How Does Institutional Quality Relate to the Size of the Informal Economy in the Case of Pakistan?

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Abstract

The size of the informal economy (IE) has been becoming considerable discussion for all the world but especially for the developing countries. The informal economy has a vital role where it is sharing unemployment, the pressure of poverty, shortage of food, and providing all other much-needed economic sources to the country's citizens while on the other side distorts the official estimates of an economy lead to incompetent policies. The objective of this study is to examine the effect of institutional quality on the size of the shadow economy. This study contributes to the first known estimate of how institutional quality affects the size of the underground economy in the case of Pakistan. This study uses the ARDL cointegration econometric method covering the period from 1996 to 2015. The results of the ARDL model show that institutional quality and Gross Domestic Products all are positive while trade openness and income inequality are negatively related to the size of the informal economy in the case of Pakistan.

Keywords: Informal economy, Institutional quality, Unemployment, Poverty.

Introduction

Estimating the precise scale of the informal economy (IE) is a challenging process. Therefore, any serious effort and contribution are required to measure the range of shadow activities. These activities include all activities that are generating income, but it is difficult to include all private income-generated activities. Many studies have focused on some shadow economy (SE) activities and these studies provide estimates of the informal sector that reflect the actual situation that is happing in any economy. Those researchers who are trying to estimate the size of the informal economy (IE) facing the issue of how should define it. For simplicity, one working definition is that the informal sector (IE) includes all current unrecorded economic operations that would otherwise contribute to the official Gross Domestic Product. The informal economy (IE) is a complex and dynamic phenomenon for the whole world because there is a dilemma that either the informal economy (IE) is complementary or contradictory to the formal economy (FE). There are hardly any studies based on which we can decide that either the informal economy is a form of progress or jeopardizing economic and social growth. The underground economy is a dilemma especially for the developing world because the developing world heavily relies on the underground economy in the sense of sharing to GDP from the underground economy. The reason behind the heavy reliance on the underground economy is that the underground ground economy is an opportunity for those individuals who are unemployed due to lack of legal opportunities and unfortunately, the unemployment level is always high in most of the developing countries.

Although there are many reasons which cause to involve workers in the shadow economy (SE) activities. But the most important and often cited reasons are: increase in the level of taxes and regulations in the formal sector, especially increase in the regulations of labor markets; pushing employees to reduce their working hours and earlier retirement, which raises the unemployment rate and leads to a reduction in the loyalty to the public institutions (Schneider & Enste, 2000). Furthermore, some other causes affect the size of the shadow economy (SE). On the one side, some studies identify that higher levels of tax and social security burdens cause the informal sector while on the other side some studies reveal that institutional quality (IQ): bureaucracy, rule of law, corruption, and regulatory quality are the main causes to determine the size of the informal sector (Dreher *et al*., 2009). A reasonable amount of fiscal burden may be acceptable for economic agents, but they will not be willing to accept more expensive demands. Because of

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extortionate demands, participating in the informal sector (IS) of an economy would be the answer of agents to this government conduct.

Along with the other important determinants, institutional quality plays an important role to determine the size of the informal economy (IE). There are different indicators to measure the institutional quality rule of law, voice, and accountability, regulatory quality, government effectiveness, political stability, and control of corruption. All these measures contribute to determining the size of the informal economy (IE) but corruption and underground economy are a complement to each other (Hindriks et al., 1999). Although various studies exist on the size of the shadow economy, as compared to other important relationships little attention has been given by researchers on how institutional quality (IQ) affects the shadow economy (SE). Knowing something about these relationships will allow us to develop an understanding of how institutional quality (IQ) influences the informal economy (IE). Since the independence of Pakistan in 1947, many Pakistanis have decided not to report their income to the Pakistan revenue authority. They are cheating the system and putting their burden on the other people of the country. Therefore, these activities are known as the informal economy. Those peoples who are involved in the underground economy are businessmen, wage, and salary earners. They do work and earn from the underground economy and cover this income from the revenue collection authority. Besides, empirically proved that less than half of informal activities are explained by business sector participation while the remaining part of informal activities is explained by the household sector of an economy (Bajada, 2002).

Now the question is that how a change in institutional quality affects the size and growth of the informal economy (IE) in the case of Pakistan because it's too much important. It is of considerable policy interest to know that with the change in the level of institutional quality, the size of the informal economy (IE) increases or decreases. If a negative relationship is found it can be said that an increase in institutional quality (IQ) will decrease the size of the informal economy (IE). Torgler and Schneider (2007), show a negative association between institutional quality (IQ) and the size of the shadow economy (SE). if positive relation is found it can be said that the shadow economy is promoting through proper channel along with the improving institutional quality (IQ). The objective of this is to check the relationship between institutional quality (IQ) and the size of the shadow economy (SE) in the case of Pakistan. Because less attention has been given to this relationship and the policymakers who make use of official statistics to give policy may be unaware of the actual volatility in the informal economy (IE) because of institutional quality. Understanding the informal sector and its various complexities are crucial since the informal sector is one of the most significant problems that distort the official estimates and make economic policies inefficient. Furthermore, it is important to understand what are the most crucial factors that influence the shadow sector's size. Because when the government identifies the main causes can reduce the size of the shadow sector.

Shadow Economy in Pakistan

An economy cannot be managed effectively without knowledge of the magnitude of the economic activities that are running along with the formal economy. Therefore, considering the above statement, we can understand that the informal economy can be considered as the real parameter of the national economy. In the presence of SE redistribution of income, trade, inflation, tax system economic growth, the social and economic perspective of the society, and most of the macroeconomic indicators are affected. This issue is much more important in developing and developed countries as well (Schneider, 2005).

Pakistan's economy consists of two sectors formal and informal sectors that are producing approximately the same good. In the legal economy where the productive activities are run by firms while on the other side is the illegal economy in which productive activities are run by the self-employed people. Furthermore, skilled workers are always getting employment because they are assumed that they can work in a competitive market, but unskilled workers might be unemployed due to wage rigidities. Besides, the only difference between the production of goods and services is the degree of risk. In the informal sector,

we can supply goods and services without any risk but in the informal sector, there is a risk to supply goods and services (Bental *et al.*, 1985).

The failure of Pakistan's economic system is due to low tax to GDP ratio, questionable increase in energy requirements, an upward trend in inflation especially in food items, etc. the upward trend in Pakistan's SE due to many reasons including geographical and geopolitical boundaries especially Pak-Afghanistan and Pak-India relations and Pakistan logistic relationship with NATO forces in the War against terrorism. The demolishing of the 2005 Earthquake and the situation of the 2010 flood became the reasons for the enlargement of the shadow sector. In the light of the socio-economic point of view, upward jump in the process especially in the consumer durable and food items prices, the implementation of new GST/VAT system and increase in the energy sector prices may force the peoples to enter the informal economy.

Pakistan is an underdeveloped country and facing many challenges, according to the estimates of UNCDP 2004-15, 38.3% of people are classified as poor and 4 out of 10 Pakistanis live om multidimensional poverty. Therefore, if we want to make the policies that policies must be effective should be unbiased, and only those policies should be acceptable in which macroeconomic indicators are accurate to improve the economic conditions and speed of growth. Furthermore, to make effective and accurate policies about the improvement of Pakistan's economy we need to understand and estimate the actual size of black and white economies. After calculating the actual scale of the informal economy, the government will be able to improve the economic system and can increase its revenue.

Just like most of the other developing countries, Pakistan is demolishing through bureaucratic formalities and complex processes that are required for all important services. These complications turn the economic agents into a path where there is tax evasion (Mughal & Schneider, 2018). In Pakistan, the government has extensive control over the economy and the launching of the automation process is a recently emerging trend in public office. But still, Pakistan is the most difficult country to run the business due to regulations and overlapping procedural formalities. In 2017, Pakistan was placed at 147 positions out of 190 countries in ease of doing business. This position reflects extensive formalities in various processes in the case of Pakistan and forces us to make one window operation to start a business in Pakistan.

Review of literature

Institutional implications of the shadow economy are important to understand for policymakers. Through this way, they may reduce the size of the shadow economy and strengthen their grip to control the size of the shadow economy in the case of developing countries. The process of policymaking can be more efficient and effective if we consider the most relevant institutional factors when we do estimation (Hayat & Rashid, 2020).

To determine the level of economic growth, governance may play an important role, but it depends on the level of development (Hen et al., 2014). Furthermore, governance significantly affects countries' level of development by classifying the countries as a low, medium, and high-income levels (Alshammari et al., 2019).

The formal and informal sectors are closely related to the labor market regulations and formalities. Labor market policies thus impact the informal sector of an economy. This research also discusses how labor market regulation influences wage and productivity in the formal sector. The informal sector is an undocumented or unregulated sector that does not have a clear effect on labor market regulations, such as payroll taxes. Labor market reforms impact only the formal sector and put the labor into the informal sector. This is particularly happening in developing countries. In the labor market context, a large amount of literature considers the informal sector as a disadvantaged sector, but this is not in line with some recent empirical evidence, such as in the case of Latin America. Under the dual interpretation of the labor market, employment in the primary sector will be supposed to be rationed and employees would involuntarily be in the informal sector. In several developing countries, a large number of workers are self-employed in the

informal sector. In addition, based on their productivity levels, we can divide them into three groups, the person with a higher level of productivity want to stay just in the informal sector, some employees only work in the informal sector, and between the formal and informal sector, an intermediate community of workers goes back and forth.

However, this empirical research, on the other hand, shows the effect of two labor market policies: a severance tax and a payroll tax. Both strategies reduce the rate at which workers find formal jobs, but they have different effects on the duration of unemployment, unemployment rates, and workforce distribution across industries. But yet there's a contradiction between severance tax and payroll tax. The severance tax raises the average length of jobs in the formal sector, lowers overall all unemployment, and lowers the number of employees accepting any sort of bid, while the payroll tax decreases the average length of employment, significantly reducing the number of workers in the formal sector, and significantly increases the size of shadow sector and the number of workers accepting any type of offer. Finally, the two methods or policies have different effects on income or wage distribution and production in the formal market. Since the payroll tax raises average productivity and the severance tax lowers average productivity, both policies reduce net production (Albrecht & Navarro, 2007).

Although the informal economy accounts for a greater share of jobs and production in all developed countries, many analysts and policymakers have described the informal sector as a source of employment for developing countries in their study. Informal companies are less productive, employ unskilled employees, and pay lower wages, according to some evidence. Therefore, we have to increase productivity and achieve sustainable growth if we want to reduce the scale of the shadow economy. In the case of Turkey, empirical evidence has been developed to demonstrate the disparity in efficiency between formal and informal firms. This study employs two distinct approaches to assess productivity disparities: firm-level analysis and individual-level analysis. Data obtained through detailed formal and informal company surveys and estimates in the case of business-level analysis. The productivity levels of formal and informal businesses are compared using the matching propensity score and switching regression approaches. The data was obtained through the labor force survey at the personal level.

This research compares the wage gap between formal and informal workers by estimating a global selection model. The results show that there is a significant pay disparity between formal and informal employers, as well as between formal and informal companies. Besides, more skilled entrepreneurs and staff are moving into the formal sector. The process of self-selection assists in closing the gap in competitiveness between the formal and informal sectors. These findings back up the lifecycle hypothesis. The older companies want to operate in the formal market. There is a U-shaped relationship between age and informality for entrepreneurs and employees. Furthermore, the evidence does not support economies of scale for productivity growth because formal and informal companies have different production roles, and informal companies have declining returns to scale, while the formal sector has constant returns to scale. Finally, the results indicate that Turkey has a significant yet untapped potential for productivity growth (Taymaz, 2009).

In the case of Nepal, the labor force is increasing day by day due to an increase in the population growth rate by 1.35 percent per year. The empirical evidence shows that the 400, 00 labor force is introduced each year into the market for searching for work. Due to low opportunity in the formal sector, most of the workers find employment in the informal sector in the presence of a sluggish growing formal sector. The majority of the people who are engaged in the informal sector have different effects on them in terms of employment and income generation. In the informal sector, there is a variation in terms of earnings, mobility, security, differ in seasonality, etc. the occupational classification of informal sector activities shows that the level and status of development is very low as compared to other countries. Although the informal activities are diversified between rural and urban areas, some other characteristics show that there is a tendency to engage in more productive enterprises even within the informal sector. Identifying the informal economy is necessary before making and implication any policy in this sector and

for this purpose, the government can play an effective role in the better development of the informal sector (Dhakal, 2013).

Some countries in the world seem to be more fortunate than others in terms of wealth. Understanding why there is a disparity between nations has always been the most important and fascinating subject for researchers. Economic growth is due to factors such as total factor efficiency, human and physical resources, according to neoclassical theories, but some argue that this isn't the whole story. Other factors, such as institutional efficiency and government policies, have an indirect impact on economic development.

However, poor countries, on the other hand, must invest more in education, public infrastructure, and other areas if they are to become wealthier. As a result, they would need to raise more taxes in order to invest more in education and public works. But the politicians do not make the institution more efficient to increase taxes because it is not in the interest of those people who control and run the political system. Therefore, in this scenario, economists have a problem suggesting a valuable solution. In many countries of the world, where the political system operates in the batter direction, the outcome can be clarified and substantially modified over time, and countries may appear to achieve a position of equilibrium through a political system that represents the balance of political powers and institutions and remain in this equilibrium until newly shocked (Bird et al., 2006).

We can expect institutional quality and unemployment to have an impact on the size of the informal economy. If politicians and the administration have a strong grip on resource distribution, the informal economy will grow in size. As a result, if the institutions aren't working properly, certain people with political and economic power, as well as administrative staff and legislators, have discretionary authority. Corruption, on the other hand, reduces citizens' trust in authorities in countries where corruption has become ingrained in the citizenry and where corruption outnumbers overall spending on education, research, health care, and culture. Furthermore, in countries where corruption is widespread and the government budget lacks transparency, the obligation to pay taxes is not seen as a social norm by the citizens (Levin & Sataro, 2000). All of these factors, on the other hand, increase the incentive to enter the shadow economy or informal sector, whereas people will be less willing to enter the shadow economy if their preferences are properly represented in institutions.

Data and Methodology
Theoretical consideration

Most economists considered the neoclassic theory as the basis of their analysis. The PREEMM model provides a good framework for investigating the concept of behaving or not behaving informally (Schneider & Enste, 2002). Therefore, these types of approaches consider the assumptions of the importance of social values and norms along with self-interest (Alm. 1996).

The existing literature shows that both the economic and political system affects the size of the white and black activities. Bird et al. (2006) forces that if poor nations wish to be wealthier, more needs to be invested in education, health, public infrastructure, and so on. Therefore, they have to raise more revenue to invest in all these sectors. But unfortunately, they don't do the same because it is not favorable to raise taxes for those who govern democratic institutions. However, if countries wish to get an equilibrium position in terms of scale and structure of their fiscal system, which largely dictates, that they need to find a balance between political power and institutions.

The existing political economy literature on the institution's performance to understand the size of the informal economy. Therefore, in order to boost fiscal efficiency and lower levels of informal economies, it is necessary to consider which institutions are appropriate and which institutions will need to be amended.

Although the size of the informal sector is influenced by corruption. In the sense of great discretionary control over the distribution of resources, when government and administration are too powerful, fuels corruption. However, the structure of institutions is neither trustworthy nor running well,

allowing agents such as the political elite, and administration workers to expend their discretionary control. Levin and Satarov (2000), investigate the association of corruption with the institutions in Russia. However, the presence of corruption in Russia's economy is criticized by Levin and Satarov. Corruption is negatively associated with the trust level of the county's citizens. Therefore, in the presence of dishonest people, the level of confidence in the governing authority is diminished. According to Levin and Satarov, the amount of corruption is higher than the overall spending on education, health, technology, art, and culture. And finally, in those countries where corruption is systematic the obligation of taxes cannot be considered as a social norm but the willingness of people to participate in the informal economy declines once citizens understand that their needs and preference are adequately reflected in government structure.

Model

$$L SE_t = \beta_0 + \beta_1 UE_t + \beta_2 II_t + \beta_3 GI_t + \beta_4 TO_t + \beta_5 LGDP_t + \mu_t$$

SE_t = log of Shadow Economy

UE_t = Unemployment rate

II_t = Institutional Index

GI_t = Gini Index

TO_t = Trade Openness which is equal to a share of export plus a share of import.

$LGDP_t$ = Log of GDP per capita.

μ_t = Error Term

Data and Sources

This study collects data from different sources. This study is not dealing with the estimation of underground economic activities. However, this study takes the data of the underground economy from the articles of Medina and Schneider (2018). Furthermore, unemployment, trade openness (share of export plus import), the Growth rate of Gross Domestic Product per capita (GDP), and inflation are downloaded from World Development Indicators while institutional quality indicators including voice and accountability, rule of law, government effectiveness, control of corruption, and regulatory quality collected from the World Governance Indicators. The econometric techniques depend upon the behavior of variables. In this study, the variables are mixed order of integrated so that the Auto-Regressive Technique is used for empirical analysis.

Definitions

The market-based legal production of goods and services that is deliberately withheld from public authorities for the following purposes constitutes the shadow economy:

In order to stop paying wages, value-added, or other taxes,

To stop having to pay into the social security system,

To avoid having to follow a formal labor market requirement, as well as to avoid having to complete such administrative tasks, such as filling out administrative forms.

Institution Quality is a broad concept. There are different indicators to measure the institution's quality like rule of law, government effectiveness, and protection of individual rights. For development, institution quality is the most important variable because institution quality and economic development reinforce each other in the longer term. We use the governance index as a proxy for institutional quality when assessing institution quality. This study makes the index of six governance indicators for institutional quality as follows:

Voice and Accountability: a review of the political process and democratic rights.

Government effectiveness: measuring the government's ability to successfully develop and execute politics. Government effectiveness refers to the government's ability to develop and enforce successful policies that benefit the public good.

Political stability: this indicator tests perception of the probability of destabilizing the government.

Regulatory quality: this measure focuses more on regulations, such as the effect of business policies and perception of the burden imposed by excessive regulation.

Rule of law: There are different indicators to measure the agent's confidence level but one of the most important indicators is rule of law. Therefore, this indicator measures how far society has progressed in establishing an ecosystem where blameless and predictable laws govern economic and social interactions.

Control of corruption: The power to control corruption is a public power that is used for private gain.

All scores estimated by the word governance indicator lie between -2.5 to 2.5. Therefore, a higher score means that institutions are working well and vice versa.

The unemployment rate is calculated by dividing the number of people who are unemployed by the total number of people in the labor force. The labor force also includes the number of people who are employed and the number of unemployed people. Therefore, for the calculation of the unemployment rate both employment and unemployment are important to calculate. All workers of working age who are unemployed during the reference time are counted as unemployed. For example, if workers are able to work and willing to work and they don't get any paid employment in the reference period are included in the unemployed labor force.

The Gini index measures the income distribution across a population. The Gini coefficient was developed in 1992 by Carrado Gini, an Italian statistician. This index may also be used to verify the income or wealth distribution within a population. The coefficient ranges from 0 to 1, with perfect equality equaling 0 and perfect inequality equaling 1.

Small countries are involved more in trade than large countries. Countries located away from large markets usually have lower export shares. In a country, some reasons that determine the trade volume are population, culture, geography, and trade policy. Furthermore, trade openness is a complicated term that requires not only the country's trade policy orientation but also a collection of domestic policies that make the country outward-oriented (Huchet *et al.*, 2011). trade openness is simply measured through the share of export to Gross Domestic Product plus a share of Import to Gross Domestic Product. If there will be an increase in the share of export plus a share of import to Gross Domestic Product, we can say that trade openness is increasing and vice versa

The Gross Domestic Product (GDP) is a metric that calculates the total value of all goods and services produced in a country over a specified period of time. Furthermore, the Gross Domestic Product (GDP) is an important indicator of economic growth. This report looked into the relationship between the size of the shadow economy and GDP per capita growth. Inflation is a quantitative measure of the rate at which the overall average price level of goods and services increases over a specific period of time. This study uses the annual inflation rate for empirical analysis.

Results and Discussion

Table 1 shows the descriptive statistics for the time series analysis in the case of Pakistan. The second column of Table 1 shows the shadow economy descriptive analysis. The mean value of SE is 28.3815, the median is 28.24, the maximum value is 41.37 and the minimum value is 19.27. The value of the standard deviation which is 6.2269 shows the variation in the data from the mean value. Furthermore, for the normal skewness, the value of skewness should be zero. Therefore, the value of skewness is 0.2732 which shows that the shadow economy mirrors normal skewness. Moreover, data is normally distributed informal economy the value of Kurtosis will be 3. In this case, the value of Kurtosis 2.25 is less than three. Therefore, we can say that data is platykurtic which means that more values are less than the mean value. The Jarque-Bera test also shows that the normality of data. In the case of the shadow economy, the value of

Jarque-Bera is greater than the probability value which means that data is normally distributive. However, we can explain all the other variables in this way as we have done for the shadow economy.

Table 1: Descriptive Statistics

	SE	UE	TO	GI	LGDP	II
Mean	28.3815	6.4250	32.9728	30.0100	2.8733	-0.7788
Median	28.2450	6.0000	32.8922	31.4000	2.8785	-0.7892
Maximum	41.3700	8.3000	38.3301	34.4000	3.1324	-0.6899
Minimum	19.2700	5.2000	27.6546	2.5000	2.6573	-0.8631
Std. Dev.	6.2269	1.0602	2.7230	6.6284	0.1732	0.0545
Skewness	0.2732	0.7084	0.0380	-3.8188	0.0776	0.1412
Kurtosis	2.2558	1.9436	2.6839	16.4593	1.3879	1.6545
Jarque-Bera	0.7103	2.6027	1.0880	199.5742	2.1858	1.5749
Probability	0.7010	0.2721	0.9569	0.0000	0.3352	0.4549
Observation	20	20	20	20	20	20

Lag Length Selection Criteria

In table 2, there are different methods to select the lag length selection criteria but the most preferable are AIC and SC. FPE, AIC, SC, and HQ all are suggesting two lags. Therefore, we are including two lag which is suggested by lag length selection criteria.

Table 2: Different Methods to the Lag selection

Number of Lag	Lag length selection criteria	
	AIC	SC
0	2.924426	3.222670
1	0.356993	2.444700
2	7.834777*	3.957606*

Bounds Test

The long-run relationship in the model is extremely sensitive to the lag-length choice (Bahmani-Oskooee & Bohal, 2000). The computed F-statistic is presented in Table 3 to determine whether or not long-run co-integration exists. As a result, at 5%, the lower and upper bound values are 2.39 and 3.38, respectively. Table 3 shows that the estimated value of F-statistics indicates the existence of a long-term relationship. As a result, we can conclude that F-statistic support the long-run relationship exists.

ARDL Short Run Results

In the short-run results, there is no relationship between the institutional quality and the size of the shadow economy. Because the institutional quality is a time taking process to show the results. The short-run ECM value is -0.11 which shows the speed of adjustment or to restore the equilibrium. However, in the long run, cointegration exists between the institutional quality and the size of the informal economy.

Table 3: F- statistic

Computed F-statistic 14.0785		
Critical bound	Lower bound	Upper bound
Critical bound value 5 percent	2.39	3.38

ARDL Long Run Results
Table 4: ARDL (2, 1, 1, 1, 1, 1) Long Run Results

Dependent variable: Shadow economy.

Regression	Coefficient	Standard error	T Value
UN	0.2426	0.0503	4.8234
II	3.2480	1.1726	2.7697
GI	-1.1337	0.0366	-3.6492
TO	-0.0375	0.0125	-2.9836
LGDP	1.0124	0.3537	2.8619

$R^2 = 0.9739$, Adj. $R^2 = 0.9507$, DW = 2.8127, F statistics = 8.25

Table 4 shows the long-run association between dependent and independent variables. In this study, the dependent variable is the shadow economy (SE) and independent variables are unemployment (UN), Institutional index(II), Gini index (GI), trade openness (TO), and GDP per capita (LGDP). Unemployment, on the other hand, is inversely proportional to the scale of the informal economy. This assumes that as unemployment grows, the scale of the informal economy will grow as well, and vice versa. This positive relationship demonstrates that a change in the unemployment rate causes a job loop in the shadow economy (SE), which acts as an automatic stabilizer. The empirical result indicates that a 1% rise in unemployment leads to a 0.2426 increase in the size of the informal economy, which corresponds to the findings of a previous study by Bajada (2006).

Furthermore, current research indicates that institutional efficiency and the scale of the informal economy have a negative relationship. As a result, differing from established literature, this study shows that in the case of Pakistan, there is a positive relationship between institutional efficiency and the size of the informal economy, which is a novel finding in the literature. There are many reasons behind the positive relationship in the case of Pakistan, but the most important reasons are: low level of institutional infrastructure development, complex regulations, and institutional formalities, rise in literacy rate, less priority by government to the institutional sector, strong informal economy, ineffective policies mean that on one side government wants to increase tax filer and on the other side increases tax rate, and lack of proper planning to improve institutional quality means that when the government wants to improve institutional quality it focuses on one indicator and ignores all other indicators. Furthermore, current literature supports the assertion that a higher level of education combined with poor institutions extends the shadow economy (Buehan & Farzanegan, 2013). The informal economy's option is driven by the high regulatory burden and registration costs (Loayza et al., 2005). Furthermore, a lack of institutional infrastructure contributes to the growth of the shadow economy. Pakistan has a low level of institutional infrastructure development so that elected government increases voice and accountability and control of corruption progress. But as a result, corruption is going to increase and Pakistan got 32 points and ranked 120 on the list of 180 countries (CPI, 2019).

Researchers and politicians have been paying close attention to the informal economy and income disparities in recent decades because these two factors influence economic development, public policies, and institutional efficiency (Dell' Anno, 2016). Both have been growing in Asia, but in Pakistan, the relationship between the size of the informal economy and income inequality has shifted. There are few studies in the current literature that demonstrate a link between the size of the shadow economy and income inequality. The size of the shadow economy, according to Huynh and Nguyen (2020), has a negative effect on income inequality. As the size of the shadow economy grows, the share held by poor people grows while the share held by rich people shrinks. Furthermore, the shadow economy and income inequality have a double casualty (Chong & Gradstein, 2007). However, the history of Pakistan shows that when income inequality increases mean that when a higher percentage of the total wealth of the nation goes to few people they don't invest in Pakistan because they don't feel secure. However, they transfer wealth to other countries where they feel secure and comfortable.

Openness to trade is measured precisely by the share of exports plus imports to GDP. Therefore, trade is a good thing for the consumer because after an increase in trade openness consumers have more options to buy commodities with different levels of prices. Trade openness and complementary policy reforms lead to a decrease in corruption (Majeed, 2014). However, some studies show a positive effect of trade on corruption as well. The absence of trade increases rents and provides more opportunities for corruption. but in this situation should avoid corruption because it's good for society and an increase in voice and accountability (Ades & Di Tella, 1999). Furthermore, trade liberalization increases the opportunities for corruption while extensive trade liberalization leads to a decrease in opportunities for corruption. However, data shows that trade openness declined from 30.9 to 27.6 between 2014 and 2015,

while the scale of the shadow economy grew from 24.2 to 30.1. Finally, empirical findings indicate that, in the case of Pakistan, trade openness has a negative effect on the scale of the shadow economy.

In recent decades, one of the most important and complicated problems in the literature has been assessing the relationship between the informal economy (IE) and Gross Domestic Product (GDP). The correlation between the informal sector and official growth can be both positive and negative (Birinci, 2015). the negative association of the informal economy with economic growth comes from market unfair competition. Informal activities create unfair competition and interfere negatively with market allocation and this inefficient allocation slows down economic growth. In addition, a positive GDP shock has a statistically significant positive effect on the scale of the shadow economy. In Pakistan's economy, however, GDP is positively related to the size of the shadow economy. Therefore, Pakistan is a developing country and Pakistan's economy is a growing economy. When there is an increase in the per capita income of people they have opportunities to invest in the growing economy.

Conclusion and Recommendations

The underground economy (UE) offers an atmosphere in which economic agents can avoid government restrictions and inspection. As a result, a massive underground economy (UE) has some serious consequences. As a result, this research aims to see how institutional efficiency relates to the scale of the underground economy (UE). The main aim of this model is to inform policymakers about how the scale of the shadow economy is influenced by institutional efficiency (SE). This study's research question is whether or not institutional efficiency has an effect on the scale of the underground economy (UE).

The findings of this study, which looked at the relationship between institutional quality (IQ) and the underground economy (UE), show that institutional (IQ) is positively associated with the scale of the informal economy (IE). However, this result differs from what has previously been published. A high degree of institutional quality (IQ) enables individuals to express their interests based on the negative relationship between institutional quality (IQ) and the scale of the shadow economy (SE), and involvement in the democratic process strengthens identification with state institutions. Therefore, this mechanism contributes to decreased involvement in the informal economy (IE) because the free-rider issues are minimized by reorganization and participation in the political process.

However, there are many reasons behind the positive link between institutional quality (IQ) and the size of the informal economy (IE). Some of the reasons are low level of institutional infrastructure, ineffective policies, lack of proper planning to improve most of the institutional indicators at the same time, and complex regulations. The system can be more effectively regulated and policies more successful if citizen and authorities interact with a sense of shared responsibility through improved institutional infrastructure, as accountability enhance effectiveness through its impact on government actions(Torgler and Schneider, 2007). While on the other hand, if people believe that they have been duped, corruption is rampant, tax revenue is mismanaged, and the rule of law situation is poor, the incentive for them is that to involve in the shadow sector of an economy. Some key suggestions are necessary to incorporate into the governance system to reduce the size of the informal economy (IE). Institutional quality is one of the most important variables that determine the size of the informal economy (IE). In the existing literature, institutional quality through its a negative impact on the size of the informal economy (IE) but according to the empirical findings of this study institutional quality is positively related to the size of the informal economy (IE).

Therefore, the government should improve all institutional indicators at the same time to reduce the size of the informal economy (IE). But the size of the informal economy (IE) grows with the increase of institutional efficiency at the early stage of institutional infrastructure development. Therefore, at the initial stage of institutional infrastructure, the government should take effective measures to check and balance to reduce the size of the informal economy (IE).

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