

The Impact of Labor Unions, Government Regulations and Social Protections on the Efficiency of Labor Market

Aminu Yau

Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Master of Science
in
Economics

Eastern Mediterranean University
February 2016
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

Prof. Dr. Cem Tanova
Acting Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Science in Economics

Prof. Dr. Mehmet Balcılar
Chair, Department of Economics

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Economics.

Prof. Dr. Sevin Uğural
Supervisor

Examining Committee

1. Prof. Dr. Fatma Güven Lisaniler

2. Prof. Dr. Sevin Uğural

3. Asst. Prof. Dr. Çağay Coşkuner

ABSTRACT

Labor market is such a crucial area in every economy, that necessitates certain regulations and protections in the overall activity of the market, through government intervention, labor unions and social protections institutions, ultimately to protect the interest of the employees, employers and other relevant stakeholders in the market, with the soul aim of increasing the efficiency of the labor market in general. This research study tries to assess the impact of these regulations and labor institutions on the efficiency of the labor market. The study collected a across-sectional data from 80 developed and less developed countries, and applied an ordinary least squared (OLS) regression model to assess the impact of government regulation, labor unions and social protection on the efficiency of labor market across the developed and less developed countries, in an attempt to figure out whether these institutions and regulations achieved the aims and objectives, which is to enhance the overall efficiency of the labor market based on labor market institutions efficiency theory. The result shows that despite the fact that government regulation, labor unions and social protection have some significant positive impact on the efficiency of labor market, the variables also have negative impact on the labor market efficiency in some other ways, which create some forms of distortion in the market. Moreover, the result shows that these impacts differ across developed and less developed countries significantly.

Keywords: Labor market, Government regulations (Minimum wage rate), Labor union density, Labor market efficiency, Social protections (social institutions)

ÖZ

İşgücü piyasası her ekonomide önemli bir sektördür, bu yönetimin emek sendikaları ve sosyal müdahale kurumları kurumlar aracılığıyla pazarın genel aktivitesinde belli düzenlemeler ve korumalar gerektirmektedir. Genel olarak Bu araştırma çalışmasında İşçi piyasasının etkinliğinin artırılması, piyasada işçi, işveren ve diğer ilgili paydaşların çıkarını korumak ve verimliliği arttırmak amacıyla bu yönetmelik İşçi etkisini değerlendirmek için çalışır İşgücü piyasası. Gelişmiş ve Az Gelişmiş ülkelerin verileri toplamış ve yönetimin düzenli etkisini değerlendirmek için sıradan bir OES regresyon modeli uygulanmıştır. Bu institutions ve yönetmelikler Çalışma dayalı İşçi piyasasının genel verimliliği artırmak için, hangi amaç ve hedefleri elde olmadığını anlamaya bir girişim Laior armions ve geliştirilen ve daha az sosyal geliştirilen ülkede İşgücü piyasası, verimliliği koruma piyasa Kurumları verimlilik teorisi sonucu yönetimin daha repa ation, İşçi sendikaları ve sosyal koruma İşgücü piyasası verimliliği üzerinde bazı önemli pozitif bir etkiye sahip olmasına rağmen, değişkenler de diğer bazı yollarla İşgücü piyasası verimliliği üzerinde olumsuz bir etkiye sahip olduğunu göstermektedir. Ayrıca, sonuç bu etkilerin önemli ölçüde gelişmiş ve az gelişmiş ülkeler arasında hangi pazarda bozulma formlarının oluşum farklılıklarını gösterir

DEDICATION

*I dedicate this research work to the Almighty Allah, and to the entire members of
Yau's Family.*

—

ACKNOWLEDGMENT

I would like to express my humble gratitude to my Supervisor and adviser, Prof. Dr. **Sevin Uğural**, for her supervision, advice, and guidance, as well as giving me extraordinary experiences throughout this research work and my master's program in general. Her experiences and passions have truly inspired and enrich my growth as a student. Actually I am indebted to her more than she knows.

My endless thanks go to my entire family, for their unwavering support, advice and care. The everlasting prayers from my dear mother (Hajiya Maryam), the tremendous support from my generous father (Alh. Ya'u Abdulkarim), the constant courageous words from a caring brother (Mustapha Ya'u), among others, remain a legacy, that could not be overemphasized.

The company of compassionate friends remains a hint to every success; my course mates Abdurrahman Nadani and Zainab Bello, my housemate Hayyat Salih, my best friend Abubakar Abdulhamid, among others explained the real meaning of friendship to my life. I have no single word to express my appreciations, but they really mean so much to me. Down beneath my heart, is where I keep a friend.

TABLE OF CONTENTS

ABSTRACT.....	iii
DEDICATION.....	iv
ACKNOWLEDGMENT.....	v
LIST OF TABLES.....	xi
1 INTRODUCTION.....	1
1.2 Background of the study.....	3
1.3 Statement of the problem.....	5
1.4 Aim and Objective of the Study.....	5
1.5 Significant of the Study.....	5
1.6 Scope and Limitations.....	6
1.7 Study Questions.....	6
2 EMPIRICAL LITERATURE REVIEW.....	7
2.2 Literature Review.....	7
2.3 Theoretical Framework.....	18
2.3.1 Labor market Theory.....	18
2.3.2 The Wage Efficiency.....	19
2.3.3 Labor Union Theory.....	19
2.3.4 Concept of Minimum Wage.....	20
2.3.1 Concept of Social Protection.....	21
3 METHODOLOGY.....	22
3.1 Introduction.....	22
3.2 Source and Nature of Data.....	22
3.3 Techniques of Data Analysis.....	23

3.4 Definition of Terms.....	23
3.4.1 Dependent Variable.....	23
3.4.2 Independent Variables.....	24
3.5 Model Specification.....	26
4 REGRESSION ANALYSIS AND INTERPRETATIONS.....	28
4.1 Introduction.....	28
4.2 Developed Countries.....	28
4.2.1 Diagnostic Tests.....	29
4.3 Less Developed Countries.....	33
4.3.1 Diagnostic Tests.....	34
5 RESEARCH FINDINGS.....	37
5.2 Answer to the Study Questions.....	40
6 CONCLUSION AND RECOMMENDATION.....	43
6.1 Conclusion.....	43
6.2 Policy Recommendation.....	44
REFERENCES.....	47

LIST OF TABLES

Table 3.1. Model Coefficients.....	28
Table 3.2. Expected Signs of Coefficients.....	28
Table 4.1. Developed Countries Regression.....	31
Table 4.2. Multicollinearity Test.....	33
Table 4.3. Heteroskedasticity Test.....	33
Table 4.4. Serial Correlation Test.....	34
Table 4.5. Less Developed Countries Regression.....	35
Table 4.6. Multicollinearity Test.....	37
Table 4.7. Heteroskedasticity Test.....	37
Table 4.8. Serial Correlation Test.....	39
Table 5.1. Summary of Coefficients.....	40

Chapter 1

INTRODUCTION

1.1 Introduction

Employment (Job creations) is vital in every economy, it's the path through which individual families and groups escape the chain of poverty (United Nation, 2013). Any country or economy that successfully provides a high level of employment to its citizens is considered to be a stable and prospective economy. In fact, employment level has been one of the most widely means of measurement used in assessing the development level among countries. It was a result of these paramount important that path the way for the establishment of many international labor organizations like International Labor Right Forum (ILRF) in 1986, Fair Labor Association (FLA) 1999, International Center For Labor Union Right (2005) and International Labor Organization (ILO) which is a United Nation agency established in 1919 with 185 member nations, with the soul aim of dealing with labor related issues, especially international labor standard and social protection among various stakeholders in labor market. So also, various individual countries had put in place so many labor institutions and regulations like national labor union, minimum wage rate and retirement age among others, with the aim of improving the effectiveness of the labor market, ultimately to create more employment opportunities, improve the level of labor productivity, among others. The level of these institutions and that of government regulation highly differs across diverse countries. That is to say while some countries have high level of government regulations, high level labor unions

density and Social protection institutions, other countries have very low level of that, in terms of magnitude of government interventions (regulations), labor union density or social protection institutions. Previous research has shown that mostly developed countries have higher density of labor unions and social institutions than less developed countries, while the less developed countries have higher level of government regulations than the developed countries. According to the neoclassical theory a dichotomy between the real and monetary field is quite an essential, in the long run the monetary field has no influence on variables like economic growth, employment rate or income distribution level. Money remains neutral and also determines the price level; it is a veil that covers the actual field. Labor market belongs to that field. It is also a market just like other commodity market. Thus the neoclassical theory assumed that the labor market comes to its equilibrium if the price of labor (the real wage rate), is flexible. That means unemployment is caused by the problem of labor market inefficiency, not a problem of a lack of demand. With the absence of market distortions, the labor market will lead to full employment at all times. Trade Unionism does not have single consensual theory, but many pioneers contributed some of their perspectives or theories. These theories are revolutionaries. Philosophers like Marx, Engels and Sydney Webb, Hoxie and Labor leader like Mitchall. Some Important trade unionism theories include.

The Political Revolutionary Theory for Labor Movement by Marx, (Maxism and Labor Movement, Sam Richards and Paul Saba, 2003) is based on Adam Smith's labor value theory. This theory states that the short run aim of trade union is to tackle high level of competition among labor, and the ultimate objective is to overthrow capitalist. Trade union is just like a class struggle, and proletarians have nothing to lose. Webbs Theory of Industrial Democracy is referred to as the Bible of trade

unionism. According to Webb, trade unionism is a kind of extended democracy from political phase to industrial phase. He agreed with Marx theory of trade unionism, but he considered collective bargaining as a means of strengthening labor.

In order to justify the impact of government regulations and labor union density on the efficiency of the labor market, the research applied an ordinary least square technique, on a cross-sectional data, drafted from both developed and less developed countries to assess this impact, precisely on the labor market efficiency. The research makes use of secondary data that are mostly obtained from the international economic institutions, such as the World Bank, international monetary fund (IMF) among others.

1.2 Background of the Study

Labor market much like other markets, is an interaction between the buyers (employers) and sellers (employees) of the labor, where individuals (labor forces) are willing to offer their services and the employers (industries, government) are willing to employ them at a given wage rate, that is basically determined by the forces of demand and supply in a free market. This means, when there are more people that are willing to offer their services than the available industries or sectors that are willing to employ them, the labor prices (wages) set to be lower. The reverse is also the case, when the demand of labor is higher than the available labor force in the market, the prices (wages) will definitely be high in a free market. This fluctuations or volatility makes labor market such a crucial sector in every economy, and make it necessary for governments to intervene and regulate the activities of the market with certain regulation tools. Government regulations in labor market refer to the interventions of government in the activities of the labor market, by providing certain rules and

regulations that will guide the overall affairs of the labor market, with the main objectives of improving the efficiency in the market, ultimately to achieve sustainable economic growth and development in a country. Labor unions refer to groups formed by the workers, with the main objectives of protecting the right and liberty of their members, from the highly competitive advantage on the side of the industries and government over an individual worker. These unions are more commonly in the advanced countries, than in the less developed countries. Government regulations and labor unions, often affects all the stake holders in different ways, it affects mostly the workers, so also the industries, and then the economy in general.

There are many divergences between developed and less developed countries, according to the World Bank, developed countries are those countries that are developed in terms of economy and industrialization. The developed countries are also known as advanced countries or the first world countries, as they are self-sufficient nations. These countries are characterize with high level of industrialization, high literacy, advanced technology, high level of human development, high level of output (GDP), high standard of living, high level of infrastructural development, higher per capita income among orders. On the other hand, less developed countries lack all or most of these developmental facilities listed above. less developed countries, developing countries or emerging countries are characterize with low level of industrialization, high illiteracy, low level of technology, poor human development, low level of output (GDP), low standard of living among others. Less developed countries mostly rely on advance (developed) countries for their development. The World Bank classifies countries according to their GNI per capita income, low income (\$995 or less) and lower middle income

(\$996-\$3,945), as developing countries with an upper middle income (\$3,946-\$12,195); and high income (above \$11,906) as developed countries (World Bank 2014). This study also used this method and categorized both low income and lower middle income countries as less developed countries, and upper middle income and high income countries are categorized as Developed countries.

1.3 Statement of the Problem

Despite the fact that labor market attracted the interest of many researchers and philosophers, it is still a debatable topic among contemporary researchers, on how the government regulations and labor unions affect the efficiency in the labor market. This debatable idea, has posed many doubts, on the side of policy market and other government institutions, on whether to improve the level of intervention in the labor market, or to let it operate freely without interventions.

1.4 Aim and Objectives of the Study

The main objective of this research study is to assess how exactly the labor market efficiency in terms of unemployment rate is affected by the level government regulations and labor unions and other social protection institutions; Other Objectives include;

- a. To find out whether the effects of labor market regulation and Labor unions differs cross borders (developed and less developed countries).
- b. To see how labor market; react to certain changes and various levels of government policies and interventions.
- c. To be able to conclude on whether the labor market regulations and labor unions are distortions or enhancement to the efficiency to labor market.

1.5 Significance of the Study

Hopefully, this study will help government institutions and various policy makers in making crucial economic decisions on whether to increase or reduce the level of government intervention, labor unions and social protections institutions in a country. The study will also help the government in having a clear perspective or view of the labor market, and how various changes in policies affect the efficiency in the Labor market.

1.6 Scope and Limitations

Despite the fact that labor market efficiency is characterize with so many indicators, this study emphasis basically on one critical labor market efficiency indicator, which is unemployment rate. Moreover, the study only used 2014 data from 80 United Nation registered countries. These consist of 40 developed and 40 less developed countries.

1.7 Study Questions

- a. How Labor union density affects the labor market efficiency (unemployment rate)?
- b. How government regulation affects the labor market efficiency?
- c. How do social Protection institutions affect unemployment rate?
- d. What are the differences and similarities on the impacts of government regulations, labor unions and social protections on labor market efficiency between developed and less developed countries?

Chapter 2

EMPIRICAL LITERATURE REVIEW

2.1 Introduction

Labor market refers to the interaction between the employers of labor and the workers where wages are determined through the forces of demand and supply by the stakeholders, namely the employers and the employees. Labor market could be viewed from local, national or international perspective, it consists of different types of employees, with different qualifications, skills and technical knowhow. The research studies conducted on the labor market over the past decades reveal an immense prospect in the overall international labor market. There was tremendous development in the real wages and bonus given to the employees by their employers, an absolute increase in leisure time for the workers, through shorter working hours, sick leave, and vacations time. Moreover, workers enjoy reasonable job security, safety and social protections which ultimately raise the overall efficiency of the labor market. Prospect in the labor market has interacted with some social changes, which include a rise in women labor participations, the elimination of full-time juvenile labor. The level of child labor reduction is also another sensitive progress in the labor market over the years.

2.2 Literature Review

Labor market in general is quite a very wide concept; it is such a large field of study that attracted a large number of researchers with diverse interests. Many researchers have conducted various studies on the labor market in general, or labor market

regulations, unions and social protections with different aims and objectives. Some researchers ultimate aims, was to figure out the effect of the labor regulation on the overall economic growth, while others conducted their studies with the sole aim of finding the effect of the labor regulation on a specific sector of the economy. These diverse research works came up with contradicting outcomes, where some research works show a positive relation between labor regulation and some economic variables, while some other studies show a negative relation and some others show neutral relations. In order to justify the literature, this part of the research work will consist of studies that found positive, negative and even neutral relationship between the labor market institutions, regulation laws, and other economic variables, such as gross domestic product (GDP), unemployment rate, among others.

An interesting research work titled as “The Labor Regulation” was presented by five co-authors, Simeon Djankov, Rafeal La Porta, Florancio Lopez de silani, Andrei Shleifer and Juan Botero, at Yale University, investigated the regulations in the employment laws of labor markets, labor unions and other social protection laws in 85 diverse countries. The study arrived at a conclusion, that developed countries often regulate labor less than the less developed countries do, but it was also noted that the rich countries have more reasonable social security systems. This is because political power of the advanced countries is associated with stronger labor regulations, and more functional security systems. It is also apparent that the Socialist and French colonized countries have higher rate of government intervention in the labor market, than countries with Common law system (British colonized countries).

The study examines the labor regulation laws, across 85 countries, through three main institutional choice theories, which include the Political theory, Efficiency theory, and Legal system theory. Efficiency theory states that institutions are made to serve the general needs of a society by providing efficiency. So each society selects and implements a system of institutions or laws that is optimal for their environment. On the other hand, the political power theory believes that institutions are formed and shaped by the political power with the sole aim of benefiting themselves at the expense of those that are out of power. This theory holds in both voting and interest group politics, because in either way, the winners benefit at the expense of the losers. Lastly, legal theory views institution as the regulations that are created by country's legal system, common and civil law countries use different forms of strategies to address market failure in various ways. The paper constructed a new data set in order to describe the legal protection of workers in 85 different countries. These data include; employment laws, industrial relations laws, and social security laws.

The outcomes of the research show that the efficiency theory which believes that labor regulation and unions and other social protection agencies increase efficiency in the labor market is inconsistent. The evidence also contradicts the political theory, which views heavier regulation of labor as a result of strong political power. Finally, the study shows a broad consistency with the legal theory, which sees regulation among countries as being largely shaped by the country's legal structure, which has something to do with the country's historical background and their legal system. Although, these results do not mean that efficiency theory is invalid, neither do they mean that politics is unimportant, but it only rejects the view that civil law is just a reflection of "Social Democracy". Though, the study shows that politics and politicians influence the intensity of labor market regulations in civil Law countries,

where basic regulatory style is highly affected by the political pressures. The paper also shows some indirect proves that the beneficiaries of the labor regulations and laws are likely to be the old workers and political supporters.

A research study by Abiodun Folawewo, titled “Weak Labor Unions and Institution Hurt Nigerian Workers”, tried to analyse the impact of institutions and regulations on the Nigerian labor market. The study focused on employment, unemployment and wage effects in the formal sector. It found that Nigerian labor market institutions and regulation laws negatively affect the quality and quantity of jobs in the both the public and private sector of the economy, as well as wages and even the productivity in the country. The workers become more vulnerable due to the weak nature of Nigerian labor institutions and regulatory frameworks, instead of getting more protected in the cause of improving the market efficiency. The study particularly used two main variables which are union density (UD) and minimum wage index (MWI). The union density variable is measured as the proportion of union membership, that is the total number of registered members of Nigerian Labor Congress, and the proportion of the total number of Trade Union Congress (TUC)) to the total number of labor force. The union density variable is used as a measurement of the effect of labor union activities on unemployment, employment and the real-wage. In the study, both the minimum wage index (MWI) and the union density (UD) were measured at aggregate and sectors (public and private sectors) levels. The outcome of the study reveals that, the large informal sector, which was as a result of the high level of regulations and regulatory bodies in the market, result in inefficiency in the Nigerian labor market. Those that benefit from this ineffectiveness are mostly the employers at the expenses of the employees who remain the victims of the misfortune, through high level of depression which includes casualization of

employment, low payment, exposure to health hazard and other basic rights denials. Another interesting finding of the study is the issue of contract employment, where firms do not employ workers directly; rather they get into contracts with some employment agencies. In this sense, it's the employment agencies that recruit the workers, and then give them out in form of contract to the firms, in this scenario, the employees often do not have direct contact with their employers that they work for, but rather, they are answerable to the recruitment agency that employs them. Through this system, the recruitment agencies make huge profit at the expenses of the workers, because they often pay them less than the standard or the due amount they are entitled. In addition, contract workers are not regarded as permanent workers, so they are not entitled to benefits that permanent workers do. The main effects of this system is the lack of motivation and incentives that will improve productivity of the workers which result to a persistence widening gap in inequality distribution of income in the country. The outcome of the research shows that minimum wage index have positive effect on unemployment. This means the higher the minimum wage, the more employers are likely to lay off workers, thereby raising the rate of unemployment in the country. So also, labor union density does not have significant effect on unemployment. This result shows the possibility of firms reacting negatively to the union membership by their employees. On the other hand, the average minimum wage index when regressed on employment shows an apparent negative relation to employment, which indicates that minimum wage legislation, decreases the aggregate employment level in the country. The union density has a positive but not significant effect on employment level. This outcome indicates that even though as more people join the labor force they are more likely to join the labor unions, so the increase in union membership does not have significant influence on

employment level in the country. The results obtained from wage regression indicate that the minimum wage index has significant positive effects on wage; this means that as the minimum wage rises there will be the tendency for general wages to also increase. The main idea extracted from the study is that although institutions and regulation laws are made for specific objectives, they have diverse impact on different economic variables in a country. So then, countries should be extremely cautious when they decide on what policies, institutional and regulatory laws to implement and also on how to implement those policies, so that it would not yield an unintended outcome in the economy.

A research study conducted by some popular experts that include David Neumark, J.M Ian Salas and William Wascher titled “Revisiting the Minimum Wage” cast some forms of doubt on some of the existing research methodology and data modeling that economists used in the previous studies. The research study found that minimum wages pose a tradeoff of higher wages for some workers against job losses for other workers and the study suggest that policy makers should bear in mind this tradeoff when making decisions about increasing the minimum wage. These same scholars have written previously, that in the short run, an increase in minimum wage help some families get out of poverty and also make it more likely that previously non-poor families may fall into poverty. The study generally supports the idea that raising the minimum wage would have varying effects across U.S. regions and industries, even if it doesn’t produce massive negative effects on the whole Economy.

In a research study published by Arindrajit Dube, T. William Lester and Michael Reinh, titled “Minimum Wage Effect Across Borders ” November, 2010. The study

looked at sectors in states with low-wage that eventually raised the minimum wage and compared them with those in bordering areas of the United State where there were no minimum wage or mandate wage changes. The study found that there is a strong income effects but no any employment effects of the minimum-wage increases.

A research paper that was published by David Lee at Princeton and Emmanuel Saez at UC-Berkeley titled “Optimal Minimum Wage Policy in competitive labor Markets” emphasizes a theoretical model that pave way to some support to the empirical insights of Krueger/Card. The study concludes that minimum wage is a useful tool if the government aimed at redistribution of income in favor of low wage workers in developed countries, and this remains true in the presence of optimal nonlinear taxes/transfers. The study however suggests that under certain labor market conditions, it will be better for the government to subsidize low-wage workers, so as to keep the minimum wage relatively low.

Matthew Walters and Lawrence Mishel presented a briefing paper titled “How Unions help all Workers”. The authors believed that unions have a substantial impact on the wages and working situation of both unionized and non-unionized workers. The paper presents current data on union’s effect on wages, Job protection and distribution on income. The paper concludes that unions help in raising the wages of unionized workers by roughly 20% in United State. So also reduce wage inequality because union raises the wages of low and middle income earners more than for higher-wage workers. The paper also reveals that strong unions set a pay standard that non-union employers follow. The impact of unions on non-union wages is almost the same in the long run with the union wages. Unionized workers receive

better pension plans and are more likely to have a guaranteed benefit in their retirement age. The most essential advantage enjoy by labor union members is fringe benefits. Unionized workers are more likely to receive paid leave and other health benefit than non-union workers.

Andrea Ichino and Regina T. published an article titled “The Effect of Employment Protection on Workers Effort”. The paper explains that only little is known about the impact of these regulations on the employees’ behavior. The paper provided evidence on the latter question using data from a large Italian bank. The analysis is based on weekly observations for 545 men and 313 females hired as white-collar workers between the periods of January 1993 to February 1995. These employees gain employment protections 12 weeks after employment, after observing the behaviors of these employees for a complete one year. The result shows that, particularly for men the number of absence days per week increases significantly immediately the employment protection is granted. The research paper suggests that the provision of employment protection has a significant impact on the level absenteeism. The authors believed that there may be alternative explanations based on career concerns or on learning about social norms would predict a smooth relationship between absenteeism and tenure instead of the observed discrete jump.

In a research study titled “Psychological and physical Well-Being during Unemployment” by McKee-Ryan, Song Z, Wanbergc CR and Kinicki AJ, used theoretical models to organize the diverse unemployment literature, and used a meta-analytic technique to examine the impact of unemployment on worker’s well-being across 104 empirical studies with 437 effect sizes. The research study found that an unemployed individual have less psychological and physical well-being, than

their employed counterparts. The study also found that unemployment duration and sample type moderated the relationship between mental health and unemployment, but not the current unemployment rate and the amount of unemployment benefits in European countries. So also within unemployed samples, work-role centrality, coping resources cognitive appraisals, and coping strategies displayed stronger relationships with mental health than did human capital or demographic variables. Lastly, the authors identify some gaps in the literature and also proposed some directions for future researchers.

An article “Labor Regulations, Unions and Social Protection in Developing Countries” conducted by Richard B. Freeman, was mainly aimed at accessing the impact of the variables (government labor regulation, unions and social protection), on the labor market. The research work came-up with so many findings.

Firstly, Labor institutions actually vary greatly among developing countries much more than they vary in the advanced countries. Unions and collective bargaining are less important or even weaker in developing countries than in the advanced nations, on the other hand, government regulations are nominally stronger in the less developed countries than in the advance countries. Another important finding of the research is that many developing countries comply with the idea of minimum wage regulations which produce spikes in wage distributions around the minimum in informal sectors. Most recent studies found modest adverse effects of the minimum wage on employment so that the minimum wage raises the total income of low paid labor and ultimately improve equality in income distribution, but the reverse is the case in some other countries where minimum wages cause “spill-over” to the unregulated or informal sector, producing spikes in the wage distributions there as

well. That simply mean employment protection regulations and other related laws make output and employment to shift to informal sectors and reduce the level of gross labor mobility. One more essential finding of this research is that the mandated benefits increase labor costs and reduce employment modestly while the costs of others are shifted tremendously to labor, with some level of variation among different countries. Contrary to the Harris-Todaro two sector model where rural-urban migration adjust in other to produce a positive correlation between unemployment and wages across different sectors and regions, the paper found that wages and unemployment are negatively correlated by the “wage curve”. Cross-country regressions show inconclusive results on the impact of government regulations on growth while studies of country adjustments to economic shocks, such as balance of payments problems, find no difference in the responses of countries by the strength of labor institutions, and that the labor institution can be critical when countries experience great change, as in China’s growth spurt and Argentina’s preservation of social stability and democracy after its 2001-2002 economic collapse. Cooperative labor relations tend to produce better economic outcomes. The informal sector increased its share of the work force in the developing world in the past two decades.

An article titled “Labor Market Institutions Around the World” by Richard Freeman, examined the differences across countries in term of labor institutions and regulations as the major explanatory factor for the persistence divergence in the economic performance of countries. The study reviews what economists have learned about the effects of labor institutions on economic outcomes in diverse countries, and then figured out three essential ways, in which labor institutions affect economic performance: these include incentives, efficiency bargaining, and

information communication system. The labor market institutions serve as a means of incentives in the labor market, by providing the stakeholders with certain protections. It also provides efficiency in terms of bargaining between the workers and their employers on the basis of wages and salaries, and it also serves as informant in the labor market through providing both the workers and the employers with the needed information in the market. The research study also shows how labor market regulations, laws and institutions effects the aggregate economic variables, which include the effect of labor market institution and regulation laws on the employment and unemployment production and economic growth levels in the advanced countries. The result shows that labor institutions reduce the income gaps (income inequality) in an economy, but found some significant effects on other aggregate outcomes, such as employment and unemployment. Given weaknesses in the cross-country data on which most studies focus, the paper argues the researchers should focus more on the use of micro-data, simulations, and experiments to illuminate how labor institutions actually affect the efficiency in the labor market and its impact on other economic variables such as employment level, production and the overall economic growth in a country.

From the above review studies, we can clearly see how economic researchers all around the globe were attracted by this interesting field of the economy (Labor market). These research studies were conducted in different part of part of the world, which consist of developed and the less developed countries, with diverse aim and objectives of the research work. Some studies were basically aim to see or to find out how the labor market works in general, and some other studies aimed on how governments and other regulation bodies and institution affect the different economic variables which include, productivity, unemployment, industries among others. It is

also important to note that the above studies resulted in some contradicting result, due to the fact that while some studies believe that this contradiction must have been as a result of different ideology in terms of the variables that were used in the regression analysis or some other measurement errors which are related to the sample selections. Having the fact that while some studies only considered the developed nations, other research studies concentrated on less developed countries. In either way, there is highly need for more generalized, more technical, unbiased study. It is quite hopeful, that in a research work, were all countries are equally represented and relevant explanatory variable are collected in a highly technical way, the actual impact of labor market regulation and institution on the efficiency of the labor market will be figured out in a more generalized form. The research work is basically on two hypothesis, firstly is to find out whether the labor unions and government regulation increase the efficiency in the labor market or not. The second hypotheses is on whether the effect of labor unions and government regulations on the efficiency of labor market are the same across the developed and less developed countries or not.

2.3 Theoretical Framework

2.3.1 Labor Market Theory

The standard labor market theory believes that labor is like any other commodity or resources, in which the market determines its allocation and its costs. In other words, the market determines where people will work and how much they will get paid, (Labor Economics). This theory based on some assumptions which include

- a. The most essential motivation in the labor market for worker is a wage or other beneficial compensation.

- b. Workers are much fungible, that means you can substitute one for another and it makes little or no difference.
- c. Workers are mobile that means they can move freely from one place to another, depending on where there services are demanded
- d. Wages are flexible, that means it can increase and decrease overtime.

3.3.2 The Wage Efficiency Theory

The Wage efficient theory was introduced by Alfred Marshall. The theory argued that employers should pay their employees a higher wage than the normal market equilibrium wage, so that they motivate the workers, ultimately to increase Labor efficiency and productivity. Marshall believed that by applying Wage efficiency theory, employers will reduce the cost of frequent replacement of employees and have higher profit.

2.3.3 Labor Union Theory

There is no single theory about trade unionism, because many philosophers have contributed to this concept of unionism, philosophers like Marx, Sydney Webb, Hoxie, Mitchall among others, have diverse views on the concept of unionism, below are some Important theories of trade unionism .

Political revolutionary theory of Labor movement by (Marx and Engels): This theory is based on theory of labor value by Adam Smiths. The theory states that, unionism eliminates competition among labor in the short run, but the ultimate purpose of Trade unionism is to overthrow capitalist businessman. According to this Theory, Trade union is just a class struggle, ultimately to protect the right, interest and liberty of their group members.

Theory of industrial democracy by (Webbs): Webb's in his book titled 'Industrial democracy' which is regarded as the bible of trade unionism, states that unionism is a form of extension of democracy from political field to industrial field. Webb agreed with Marx to some extent, that trade unionism is a class struggle and modern capitalist state is a transitional phase which will lead to democratic socialism. According to Webbs, trade union is collective bargaining which strengthens labor force. Theory of union control of industry by Cole (1913): Cole stated his view on the concept of unionism in his book titled "World of Labor", his view on the concept of unionism is somehow in between the views of Webb and Marx. He agrees that unionism is class struggle and the ultimate is the control of industry by labor, but not as a form of revolution as was viewed by Marx.

2.3.4 Concept of Minimum Wage

Minimum wage concept was first introduced in the early 19th century, and widely separated to about 90 percent of the global countries. Currently most countries have statutory minimum wage. Minimum wages can be set in different ways and can have fundamentally different roles in different countries. It can also be set on an hourly or monthly basis. It is mostly set by governments or through the collective bargaining process. Minimum wage can also be autonomously set by the government with or without consultation with trade unions and employers or trade associations. The efficiency of minimum wage differs significantly across countries, but the ultimate aim of minimum wage in every country is to protect the workers from unfavorable competitions and to reduce the gap of inequality in the country, through government interventions.

2.3.5 Concept of Social Protections

Social protection has been a domestic concern of developed nations, which have for long developed some technical institutional arrangements in order to protect their citizens against risk and other uncertainties. On the other hand, social protection has however been neglected and undermined by the less developed countries, or addressed with inappropriate tools, in most less developed countries. This misfortune has exposed the workers to so much risk and other uncertainties, and makes the workers more vulnerable in the less developed countries.

Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

Although labor market efficiency has so many Indicators, this research study focus on the main Indicator in order to critically examine the impact of labor union, government regulation and social protection on the efficiency of the labor market. This indicator is unemployment rate. Unemployment rate is the basic and fundamental problem in every labor market, so also in the economy in general. Whenever we talk about labor market efficiency, the first thing that comes to our mind is unemployment rate or the employment level, because is only when there is an appropriate level of employment in the labor market that we can start talking about labor market efficiency. Therefore an increase in employment level indicates a kind of improvement in labor market efficiency and vice-versa. This research study used the efficiency theory as framework, in order to assess the consistency of the efficiency theory in labor market institutions.

3.2 Sources and Nature of Data

This study implement a cross sectional data (2014) which covers 80 countries, which consist of 40 developed and 40 less developed countries , These countries include Kenya, Algeria, Argentina, Austria, Austrailia, Bangaladash, Brazil, Camerroom, Canada, China, Cuba, Cyprus, Demark, Egypt, Ethopia, Finland, France, Germany, Ghana, Greece, India, Iran, Ireland, Italy, Japan, Kuwait, Libya, Malta, Malysia, Maxico, Morocco, Netherland, Niger, Nigeria, Norway, Portugal, Russia, Saudi

Arabia, Senegal, Slovenia, Somalia, South Africa, Spain, Sweden, Tunisia, Turkey, United Arab Emirates, United Kingdom, United States and Uruguay among others. This is a sample drawn from 196 United Nations registered countries that have the relevant data. The data used in this research study are obtained from secondary sources namely; World Bank WDI, United Nations (UN), International Labor Organization (ILO), International Monetary Fund and other local sources which include various labor institutions and central banks.

3.3 Techniques of Data Analysis

This study conducted an ordinary least square (OLS) regression analysis to ascertain the causal effect of the independent variables minimum wage rate (MWR), labor union density (LUD), social protection (SOPRC), on the dependent variable unemployment rate (UER). Several correction techniques have been applied in order to test and correct the basic OLS problems, which include, perfect collinearity, heteroskedasticity among others. These fundamental OLS problems have been carefully studied and appropriate correction techniques applied in order to analyze and assess reliable causal effects of the regression coefficients in the models on the dependent variables.

3.4 Definition of Terms

3.4.1 Dependent variables

- a. Unemployment rate (UER): This variable measures the rate of the working forces that are willing and able to work, but could not secure a job within a specific period of time (three months). It's a percentage rate of the total labor forces that are unemployed. Unemployment statistic is a key indicator of the development level of every country; that is why some national and international institutions publish the level of unemployment

rate periodically. While advanced countries like the United States measure unemployment rate monthly, other less developed countries like Kenya, Senegal, and Nigeria measure their unemployment rate quarterly or annually. This study makes use of 2014 annual unemployment rate data.

$$\text{Unemployment rate} = (\text{Unemployed} / \text{Labor force}) * 100$$

3.4.2 Independent variables

- a. **Minimum Wage Rate (MWR):-** This refers to the formal minimum cost of employing a worker, per hour, per day or per month. This is basically set by the government of a country as a formal fixed minimum cost of Labor per hour within a country, it is a means through which government regulate labor market with the main aim of protecting workers from deprivation by the employers, ultimately to have a fair level of income distribution and to achieve efficiency in the labor market. Minimum wage rate varies significantly across countries. While some countries like Germany have high level of minimum wage, which is as high as \$10.34 per hour, other countries like India have very low level of minimum wage rate, which is as low as \$1.02 per hour. With regard to the Efficiency theory of labor market institutions, we expect to see a negative (-) relations between minimum wage rate and unemployment rate. Because efficiency theory believes that labor institutions and regulations help in improving efficiency in the labor market (reduce unemployment).

- b. **Labor Union Density (LUD):-** Labor Union in its absolute term refers to an organization formed by the employees, with the main aim of representing the collective interest of workers in negotiation with employers over certain workers/employers related issues, which include wages, working

hours and working conditions among others. Literature has shown that developed countries mostly have higher density in term of labor unions than the less developed countries. This variable measures the proportion of employees that are registered to a labor union (organization). According to the efficiency theory of labor market regulations, we expect to see a negative (-) relations between labor union density and unemployment rate. That means an increase in labor union causes a reduction the level of unemployment, and enhances efficiency in the labor market.

- c. Social Protections (SOPRC):- Social protection has many definitions in general, it basically refers to the benefits that are available to the civil society and households, it is a combination of certain agencies that provide the basic needs of the general society (individual/households) which are aimed at reducing hardship and deprivation on the less privileged, elderly and disable people in the society. These institutions include human right protection institutions, appropriate pension schemes, unemployment benefit, security, and adequate Health care facilities among others. We also expect to see a negative (-) causal effect between Social protection level and unemployment rate, having the fact that this study basically used the efficiency theory as a framework.
- d. Technology (TECH):-This variable measures the level of technology in each country, which consists of industrial machineries and sophisticated scientific equipment, which help in simplifying human's life, with the general aim of increasing output and efficiency in production.

Economically, and in accordance to the literature, we expect a positive (+) causal relationship between technology level and unemployment rate. This is realistic, due to the basic fact that capital and labor are interchangeable and often substitute each other in production process.

- e. Gross domestic product (GDP):- Gross domestic product (GDP) is the best way to measure a country's economy (World Bank). It includes all goods and services produced within the border of a country. Gross domestic product can be calculated using the standard formula: $C + I + G + (X-M)$. This variable measure the total domestic product in a country within the year (2014). Economically, we expect to see a negative (-) causal effect between gross domestic product and unemployment rate, due to the fact that as output increases, employment level is also expected to increase because more workers are required in order to increase the level output (GDP).

3.5 Model Specification

To analyze the impact of labor unions and government regulation on labor market efficiency, a regression model is employed. The model tries to explain how the variables minimum wage rate (MWR), labor union density (LUD) and social protection (SOPRC) affect unemployment rate (UER). This model was estimated using two set of data, which include, data from 40 developed countries and the data from 40 less developed countries separately.

MODEL

$$\ln(\text{UNEMP}) = \beta_0 + \beta_1 \ln(\text{LUD}) + \beta_2 \ln(\text{MWR}) + \beta_3 \ln(\text{SOPRC}) + \beta_4 \ln(\text{TECH}) + \beta_5 \ln \text{GDP} + U_{..}(I)$$

The table below states the full meaning of abbreviation of the variables used in the regression model. All the variables are in logarithm system, so they are all in percentage

Table 3.1. Model Coefficients

UNEMP	unemployment rate (in percentage)
MWR	Minimum Wage rate (dollar/per hour)
LUD	Labor union density (percentage of Labor force)
SOPRC	Social Protections (in percentage)
TECH	Technology level (in percentage)
GDP	Gross Domestic Product (per capita)

Based on the efficiency theory, which states that labor market institutions improve the labor market efficiency, we expect to have the following signs in each of the model coefficient as shown on the table below.

Table 3.2. Expected Signs Of Coefficients

COEFFICIENT	SIGN
β_1	NEGATIVE (-)

B2	NEGATIVE (-)
B3	NEGATIVE (-)
B4	POSITIVE (+)
B5	NEGATIVE (-)

Chapter 4

REGRESSION ANALYSIS AND INTERPRETATIONS

4.1 Introduction

This chapter presents, analyzes and interprets regression outputs that are obtained using E-view regression application. The data used in this regression models include unemployment rate (UNEMP), minimum wage rate (MWR), labor union density (LUD), social protection (SOPRC), technology (tech) and gross domestic product (GDP). The data are obtained from the sample of 80 countries from the united nation registered countries, and are grouped into two separate groups. The first group consists of 40 developed countries and the second group consists of 40 less developed countries. Ordinary Least Square (OLS) is applied on each of these groups separately, and the various regression coefficients are interpreted accordantly, with regard to the level of significances of the each coefficient.

4.2 Developed countries

$$\ln(\text{UNEMP}) = \beta_0 + \beta_1 \ln(\text{LUD}) + \beta_2 \ln(\text{MWR}) + \beta_3 \ln(\text{SOPRC}) + \beta_4 \ln(\text{TECH}) \\ + \beta_5 \ln(\text{GDP}) + u \dots(i)$$

The Table below presents an e-view output result, obtained from of regression model (i), which was regressed using data from 40 developed countries. The outcome of this regression is explained below.

Table 4.1. Developed Countries regression
 Dependent Variable: LOGUNEMP
 Method: Least Squares
 Date: 02/24/16 Time: 12:23
 Sample: 1 40
 Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.593907	3.830680	-0.416090	0.6800
LOGLUD	-0.727010	0.194534	-3.737183	0.0007
LOGMWR	-0.192696	0.148310	-1.299278	0.2026
LOGSOPRC	2.134951	0.607852	3.512290	0.0013
LOGTECH	0.719300	0.168822	4.260701	0.0002
LOGGDP	-0.337930	0.206740	-1.634564	0.1114
R-squared	0.761250	Mean dependent var		1.966177
Adjusted R-squared	0.726140	S.D. dependent var		0.656790
S.E. of regression	0.343709	Akaike info criterion		0.839438
Sum squared resid	4.016619	Schwarz criterion		1.092770
Log likelihood	-10.78876	Hannan-Quinn criter.		0.931035
F-statistic	21.68173	Durbin-Watson stat		2.255478
Prob(F-statistic)	0.000000			

From the above regression, three of the coefficients are statistically significant, these include, labor union density(LUD), social protection (SOPRC) and technology (TECH). minimum wage (MWR) and gross domestic product (GDP) are not significant.

Labor union density has a negative significant causal effect on the level of unemployment. The coefficient reveals that a 1% increase in level of labor union density causal 0.73% decrease in the level of unemployment, and the coefficient is significant at 1% significant level. This indicates that there is a significant negative causal effect between labor union density and unemployment rate in developed countries.

Minimum wage rate (MWR) shows a negative impact and on level of unemployment, but the coefficient is not statistically significant at 5% confidence

interval. That means there is no significant impact of minimum wage rate on unemployment rate in developed countries.

Social protection level (SOPRC) has a significant positive impact on the level of unemployment, the coefficient shows that when social protection level increases by 1%, unemployment rate also increases by 2.13%. That reveals a significant positive causal effect between social protection level and unemployment rate in the developed countries. The coefficient is statistically significant at 1% confidence interval.

Technology level (tech) has a positive significant impact on the level of unemployment. The coefficient shows that when technology level increased by 1%, the level of unemployment also increases by 0.72% . That means there is a significant positive causal effect between technology and unemployment rate in the developed countries.

Gross domestic product (GDP) reveal a negative but not significant impact on unemployment rate. This simply means there is no significant impact of gross domestic product on unemployment rate in developed countries.

4.2.1 Diagnostics' Tests

Table 4.2. (Multicollinearity Test)

	LUD	MWR	SOPRC	TECH	GDP
LUD	1.000000	-0.117777	-0.139915	-0.351872	0.257917
MWR	-0.117777	1.000000	0.292039	0.367943	0.175627
SOPRC	-0.139915	0.292039	1.000000	0.400028	-0.326682
TECH	-0.351872	0.367943	0.400028	1.000000	-0.213401
GDP	0.257917	0.175627	-0.326682	-0.213401	1.000000

The above Table shows correlation between the independent variables in the above regression model (i). The variables do not show any strong correlation between them, which is really good for ordinary Least Square regression. That means there is no problem of multicollinearity in the model.

Table 4.3. (Heteroskedasticity Test)

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
F-statistic	1.760550	Prob. F(5,34)	0.1476	
Obs*R-squared	8.226340	Prob. Chi-Square(5)	0.1442	
Scaled explained SS	10.29091	Prob. Chi-Square(5)	0.0674	
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 02/24/16 Time: 12:28				
Sample: 1 40				
Included observations: 40				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.486088	2.013258	1.731565	0.0924
LOGLUD	-0.176061	0.102240	-1.722042	0.0941
LOGMWR	-0.025972	0.077946	-0.333202	0.7410
LOGSOPRC	-0.190729	0.319463	-0.597028	0.5544
LOGTECH	-0.111211	0.088726	-1.253415	0.2186
LOGGDP	-0.152203	0.108655	-1.400793	0.1703
R-squared	0.205659	Mean dependent var	0.100415	
Adjusted R-squared	0.088844	S.D. dependent var	0.189242	
S.E. of regression	0.180640	Akaike info criterion	-0.447138	
Sum squared resid	1.109450	Schwarz criterion	-0.193806	
Log likelihood	14.94276	Hannan-Quinn criter.	-0.355541	
F-statistic	1.760550	Durbin-Watson stat	1.931633	
Prob(F-statistic)	0.147568			

The above Table shows Breusch Pagan Godifrey Test of heteroskedasticity in the above model (i). The p-value of the observed R-squared is 0.14, which means we cannot reject the null hypothesis of no heteroskedasticity in the model. That means the model is fine, and is free from the heteroskedasticity problem.

Table 4.4 (Serial Correlation Test)

Breusch-Godfrey Serial Correlation LM Test				
F-statistic	0.522206	Prob. F(2,32)	0.5982	
Obs*R-squared	1.264252	Prob. Chi-Square(2)	0.5315	
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 02/24/16 Time: 12:30				
Sample: 1 40				
Included observations: 40				
Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.248481	3.920189	-0.063385	0.9499
LOGLUD	0.016423	0.200984	0.081715	0.9354
LOGMWR	0.027461	0.154251	0.178028	0.8598
LOGSOPRC	-0.054277	0.619188	-0.087658	0.9307
LOGTECH	0.018172	0.172560	0.105308	0.9168
LOGGDP	0.032179	0.215109	0.149592	0.8820
RESID(-1)	-0.171433	0.194258	-0.882500	0.3841
RESID(-2)	0.062827	0.186599	0.336694	0.7385
R-squared	0.031606	Mean dependent var	1.18E-15	
Adjusted R-squared	-0.180230	S.D. dependent var	0.320921	
S.E. of regression	0.348643	Akaike info criterion	0.907322	
Sum squared resid	3.889668	Schwarz criterion	1.245097	
Log likelihood	-10.14643	Hannan-Quinn criter.	1.029451	
F-statistic	0.149202	Durbin-Watson stat	1.985485	
Prob(F-statistic)	0.992932			

The Table above shows a Breusch Godfrey serial correlation LM Test. The observed R-squared p-value is 0.53. This indicates that we cannot reject the null hypothesis of no serial correlation, so the model is good and free from the problem of serial correlations.

The above diagnostic tests show that Model (i) is good and is free from the basic ordinary Least Squared (OLS) problems, so we can accept the result. The adjusted R-Squared on the above output result (Table 4.1) is 72.6 which is really high and good for the model. It means the model explains 72.6% of variations in the unemployment rate. The F-statistic also shows that the coefficients are jointly significant at 1% confidence interval.

4.3 Less Developed Countries

$$\ln(\text{UNEMP}) = \beta_0 + \beta_1 \ln(\text{LUD}) + \beta_2 \ln(\text{MWR}) + \beta_3 \ln(\text{SOPRC}) + \beta_4 \ln(\text{TECH}) + \beta_5 \ln(\text{GDP}) + U \dots (I)$$

The Table below is an e-view regression output result, obtained using model (ii), which was regressed using the Data from 40 less developed countries? The outcomes are briefly explained below.

Table 4.5. Less Developed Countries

Dependent Variable: LOGUNEMP				
Method: Least Squares				
Date: 02/25/16 Time: 16:59				
Sample: 1 40				
Included observations: 40				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.642287	1.349989	-0.475772	0.6373
LOGLUD	0.021806	0.238858	0.091292	0.9278
LOGMWR	0.239544	0.066728	3.589858	0.0010
LOGSOPRC	1.213703	0.327431	3.706749	0.0007
LOGTECH	-0.183688	0.141086	-1.301954	0.2017
LOGGDP	-0.262939	0.073737	-3.565927	0.0011
R-squared	0.617895	Mean dependent var	1.944700	
Adjusted R-squared	0.561703	S.D. dependent var	0.573984	
S.E. of regression	0.380000	Akaike info criterion	1.040193	
Sum squared resid	4.909612	Schwarz criterion	1.293524	
Log likelihood	-14.80385	Hannan-Quinn criter.	1.131789	
F-statistic	10.99614	Durbin-Watson stat	1.469256	
Prob(F-statistic)	0.000002			

From the above regression, three of the coefficients are statistically significant, these include, minimum wage rate (MWR), social protection (SOPRC) and gross Domestic Product (GDP). Labor union densit (LUD) and technolog (TECH) are not statistically significant.

Labor union density shows a positive impact on the level of unemployment, but the coefficient is not statistically significant at 5% confidence interval. That means there is no significant impact of Labor union density on unemployment in less developed countries

minimum wage rate (MWR) has a positive significant causal effect on the level of unemployment. The coefficient reveals that a 1% increase in level of minimum wage rate causal 0.24% increase on the level of unemployment rate, and is significant at 1% significant level. This indicates that there is a significant positive causal effect between minimum wage rate and unemployment rate in less developed countries.

Social protection level (SOPRC) has a significant positive impact on the level of unemployment, the coefficient shows that when social protection level increases by 1%, unemployment rate also increases by 1.21%. That reveals a significant positive causal impact between social protection level and unemployment rate in the less developed countries. The coefficient is statistically significant at 1% confidence interval.

Technology level (tech) shows a negative but not significant impact on the level of unemployment rate. That simply means that there is no significant causal effect between technology and unemployment rate in less developed countries.

Gross domestic product (GDP) shows a significant negative impact on unemployment rate. The coefficient indicates that a 1% increase in gross domestic product, causal a decrease in unemployment by 0.26%. That means there is a

significant negative causal effect between gross domestic product (GDP) and unemployment rate in less developed countries.

4.3.1 Diagonistic Tests

Table 4.6. (Mult-collinearity Test)

	LOGLUD	LOGMWR	LOGSOPRC	LOGTECH	LOGGDP
LOGLUD	1.000000	-0.068462	0.267488	-0.090388	0.106354
LOGMWR	-0.068462	1.000000	0.310067	-0.158445	-0.063140
LOGSOPRC	0.267488	0.310067	1.000000	-0.072125	0.373587
LOGTECH	-0.090388	-0.158445	-0.072125	1.000000	-0.050808
LOGGDP	0.106354	-0.063140	0.373587	-0.050808	1.000000

The table above shows correlation between the independent variables in the above regression model. The variables do not show strong correlation between them, which is good for ordinary least square regression. That means there is no problem of multicollinearity in model (ii).

Table 4.7. (Heteroskedasticity Test)

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
F-statistic	1.769029	Prob. F(5,34)	0.1457	
Obs*R-squared	8.257779	Prob. Chi-Square(5)	0.1426	
Scaled explained SS	4.354646	Prob. Chi-Square(5)	0.4996	
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 02/24/16 Time: 22:09				
Sample: 1 40				
Included observations: 40				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.921071	0.509042	1.809422	0.0792
LOGLUD	-0.023267	0.090066	-0.258326	0.7977
LOGMWR	-0.018628	0.025161	-0.740336	0.4642
LOGSOPRC	-0.044954	0.123465	-0.364106	0.7180
LOGGDP	-0.063157	0.027804	-2.271503	0.0296
LOGTECH	0.029040	0.053199	0.545878	0.5887
R-squared	0.206444	Mean dependent var	0.122740	
Adjusted R-squared	0.089745	S.D. dependent var	0.150185	
S.E. of regression	0.143287	Akaike info criterion	-0.910451	
Sum squared resid	0.698061	Schwarz criterion	-0.657119	
Log likelihood	24.20902	Hannan-Quinn criter.	-0.818854	
F-statistic	1.769029	Durbin-Watson stat	2.486453	
Prob(F-statistic)	0.145741			

The Table above shows a Breusch Godfrey Serial correlation LM Test. The Observed R-squared p-value is 0.09. This indicates that we cannot reject the null hypothesis of no serial correlation, so model (ii) is good and free from the problem of serial correlations.

Table 4.8. (Serial Correlation Test)

Breusch-Godfrey Serial Correlation LM Test				
F-statistic	2.092277	Prob. F(2,32)	0.1400	
Obs*R-squared	4.625790	Prob. Chi-Square(2)	0.0990	
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 02/24/16 Time: 22:07				
Sample: 1 40				
Included observations: 40				
Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.353079	1.405030	0.251297	0.8032
LOGLUD	-0.182906	0.261769	-0.698730	0.4898
LOGMWR	0.007596	0.070226	0.108160	0.9145
LOGSOPRC	-0.035197	0.318073	-0.110657	0.9126
LOGGDP	0.053530	0.077683	0.689079	0.4957
LOGTECH	0.045764	0.139721	0.327542	0.7454
RESID(-1)	0.325170	0.192517	1.689043	0.1009
RESID(-2)	-0.304571	0.215412	-1.413902	0.1670
R-squared	0.115645	Mean dependent var	3.99E-16	
Adjusted R-squared	-0.077808	S.D. dependent var	0.354806	
S.E. of regression	0.368351	Akaike info criterion	1.017296	
Sum squared resid	4.341841	Schwarz criterion	1.355072	
Log likelihood	-12.34592	Hannan-Quinn criter.	1.139425	
F-statistic	0.597793	Durbin-Watson stat	1.990270	
Prob(F-statistic)	0.752927			

The above diagnostic tests show that model (ii) is good and is free from the basic ordinary least squared problems, so we can accept the result. The adjusted R-Square on the above output result (Table 4.5) is 0.56 which is really high and good for the model. It means we are only explaining 56% of variations in the unemployment rate in the less developed countries. The F-statistic also shows that the coefficients are jointly insignificant at 1% confidence interval.

Chapter 5

RESEARCH FINDINGS

This study is mainly aimed at assessing the impact of labor unions, government regulations and social protection institutions on the efficiency of labor market. The study concentrates on the main indicator of labor market efficiency (unemployment rate) in assessing the impact of labor unions, government regulation and social protection on the efficiency of labor market. The study constructed a model, where labor union density, government regulations and social protections were used as independent variables. These variables were regressed on unemployment rate, which is the dependent variable. Two set of data were used in the study, which include, data of 40 developed countries and data of 40 less developed countries. The model was regressed separately using these two set of data. The findings of this study are presented and explained as follows.

Table 5.1. Summary of Coefficients

	Developed Countries		Less Developed countries	
Variables	Coefficient	P-value	Coefficient	P-value
Labor union	-0.727010	0.0007	0.021806	0.9278
Minimum wage	-0.192696	0.2026	0.239544	0.0010
Social protection	2.134951	0.0013	1.213703	0.0007
Technology	0.719300	0.0002	-0.183688	0.2017
GDP	-0.337930	0.1114	-0.262939	0.0011

Labor union density has a significant negative effect on labor market efficiency in the developed countries. The coefficient is -0.727010 and the p-value is 0.0007. That means there is a significant negative causal effect between labor unions and unemployment rate. That is to say 1% increases in labor union density, causes 0.73% decrease in unemployment rate in developed countries. This is realistic in developed countries and is also consistent with the efficiency theory of labor market institutions, because labor union density reduces the level of unemployment and improves the level of efficiency in the labor market, as stated by the efficiency theory of labor market institutions.

The reverse is likely the case in less developed countries, where the coefficient shows a positive but not significant effect of labor union density on unemployment rate. This contradicts the efficiency theory of labor market institutions, but it is in line with the previous studies. The outcome may likely be as a result of weak nature of Labor unions in the less developed countries, as was found by in previous studies in the literature.

Minimum wage rate does not have significant impact on the level of unemployment in developed countries, though the coefficient shows a negative sign, which is consistent with the efficiency theory of labor market institutions. This negative causal effect between minimum wage and unemployment in developed countries is plausible with regard to wage efficiency theory, whereby high level of Minimum wage causes high level of output, which results to higher (GDP). In the long run, high level of (GDP) enhances productivity as a result of multiplier effect; hence reduces the level of unemployment rate as was shown in the regression output.

In the less developed countries, minimum wage rate has a positive significant impact on unemployment rate; the coefficient indicates that 1% increase in minimum wage causes a significant 0.24% increase in unemployment rate, with p-value of 0.0010, which means the coefficient is statistically significant at 1% confidence. The result, contradict the efficiency theory of labor market institutions, where we expect the variable to have a negative effect on unemployment. Although, the result makes economic sense with regard to the situation in less developed countries, where there is low level of total output (GDP) and few industries that are mostly weak in nature. So as a result of higher minimum wage, most employers may not be able to pay their workers that formal minimum wage, so firms may likely lay off more workers, some will move to the informal sector or shutdown the business completely, which causes higher unemployment rate in the less developed countries.

Social protection has a significant positive impact on unemployment rate in both developed and less developed countries. The coefficient indicates that a 1% increase in level of social protection causes a significant 2.13% and 1.23% increase on unemployment rate, in developed and less developed countries respectively. These outcomes contradict the efficiency theory of labor market institutions, but are quite realistic in economic sense. That is when there is high level of social protection, in form of unemployment benefit and other basic social amenities, people may not bother much in searching for jobs, hence end up being unemployed voluntarily. The result could also means countries with high level of unemployment rate, may likely invest more in social security and other social amenities with the objective of making life easy to the high level of their unemployed populous

Technology level has a significant positive impact on unemployment rate, in developed countries. The coefficient reveals that a 1% increase in level of technology causes 0.72% increase on unemployment rate. This is so realistic economically having the fact that capita (technology) often replaces labor in contemporary industrial countries. So it is plausible to have a positive causal effect between technology and unemployment, especially in developed countries, where there is high level of technology. The reverse is the case in less developed countries, where the coefficient shows a negative relationship between technology and unemployment rate. This also realistic with regard to less developed countries, where there is mostly low level of technology, because an increase in level of technology may result to improvement in level of industrialization which raises the level of employment as a result of more industries (employers), hence decrease the level of unemployment rate.

Gross domestic product shows a negative impact on unemployment rate in both developed and less developed countries, and it is statistically significant in the less developed countries. The coefficient shows that when there is 1% increase in the level of gross domestic product, unemployment rate decrease by 0.18%. This outcome is quite realistic economically, because an increase in total output definitely indicates a significant increase in labor input, mostly in the less developed countries where there is little technology.

5.2 Answers to the Study Questions

- a. How labor union density affects the labor market efficiency (unemployment rate)?

Obviously, labor unions density has a significant impact on the efficiency of labor market, especially in the developed countries, where a 1% increase in labor union density reduces unemployment rate by 0.73%.

b. How government regulation affects the labor market efficiency?

Minimum wage rate has a negative significant impact on the efficiency of labor market in less developed, whereby a 1% increase in minimum wage rate increases unemployment rate by 0.24%. On the other hand, minimum wage rate has a positive but not significant impact on the efficiency of labor market rate in developed countries.

c. How do social protection institutions affect labor market efficiency (unemployment)?

Social protection has a significant negative impact on the efficiency of labor market in both developed and less developed countries, because there is a significant positive causal relation between social protection and unemployment rate. Social protection does not improve efficiency in labor market. Instead the variable cause a distortion in labor market, mostly in developed country, whereby a 1% increase in Social protection causes significant 2.13% increase in unemployment rate.

d. What are the similarities and differences of the impacts of government regulations, labor unions and social protections on labor market efficiency between developed and less developed countries?

Apparently, the impacts of government regulations and labor unions are not identical across developed and less developed countries, because while labor

union density indicates significant impact on the efficiency of labor market in the developed countries, the variable has no significant impact on the efficiency of labor market in less developed countries. So also while government regulation (minimum wage rate) shows a significant impact on the efficiency of labor market in less developed countries, it has no significant impact in developed countries. On the other hand, the impact of social protection level of labor market efficiency is identical across developed and less developed countries, because the variable shows a negative effect on labor market efficiency in both developed and less developed countries.

Chapter 6

CONCLUSION AND POLICY RECOMMENDATIONS

6.1 Conclusion

This study concentrated mainly on assessing the impact of labor unions, government regulations and social protection on the efficiency of the labor market in the developed and less developed countries. The study used unemployment rate, as an indicator of labor market efficiency. The study is based on labor market efficiency theory, where labor market institutions which include labor unions, government regulation and social protection are referred to be an improvement tools to the efficiency of labor market. The study tried to assess these impacts using labor union density, minimum wage rate and social protection level as independent variables which affect the level of unemployment rate. The study found that though Labor unions, government regulations and social institution have significant positive impact on the efficiency of labor market in which they are aimed at, the variable also have some significant negative impact on the labor market efficiency. Apparently the impact of minimum wage rate, which is aimed at protecting the interest of the workers by government interventions also bring about some distortions in the overall labor market, by resulting to higher level of unemployment rate, most especially in less developed countries. This is prone to happen, because not all organizations or firms in less developed countries could afford to pay the minimum wage rate that is set by the government, due to the low level of productivity and financial issues. These organizations or firms may substitute to capital intensive productions which

will lay-off more workers, thereby raising the level of unemployment rate, which is harmful to the labor market and to the country in general. Higher minimum wage rate in a country could also force some firms to shut-down completely or move out of the country (like the way some United State firms shifted to China) as a result of higher minimum wage, to other countries where the minimum wage rate is affordable to them. Moreover, higher minimum wage rate plausible in bring about higher informal sector in a country, where by workers are employed informally and paid much less that the formal wages due to lack of job opportunities in the formal sector.

Labor union density is consistence with the efficiency theory in developed countries, because it reduces the level of unemployment rate, thereby improving efficiency in labor market. This is not true with regard to less developed countries, where there is no significant effect of labor union density on unemployment rate. This might be as a result of weak nature of the labor unions in less developed countries, which was shown in the previous literature. Finally, social protection institutions has a does not tally with the labor market efficiency theory, because social protection causal an increase in unemployment rate, most especially in developed countries. This may likely to happen, because some people may voluntarily refuse to work, when the social protection or unemployment benefit is high and can sustain a living. Another possible explanations for this, is that countries with high level of unemployment rate, may invest more in social protection, in an attempt to ease the pressures and hardship on the unemployed populous.

6.2 Policy Recommendations

It is obvious that government regulation, labor unions and social protections have some impacts on the efficiency of the labor market in various dimension and

magnitude. Though, these impacts must not be overemphasis, having the fact that labor market efficiency is determined by many other variables. Moreover, it is important to note that these impacts are not identical across countries. So the study makes the following suggestions;

- a. The study suggests that policy makers should be very cautious in pursuing the right policies when trying to address the problem of labor market efficiency. As for most of this current policies are just like a dilemma or even trade-off from some perspectives.
- b. Another critical suggestion of this study is that though, government regulation through setting the level of minimum wage is aimed at protecting the interest of the workers, but in some other ways, it also hinders the efficiency of labor market in general by laying-off workers. So policy makers should make adequate analysis in setting the minimum wage rate, so as not to set it too high that could hinders the efficiency of the labor market in general.
- c. Less developed countries should concentrate on strengthening their labor market institutions so as to achieve the aim at which they created, as for weak labor institution are more of distortion than efficiency to the labor market.
- d. Policy makers in less developed countries should cautiously choose and pursue appropriate policies and labor institutions that best fit the nature of their countries, rather than emulating the developed countries
- e. Social protection (social benefit) is essential to the efficiency of labor market, but should not be the priority, policy makers should concentrate on Job creations and employment enhancement, rather than social benefit, so as to make the labor force gainfully employed and productive, not to discourage them or make them reluctant.

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