th of the ALMRI list, respectively, do not place in the top 5 list of the AMPI. On the other hand, the exceptions to this are the countries such as UK and India. Since both of them are in the top 5 lists of both indexes it seems that deregulation of labour markets may contributed their Macro Performance Index. However, since the exceptions are just for two and India is a member of Commonwealth Countries sharing similar structural factors with the UK, there should be other institutional factors contributing to the MPI by increasing the effect of LMRI. Moreover, Germany lists in the last 5 list of the ALMRI, among the most regulated ones, but ranks 4th of the top 5 list of the AMPI. Türkiye seems among the most regulated ones as the second one in the last list of the ALMRI, however, its macro performance index is not in the last 5 list, but not a good performance, either, contributing to the hypothesis that in Türkiye there seems other factors than Labour Market Regulations contributing to the Macro Performance of Türkiye.

Table 6. The Averages of Macroeconomic Performance and Labour Market Regulations Indexes of the Selected Countries and Their Rankings, 1990-2021

	AVERAGE LMRI (ALMRI)	RANK OF ALMRI	RANK OF AMPI	AVERAGE OF MPI (AMPI)
U.S.	8.70	1	7	0.125
U.K.	8.04	2	3	0.150
Malaysia	7.33	3	12	0.100
Philippines	6.44	4	11	0.103
India	6.42	5	2	0.197
Poland	6.23	6	5	0.142
Chile	5.78	7	13	0.099
Mexico	5.71	8	1	0.213
Russia	5.10	9	6	0.131
Germany	4.93	10	4	0.149
Brazil	4.85	11	10	0.105
China	4.59	12	14	0.064
Türkiye	4.59	**13**	**9**	0.106
Indonesia	4.29	14	8	0.116

Source: prepared by the authors

Conclusion

The relationship between labour market regulations and macroeconomic performance is a complex and controversial issue in the economics literature. On one side of the argument, it is maintained that flexible LMR can enhance macroeconomic performance by increasing the efficiency and adaptability of the labour market, reducing labour costs and rigidities, and stimulating employment and growth. On the other hand, it is advocated that stringent labour market restrictions can improve macroeconomic performance through the augmentation of worker security and bargaining strength, the promotion of human capital and innovation, and the stabilization of income and demand.

In this regard, the study evaluates the labour market regulations, proxied by LMRI with the macroeconomic performance, proxied by MPI, of Türkiye during the period of 1980–2021 by using original tables and figures done by calculated indexes. It can be generally said that during the period of 1980–2021, macroeconomic performance of Türkiye is not related with the labour market regulations. At least, it can be said that there seem no findings confirming neoclassical view's expectations, rather opposite one seems valid generally, such as when the LMRI gets high, for instance for the 1990s, referring the more flexibility for the labour market MPI gets worse, for the same period except for the year of 1990. On the other hand, when it decreases, for instance for the period of 2000s, referring the less flexibility for the labour market, MPI can be high again opposite to the expectation of the neoclassical view. It seems that MPI of Türkiye do not depend on LMRI at all. Moreover, it can be said that when compared with some selected countries for the period of 1990-2021Türkiye seems among the most regulated ones in terms of the Labour market for the whole period of 1990-

2021, however, its Macro Performance Index is not in the last or worst 5 list, although still is not a good performance, too, contributing to the hypothesis that in Türkiye there seems other factors than Labour Market Regulations contributing to the Macro Performance of Türkiye. But, of course, further research on this issue is needed. This research can be accepted as a starting point to see the whole picture.

When comparing the findings of this paper with previous studies, it is evident that most of the literature confirms the negative impact of stringent labour market regulations on unemployment, as these regulations directly affect employment levels. However, this study focuses on a composite indicator, namely, the MPI, which includes unemployment as one of its four components. So, it cannot be interpreted from the results of this study that strict labour market regulations negatively affect unemployment. Furthermore, even the negative impact of the LMRI on the MPI is not as pronounced because the components of the MPI often move in opposite directions. Namely, a high growth rate is usually associated with low unemployment and higher inflation. This inverse relationship among the components of the MPI; unemployment, inflation, growth rate, and current account, means that the overall impact of labour market regulations on the MPI is more complex and less straightforward. Given the limited impact of labour market regulations on Türkiye's MPI, it is advisable for Türkiye to adopt a balanced approach. This should blend employer flexibility with worker security, using the European Union as a benchmark. This strategy can help foster a more resilient and dynamic labour market, benefiting both businesses and employees.

In a nutshell, while rigid labour market regulations may negatively impact unemployment, their effect on the MPI as a whole might be mitigated when they interact with other macroeconomic variables. This comprehensive analysis highlights the importance of considering multiple economic indicators when assessing the overall impact of labour market regulations on macroeconomic performance. This approach allows us to capture the multifaceted effects of these regulations, offering valuable insights for policymakers, furthermore, this study serves as a foundation and a starting point for future research, including econometric analyses.

References

Adascalitei, D., & Pignatti Morano, C. (2016). Drivers and effects of labour market reforms: Evidence from a novel policy compendium. IZA Journal of Labour Policy, 5, 1-32.

Akçay, Ü. (2023). Transformations in the Turkish economy: A political economy analysis of 100 years of the Republic of Turkey. In Turkey, a century of change in state and society (pp. 43-70). Cham: Springer International Publishing.

Al, I., & Demirel, S. (2022). The evaluation of macroeconomic performance of Turkey with topsis method. Mehmet Akif Ersoy University Journal of Economics and Administrative Sciences Faculty, 202-222.

Armstrong, W. (2015). The economic transformation of Turkey since 1980. [Available online at: https://www.hurriyetdailynews.com/opinion/william-armstrong/the-economic-transformation-of-turkey-since-1980-92300], Retrieved on August 08, 2024.

Asher, M. A., Defina, R. H., & Thanawala, K. (1993). The misery index: Only part of the story. Challenge, 36(2), 58-62.

Aydin, L., & Çetin, D. (2017). Economic effects of july 15 coup attempt ın turkey: Comparing coup attempt vs. coup d'état. Electronic Turkish Studies, 12(16).

Balci, B., & Monceau, N. (Eds.). (2023). Turkey, a century of change in state and society. Springer Nature.

Belot, M., Boone, J., & van Ours, J. C. (2014). Welfare-improving employment protection. Economic Journal. 124(581).

Bernard, M., Drouet, M., Échaudemaison, C. D., & Pinet-Dumont, N. (1988). Economie et société françaises: Classe de 1re B. Nathan.

Bertola, G., Blau, F. D., & Kahn, L. (2001). Comparative analysis of labour market outcomes: Lessons for the US from international long-run evidence.

Blanchard, O. J., & Summers, L.H. (1986). Hysteresis and the European unemployment problem. National Bureau of Economic Research. 15-90

Blanchard, O., & Wolfers, J. (2000). The role of shocks and institutions in the rise of European unemployment: The aggregate evidence. The economic journal, 110(462), 1-33.

Calderón, C., & Chong, A. (2005). Are labour market regulations an obstacle for long-term growth. Labour markets and institutions,(8), 167-219.

Calmfors, L., & Driffill, J. (1988). Bargaining structure, corporatism and macroeconomic performance. Institute for International Economic Studies. Vol. 3, No. 6. pp. 13-61.

Charnes, W., Cooper, W.W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. European Journal of Operational Research, 429-444.

Charnes, W., Cooper, W.W., & Rhodes. E. (1979). Measuring the efficiency of decision making units. European Journal of Operational Research, p. 239.

Charnes, W., Cooper, W.W., & Rhodes. E. (1981). Evaluating program and managerial efficiency. Management Science, 668-697.

Clemens, J., Palacios, M., & Li, N. (2022). The Misery Index Returns. Fraser Research Bulletin.

Coşkun, A. E. (2022). Evaluation of macroeconomic performances of BRICS-T economies: Entropy-based waspas approach. İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi, 1320-1340.

Daşbaşi, B., Barak, D., & Çelik, T. (2019). Analyzing the macroeconomic performance index for Turkey (1990-2017): Artificial Neural Network approach. Bingöl Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 93-112.

Dereli, T. (2014). Flexicurity and Turkey's new labour act: Problems and prospects. In Labour and Employment Relations in a Globalized World: New Perspectives on Work, Social Policy and Labour Market Implications (pp. 135-158). Cham: Springer International Publishing.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Botero, J. (2003). The regulation of labour.

Doğan, H. (2022). Türkiye'nin makroekonomik performansının 2010-2020 yılları için CRITIC temelli aras yöntemi ile değerlendirilmesi. Academic Social Studies / Akademik Sosyal Araştırmalar, 189-202.

Duval, R., & Furceri, D. (2018). The effects of labour and product market reforms: The role of macroeconomic conditions and policies. IMF Economic Review, 66, 31-69.

Ernst, E., Merola, R., & Reljic, J. (2022). Labour market policies for inclusiveness: A literature review with a gap analysis (No. 78). ILO Working Paper.

Ertuğrul, A., & Selçuk, F. (2001). A brief account of the Turkish economy, 1980-2000. Russian & East European finance and trade, 37(6), 6-30.

Eser, A. G. B. Y., & Terzi, H. (2008). Türkiye'de işsizlik sorunu ve Avrupa istihdam stratejisi. Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, (30), 229-250.

Fraser Institute. (2021). Economic Freedom of the World. [Available online at: https://www.fraserinstitute.org/economic-freedom/dataset?geozone=world&year=2021&page=dataset&min-year=2&max-year=0&filter=0], Retrieved on August 08, 2024.

Güneş, Ş. (2007). Minimum wage and average wage relationship in Türkiye: A cointegratıon and error correction analysis. Akdeniz University Faculty of Economics & Administrative Sciences Faculty Journal/Akdeniz Universitesi Iktisadi ve Idari Bilimler Fakultesi Dergisi, 7(13).

Hanke, S. H. (2018). Hanke's annual misery index: The world's saddest (and happiest) countries. [Available online at: https://www.cato.org/commentary/hankes-annual-misery-index-worlds-saddest-happiest-countries?queryID=1882d7f129409b5bb9f2760dffe8254d], Retrieved on August 08, 2024.

Hendrickx, F. (2019). Informal employment, new forms of work and enforcement of labour Rights. Regulating for Globalization, 5.

International Monetary Fund (IMF). (2003). Unemployment and labour market institutions: Why reforms pay off in world economic outlook. [Available online at: https://doi.org/10.5089/9781589062122.081], Retrieved on August 08, 2024.

İçduygu, A. (2016). Turkey: Labour market integration and social inclusion of refugees.

Jha, P., & Golder, S. (2008). Labour market regulation and economic performance: A critical review of arguments and some plausible lessons for India. International Labour Office ILO, 1–76.

Kovaci, S., Belke, M., & Bolat, S. (2018). The effects of labour market regulations on unemployment: panel data evidence for selected OECD countries. Journal of Social And Humanities Sciences Research (JSHSR), 2030-2042.

Layard, R., Nickell, S. J., & Jackman, R. (1991). Unemployment: Macroeconomic performance and the labour market. Oxford University Press, USA.

Lazear, E. P. (1990). Job security provisions and employment. The Quarterly Journal of Economics, 105(3), 699-726.

Lindbeck, A., & Snower, D. J. (1988). Cooperation, harassment, and involuntary unemployment: An insider-outsider approach. The American Economic Review, 167-188.

Liotti, G. (2020). Labour market flexibility, economic crisis and youth unemployment in Italy. Structural Change and Economic

Liotti, G. (2022). Labour market regulation and youth unemployment in the EU-28. Italian Economic Journal, 77-103.

Lovell, C.A.K. (1995). Measuring the macroeconomic performance of the taiwanese economy. International Journal of Production Economics, 39, 165-178.

Lovell, C.A.K., Pastor, J.T., & Turner, J.A. (1995). Measuring macroeconomic performance in the OECD: A comparison of European and Non-European countries. European Journal of Operational Research, 87, 507-518.

Marelli, E., Choudhry, M. T., & Signorelli, M. (2013). Youth and total unemployment rate: The impact of policies and institutions. Vita e Pensiero – Pubblicazioni dell'Università Cattolica del Sacro Cuore, 63-86.

Medrano-B, R. A., & Teixeira, J. R. (2013). A Kaldorian macroeconomic index of economic welfare. Revista HEERA, 1-8.

Melyn, W., & Moesen, W. (1991). Towards a synthetic indicator of macroeconomic performance: Unequal weighting when limited information is available. Public Economics Research Paper 17, Centre for Economic Studies, Leuven, 24 pp.

Modigliani, F., & Papademos, L. (1975). Targets for monetary policy in the coming year. Brookings Papers on Economic Activity, 1975(1), 141-165.

Naylor, R. T. (2004). Hot money and the politics of debt. McGill-Queen's Press-MQUP.

Organization for Economic Co-operation and Development (OECD). (1994). The OECD jobs study facts, analysis, strategies.

Organization for Economic Co-operation and Development (OECD). (2008). Handbook on constructing composite indicators: methodology and user guide. Ispra: OECD Publishing.

Önis, Z., & Webb, S. B. (1992). Political economy of policy reform in Turkey in the 1980s (Vol. 1059). World Bank Publications.

Rafi, B. (2017). The impact of labour market regulation on the unemployment rate: evidence from OECD economies. Department of Industry, Innovation and Science, Australian Government.

Saavedra-Rivano, N., & Teixeira, J. R. (2017). Magic hypercube and index of welfare and sustainability. EconomiA, 18(1), 88-97.

Sahin, T. (2021). Turkey may do more to protect labour market amid COVID-19. [Available online at: https://www.aa.com.tr/en/economy/turkey-may-do-more-to-protect-labor-market-amid-covid-19/2225302], Retrieved on August 08, 2024.

Saltelli, A. (2007). Composite indicators between analysis and advocacy. Social indicators research, 81, 65-77.

Tridico, P. (2018). The determinants of income inequality in OECD countries. Cambridge Journal of Economics, 42(4), 1009-1042.

Wang, C. N., & Le, A. L. (2018). Measuring the macroeconomic performance among developed countries and Asian developing countries: past, present, and future. Sustainability, 2-18.

Yamak, R., & Dursun, S. (2009). Türkiye'de sendikalaşma ve verimlilik: Nedensellik analizi. TİSK Akademi, 4(8), 22-41.

Yamak, R., Dursun, S., & Topbaş, F. (2007). Türkiye'de sendikalaşma ve ücretler: 1991-2005 Panel Nedensellik Analizi. 8. Türkiye Ekonometri ve İstatistik Kongresi, İnönü Üniversitesi, 1-14.

Zemanek, H. (2010). Competitiveness within the euro area: the problem that still needs to be solved. Economic Affairs, 30(3), 42-47.