

The Impact of Financial Globalization on Economic Growth in the Kurdistan Region of Iraq: An Empirical Investigation

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ABSTRACT

This article delves into the linkage between Economic Growth and Financial Globalization within the Kurdistan context, utilizing yearly data spanning from 2007 to 2020 employing the Auto-Regressive-Distributed-Lag (ARDL) method. Empirical investigation revealed that there is a positive and significant linkage between Financial Globalization and economic growth in the case of Kurdistan in the long run over the 2007-2020; specifically, a 1% upturn in Financial Globalization was linked to an approximate 0.014% increase in GDP. Moreover, Oil Prices and Exchange Rate significantly and positively impacted economic growth in Kurdistan, suggesting that an increase in public revenue might result from an increase in oil price or changing of the exchange rate. Overall, the result implies that financial globalization, oil price, and exchange rate play significant roles in driving economic growth in Kurdistan.

Keywords: Financial Globalization, GDP growth; Oil Price, Exchange Rate, Kurdistan Region.

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INTRODUCTION

The surge of financial globalization, notably from the mid-1980s, has seen an upsurge in capital and human flows between developing and developed countries. This rise is propelled by escalating cross-border trade in financial assets facilitated by the removal of barriers and restrictions, effectively amalgamating financial markets into a global entity (Das, 2010, p. 1). Financial globalization pertains to linking a nation's domestic financial structure with worldwide financial markets and organizations. Generally, achieving this integration requires governments to open up not only their domestic financial sector but also their capital account, a transformation often observed in countries with liberalized economies and increased cross-border capital movements (Schmukler, 2008, p. 48).

Financial globalisation has become intertwined with market deregularisation and liberalization, so that free capital movements have resulted in wide expansion of international capital investment (Gál, 2015, p. 105). This phenomenon has the potential to foster the advancement and growth of the financial system, acting as a source of funds for borrowers like firms, households, and governments with productive investment opportunities (Schmukler, 2004, p. 8).

Further, changes in capital flows into developing countries are influenced by both 'push' and 'pull' factors. On one hand, there are "push factors" which encompass dynamics such as shifts in macroeconomic policies and business cycle conditions within developed nations (Zakaria, 2009). On the other hand, "pull factors" arise from modifications in policies and other elements related to the openness of developing countries. These incorporate the liberalization of domestic stock markets and capital accounts, as well as the presence of large-scale privatization programs. In the long term, this latter set of factors is seen as including the increased influence of institutional investors in developed countries as well as demographic shifts (Egbetunde & Akinlo, 2019, p. 32).

Over the last thirty years, there has been consolidation across the international financial system, so that it is dominated by a few banks, whose headquarters are found in a few advanced countries. The growth of these institutions has occurred concomitantly with increased pressure to

eliminate obstacles to the unrestricted movement of capital. Consequently, these aspects of the banking sector dominate the provision of capital internationally and they for many countries have held considerable balance sheet positions (Cecchetti et al., 2012, p. 4).

The objective of this research was to shed light on the influence of financial globalization on economic growth within the Kurdistan region; a region within a decentralized Iraqi federation characterized by unequal political power distribution. The Kurdistan Region's legal and political quasi-autonomous status, affirmed by the Iraqi 2005 Constitution, has attracted substantial foreign direct investment. (Unegbu & Okanlawon, 2015, p. 39).

The research problem revolved around comprehending the linkage between financial globalization and economic growth within the specific temporal framework of 2007 to 2020. It delved into the empirical model on financial globalization to analyze the intricacies of this relationship and discern its effect on economic growth. The aim of this research was to comprehensively investigate and quantify the relationship between financial globalization and economic growth from 2007 to 2020. In terms of hypotheses, the null hypothesis (H₀) posited that there was no significant linkage between financial globalization and economic growth during the period 2007-2020, while the alternative hypothesis (H₁) proposed that there was a significant linkage between financial globalization and economic growth during the period 2007-2020.”

The subsequent sections of this paper are organized as follows: In the remaining part of the introduction, we delve into the evolving trends and patterns of financial globalization, comprehensively exploring the advantages and risks associated with it. Section 2 provides the theoretical framework and conducts an extensive review of the empirical literature while also shedding light on the landscape of financial liberalization policies in the Kurdistan Region. Section 3 elaborates on the methodology employed in this study. In Section 4, we elucidate and analyze the empirical findings. Following this, Section 5 encapsulates our conclusions, suggests policy options, and delineates the limitations of the study. Lastly, Section 6 comprises the comprehensive reference list.

Financial Globalization: Trends and Patterns

Since the 1980s, in contrast to the earlier postwar era, there has been a trend towards increasing global capital flows, driven by a combination of increased pull factors such as higher expected returns and a greater diversity of financial instruments, additionally, push factors encompass elements like growth and low-interest rates within developed economies. (Mahraddika, 2021, p. 4-5). Financial globalization, in the modern era, has involved a series of booms and busts in terms of capital flows, with the 2009 financial crisis being a recent instance. A distinctive element of what became known as the Global Financial Crisis was that it largely affected financial markets of advanced economies. This has called into question laissez-faire approaches, and the scope for international as well as domestic regulation in finance. In this respect, some developing economies introduced what might be considered an international equivalent of macroprudential policies, in the form of prudential controls on capital inflows, both of which aim to dampen the severity of swings in asset prices and credit (Jeanne, 2012, p. 50).

Governments, borrowers, and private investors act as the principal agents propelling financial globalization, with the liberalization of financial sectors within countries and technological change advancing this process. (Schmukler, 2008, p. 50). In the realm of foreign Inflows of capital, financial globalization primarily manifests through Foreign Direct Investment (FDI), standing out as a crucial and stable component compared to portfolio investments and debt flows. FDI has risen to prominence and is now one of the dominant forms of foreign Inflows of capital due to its stability in the financial landscape (World Development Indicators, 2019; Agoba et al, 2020, p. 1). Hence, FDI serves as the principal constituent of financial globalization, and this study employed FDI as a proxy for assessing financial globalization.

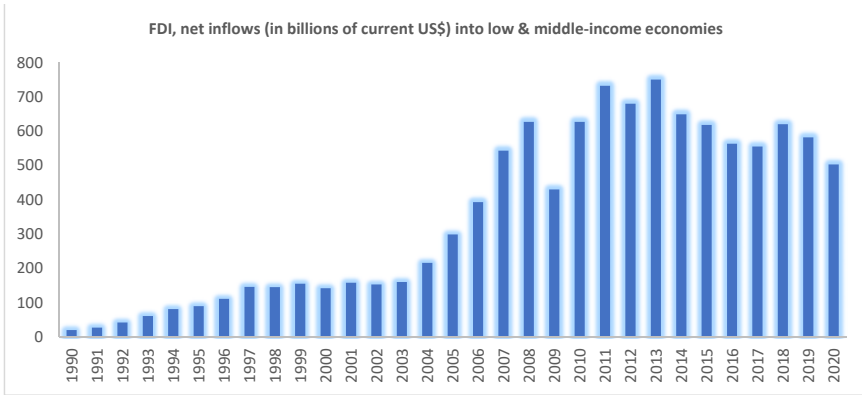


Figure 1: FDI, Net Inflows (in billions of current US\$) into Low and Middle Income Countries, World Bank, World Development Indicators 2022(WDI)

Between the 1990s and 2013, net Inflows of capital (FDI) to low and middle-income economies expanded significantly (see Figure 1). Overall capital influx into low and middle-income nations rose over a longer timeframe from \$20 billion in 1990, to \$732 billion in 2011. Their composition also altered, with the relative size of official flows dropping by 50% and the main source for many developing countries becoming private capital flows. This increase in net private capital flows was uneven, with some low and middle income countries receiving much more than others, while the portion of financial movements received by low and middle-income nations generally increased until the 2009 financial crisis. Following this, improvements in the investment climate contributed to a sharp increase in flows in 2011.

Financial Globalization: Risks and Benefits

Financial globalization refers to the ability to tap into substantial capital reserves, and when invested wisely, it can drive growth. Moreover, the merging of financial markets has the potential to facilitate effective global distribution of resources, offer prospects for risk spread (Setapa et al., 2020), and promote the growth of the financial sector, ultimately aiding growth initiatives. Numerous research has highlighted that although financial globalization holds the potential to drive growth and enhance general well-being, this positive outcome is not assured.

The question of whether the advantages of growth outweigh the drawbacks and uncertainties remains unanswered. As a result, several pathways can be identified that demonstrate how financial globalization could increase productivity and output in a globalized economy. Nevertheless, in a practical policy landscape characterized by macroeconomic imbalances, the impacts of financial globalization could prove harmful, potentially leading to disruptive crises. (Stiglitz, 2004; Das, 2010, p. 218-219).

Financial globalization has both positive and negative economic consequences for a given state. Various studies have demonstrated three potential advantages of tapping into global financial markets: expanding funding sources, facilitating risk sharing, and subjecting policymakers to international competition. On the downside, capital inflows may have an adverse effect on a country's international competitiveness by causing the real exchange rate (RER) to appreciate. If the RER remains significantly and persistently misaligned, it may lead to inefficient allocation of resources and hinder economic growth in the long term. (Mahraddika, 2021, p. 1-2). There are other benefits and risks to developing countries which are attendant on financial globalization.

Financial globalization has the potential to bring about significant advantages, particularly in regard to advancing the financial system. However, it can also lead to financial crises and contagion. An additional possible advantage of financial globalization is a more connected and interdependent global financial landscape, as well as a greater degree of the integration of financial markets and systems between less developed countries and the global financial markets. (Schmukler, 2008, p. 50). In the existing literature concerning economic policies and financial globalization, scholars have highlighted several significant challenges that arise when countries move from minimal to extensive levels of financial integration. They maintain that, in theory, financial globalization can serve as a catalyst for producing a range of additional benefits that promote sustained economic growth. These additional advantages can include enhancing the domestic financial industry, strengthening institutions, and implementing more effective macroeconomic policies (Kose et al., 2010, p. 38).

Nonetheless, at the global level, even disregarding financial crises, it appears that discerning the advantages of financial globalization is

increasingly challenging. Additionally, scholars have argued that financial globalization has not resulted in a surge of investment or improved growth in less developed economies. Instead, countries which have experienced the fastest growth are those that have relied less on inflows of capital (Rodrik & Arvind, 2009, p. 136). It is also apparent that financial globalization has not evened out fluctuations in consumption or dampened volatility.

These characteristics contribute to the occurrence of financial crises and prolonged economic downturns which typically occur after a time of excessive prevalence of risk-taking and over-leveraging (Cecchetti et al., 2012, p. 22). Moreover, nations which have achieved financial integration tend to receive a disproportionate amount of FDI inflows, which can provide an avenue for technology spillovers and disseminating improved management techniques. These spillovers may enhance overall productivity and, therefore, promote economic growth (Prasad et al., 2003, p. 13).

To understand this, it's worth noting that there are three primary advantages to having greater openness to cross border capital flows. Firstly, it could result in decreased expenses related to capital movements, particularly for small and medium-sized businesses. Secondly, it can provide greater capacity for managing income risks, leading to reduced susceptibility of household consumption to changes in output fluctuations. Thirdly, it can encourage more disciplined macroeconomic policies (Wei, 2018, p. 11). So, motivated by such incentives, countries across the world have generally become more financially integrated (Schmukler, 2004, p. 24).

Financial globalization carries the potential to enhance the economic growth rate in developing countries. This could be via several channels, some of which directly impact factors influencing economic growth, such as decreasing capital costs, boosting domestic savings, technology transfer from advanced to less developed countries, and developing local financial sectors. More indirect pathways, which could outweigh the direct ones in certain cases, involve improved specialization in production due to better risk management and the enhancement of institutions and more efficient macroeconomic policies, which are spurred by pressure to compete and the so-called "discipline effect" of globalization; (Prasad et al., 2003, p. 8). See Figure 2.

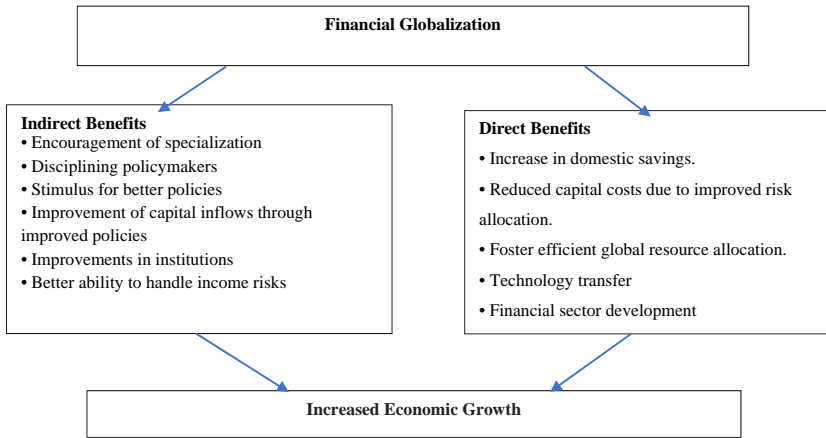


Figure 1: Benefits Through which Financial Globalization can Raise Economic Growth, Adaptation based on Mahraddika, (2021, p. 1-2)

LITERATURE REVIEW

Several economic theories hold that foreign capital flows enhance economic growth by improving capital accumulation, management techniques and productivity while also introducing new technologies to host countries (Agbloyor et al., 2016, p. 2). Additionally, the unrestricted flow of capital across international borders can be advantageous for all countries since it promotes efficient allocation of resources, leading to improved productivity and economic growth globally. However, in reality, as is widely acknowledged, substantial inflows of capital can cause difficult issues for policymakers. (Ahmed & Zlate, 2014, p. 1).

The current research investigated three perspectives regarding the suitability of financial liberalization as a policy choice for underdeveloped countries. The first viewpoint, grounded in Allocative Efficiency, primarily emanates from the tenets laid out in Solow’s (1956) neoclassical growth model. According to the model of neoclassical economic growth, liberalization of the capital account can improve international resource allocation and have positive effects. This is because resources are transferred from developed nations, characterized by an excess of capital and lower

returns, to less developed countries where capital is in short supply, leading to higher returns. As a result, the cost of capital in developing countries decreases, which leads to an initial increase in investment and growth. This increase in investment and growth (even though temporary) can have a lasting impact on enhancing the quality of life in less developed countries. (Henry, 2007, p. 1).

In line with the model of neoclassical economic growth, financial globalization can potentially lead to capital flowing from economies that are rich in capital to those that are poor in capital, as the returns to capital are higher in the latter. This movement of capital should, theoretically, supplement restricted domestic savings in economies with limited capital resources and facilitate increased investment by lowering capital costs. Additionally, specific types of financial inflows can facilitate technology transfer and enable the assimilation of advanced managerial and organizational expertise from more developed economies (Egbetunde & Akinlo, 2015, p. 188). Neoclassical economics argues that liberalizing the capital account can attract global capital to economies severely lacking it, reducing the cost of capital and leading to increased domestic investment, growth, and improvements in welfare. The economies that serve as the source of capital also benefit by reducing risk through diversifying their portfolio internationally. However, the efficiency of legal and market institutions and their level of development vary among countries, which affects the return on investment from foreign sources and the decisions made by the global investment community (Das, 2010, p. 222).

The theories posited by Shaw (1973) and McKinnon (1973) propose that financial liberalization may stimulate greater saving and investment, consequently fostering economic growth. These theories contend that financial liberalization expands the accessibility of loanable funds, credit, and investment prospects. It emphasizes the need for policies that encourage higher levels of saving and provide outlets for investment. This perspective underscores the importance of a financial liberalization in amplifying saving rates and enhancing the productivity of investments. (Awoyemi & Jabar, 2014, p. 174).

The third theory is best characterized by Rodrik (1998). According to Rodrik's analysis, there is no clear linkage between economic growth and

financial globalization. Further, he suggested that the potential advantages of unrestricted capital account are not easily observable, while the costs are clearly manifest in the form of repeated crises in rising markets. Rodrik argued that a key rationale for abolishing capital controls is their detrimental impact on economic performance. In this theory, the costs manifest in various ways. Capital controls hinder the ability to spread risks through the diversification of global portfolios, lead to an inefficient allocation of capital, and encourage irresponsible macroeconomic policies in the domestic economy. (Rodrik, 1998, p. 4-7).

Despite the clarity provided by theoretical perspectives, delving into the empirical realm reveals the intricate nature of the connection between economic growth and financial globalization, many scholarly articles have diligently sought to scrutinize and understand this relationship: Ahmed and Khan (2021) conducted an examination into the linkage between financial liberalization and economic growth in Pakistan during 1970 to 2019. Utilizing the ARDL model and ECM, the results demonstrated that financial liberalization imparts momentum to both short run and long term economic growth. Hye and Wizarat (2013, p. 270) examined economic growth in Pakistan and the impact of financial liberalization. The study employed the ARDL model to obtain the long-run and short run coefficients. The research results indicated that financial liberalization had a positive effect on the short-term growth in GDP per capita of Pakistan, but the long-term effect was not significant. These findings are consistent with those of Rodrik (1998), whose position is that the removal of capital controls negatively impacts on economic output. Sulaiman et al. (2012, p. 16) examined the impact of financial liberalization on Nigeria from 1987-2009, employing the ECM and the Johansen Co-integration test. The research results indicated that financial globalization had a positive effect on the economic growth of Nigeria. However, it overlooked the contribution of financial liberalization to bolstering economic growth, as emphasized by McKinnon and Shaw.

Banam (2010, p. 54) examined how Iran's economic expansion was impacted by financial globalization. The research employed the Johansen test, analyzing data chronologically from 1965 to 2005. The findings indicated a positive association between the growth in GDP per capita and financial globalization. These results supported the theory of Shaw (1973) and McKinnon (1973), and that economic growth is achievable

and improved via financial liberalization. In a study by Adam (2009:1), the influence of financial globalization on economic growth in Ghana, was scrutinized, analyzing data chronologically from 1970 to 2007, employing the ARDL model. The results revealed a significant and positive long-term effect of financial liberalization on growth in GDP per capita. Prasad et al. (2009, p. 38) analyzed the connection between economic growth and financial globalization utilizing descriptive statistics. The findings suggested a positive linkage between financial globalization and growth in GDP per capita, suggesting that financial globalization can generally act as a catalyst for generating a range of additional benefits that enhance well-being and long-term economic growth. These additional benefits may encompass the enhancement of the local financial system, and enhancements in macroeconomic policies and institutions. The findings were inconsistent with those of Shaw and McKinnon, that financial liberalization encourages Growth in GDP per capita.

The influence of financial liberalization on Growth in GDP per capita was examined by McLean and Shrestha (2002, p. 14-15), in respect to the era from 1975-1990 across 20 developing and developed countries. Their found a positive influence of financial liberalization on growth in GDP per capita, consistent with McKinnon and Shaw. The most widely-cited work supporting the contrary view is that of Rodrik (1998, p. 8-9). Examining approximately 100 developing and developed countries from 1975-1989, Rodrick used a regression to study the years where capital accounts were free of restrictions and growth. His findings revealed no linkage between financial globalization and growth, leading him to doubt whether capital flows promote economic development.

In summary, this study explored three theoretical frameworks regarding the influence of financial liberalization on economic growth in less developed countries. The first, based on Allocative Efficiency and the neoclassical growth model, posited that liberalizing the capital account can enhance international resource allocation and stimulate growth via reducing the capital cost and boosting investment, ultimately improving living standards. The second theory, in line with McKinnon and Shaw, emphasized that financial liberalization can increase savings and investment, promoting economic growth through policies encouraging saving and providing investment opportunities. The third perspective, proposed by

Rodrik, challenged the assumption that financial globalization inevitably leads to economic growth, highlighting potential costs that may outweigh benefits, such as increased exposure to financial crises and inefficient capital allocation. The choice of theory depends on specific country contexts, institutional quality, and policy effectiveness. The literature review showcases the complex linkage between Growth in GDP per capita and financial globalization, presenting diverse findings and underscoring the need for nuanced understanding and further research to inform policy-making for sustainable economic growth.

Overview of Financial Liberalization Politics in the Kurdistan Region

The Kurdistan Region of Iraq (KR-I) achieved its autonomy in 1991, with a degree of protection provided by a no-fly zone, instituted following a resolution of the UN Security Council. The first Kurdistan Regional Government (KRG) was elected the following year. Kurdistan's residents, administer the affairs of state, and the KRG has governed the region since. The political, economy and social authority of the KRG's increased with the collapse of the Ba'ath Regime. This encouraged inflows of FDI from several countries (Adams, 2009; Kanabi Yaba, 2018, p.196). Being new to modern capitalism, the KR-I followed a free market-oriented strategy following its effectively separated from the capital of Iraq in 1991. The Kurdistan Region of Iraq became more committed to laissez-faire policies following the Iraq war in 2003. After that point, the Kurdistan Region began a transitional period, during which there was some uncertainty. Following 2003, the KR-I's market-oriented approach towards socioeconomic advancement was consistent with contemporaneous regional and global trends of the time. The adoption of market-driven development policies (recommended for Iraq by the United States), the dominance of free-market systems worldwide and the requirement for international investment were the primary factors pushing the Kurdistan Region of Iraq into adopting such policies. To improve its security in a challenging regional context, the KRG encouraged trade and economic connections with its influential neighboring countries.

Starting from 2003, the KR-I embraced a free market-oriented strategy for socio-economic advancement, aligning with the prevailing local and global patterns of the time. The adoption of market-driven development

policies, advocated for Iraq by the United States, was propelled by the predominance of free-market models on a global scale and the necessity for international investment. In seeking to enhance its security in a challenging regional context, the KRG promoted trade and economic ties within its influential neighboring countries. Consequently, Turkey emerged as KR-I's largest trading partner, with Iran closely following suit as the second largest contributor to trade. Following the Iraq war in 2003, the region experienced a decade marked by a semblance of peace and economic progress, which came to an end with the rise of ISIS and the resulting conflict which affected the Kurdistan region from August 2014 onwards (Anaid, 2019, p.11).

The Kurdistan Region, similar to other developing regions, offers significant potential for FDI due to its implementation of free economic policies, relative stability, and abundance of natural resources as well as hotels and religious sites. However, the current investment climate may not be fully supported by modern incentives that align with the current economic reality. The KRG have implemented, several stimulus measures to promote FDI, including legislation providing economic incentives in respect to customs and taxation (Al-Mihya, 2017, p. 1). In Hussein's view (2015, p. 238), Contrasting with the remainder of Iraq, the KR-I has undergone significant levels of peace, stability, and prosperity, resulting in a relatively stable and self-sufficient economic system. This has led to a flourishing of both domestic and foreign private investment. The Kurdistan Region Investment Promotion Law No. 4 of 2006 was created to stimulate investment in the KR-I. Its purpose was to remove legal barriers and promote investment of both domestic and foreign capital across a range of development projects which further the region's development. This investment was incentivized via numerous tax schemes and amenities (Faiq, 2021, p. 110).

In conclusion, the KR-) has embarked on a remarkable journey towards economic development and autonomy since 1991, buoyed by a pro-market approach and relative stability. This transition, underscored by a commitment to free-market policies following the Iraq war in 2003, has attracted significant FDI and trade relationships, particularly with Turkey and Iran. Despite periods of regional conflict and the rise of ISIS in 2014, the KR-I has sustained its appeal to investors due to its economic incentives and Investment Promotion Law No. 4 of 2006. However, the cautionary

note remains that improper management of financial liberalization can lead to severe financial crises, as highlighted by various studies. Hence, while the Kurdistan Region offers substantial investment potential, prudent management of its financial openness is crucial to ensuring sustained growth and stability in the future.

METHODOLOGY

In this section, we delve into the empirical model concerning financial globalization. Exploring this relationship in-depth, we utilized the Auto-Regressive Distributed Lag (ARDL) model. This statistical approach allowed us to derive both long-run and short-run coefficients approach, offering estimations of the causal connection between the explanatory variables and dependent variable. The analysis was based on time series data between 2007-2020. The model was utilized to estimate the linkage between financial globalization and economic growth. To rigorously examine our hypothesis, we formulated the econometric specification as follows:

$$GDP = \alpha + \beta_1 FG + \beta_2 EXR + \beta_3 OP + \Sigma \epsilon_i \quad (1)$$

Where, the variables for the measurements were as follows:

GDP: Gross Domestic Product (GDP) serves as a fundamental gauge of economic activity and stands as a representative of economic growth. It quantifies the complete value of all ultimate goods and services created within a nation's boundaries during a year.

FG: Financial Globalization, to explore the influence of financial globalization, we used FDI as a proxy variable for financial globalization. FDI data, from 2007–2020 for Kurdistan was available to us. The metric for financial globalization is represented by the degree of capital flow crossing international boundaries. (Hussain et al., 2010; Jaumotte et al., 2013; Anwar et al., 2016; Egbetunde & Akinlo, 2019, p:41; Farouq & Sulong, 2020, p. 280; Khan et al., 2021, p. 455).

EXR: Exchange rate: this study measured the exchange rate as the prevailing average Central Bank of Iraq exchange rate for the US dollar

against the Dinar throughout the year. Previous studies that have employed foreign exchange rates include: Precious et al. (2014); Sa'idu et al. (2014); Udeh et al. (2014); Obidike et al. (2015); Idode and Sanusi (2019); Osu (2020).

Oil Price: Oil price is a monetary value that is expressed per barrel of crude oil in US dollars. It is stated in cash due to it being related to the US dollar and can be shown to oil price in the crude oil market in different notions such as the price declared, the price achieved, the price of signal, and the tax rate (AKTUĞ, et al., 2019, p. 277).

Σi : indicates the presumption that the error term conforms to a normal distribution characterized by a mean of zero and consistent variance. As per Gujarati (2009), this error term encapsulates unaccounted factors affecting the respective dependent variable in each model.

Sources of Data

Time-series data for key macroeconomic indicators in Kurdistan covering the period 2007-2020 were gathered. Annual data was selected due to the predominant availability of data reported on a yearly basis. It is commonly advised to have a larger number of observations when testing hypotheses (Hussein, 2015, p. 169). Data was compiled from various sources given the absence of a single comprehensive data source, GDP data was sourced from Ahmed (2021, p. 21). FDI data was obtained from the Board of Investment database, while oil price data was collected from OPEC's annual statistics series. Exchange rate data was acquired from the Central Bank of Iraq.

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistics are used for checking the average and standard deviation of variables. These show the average value of variables within different time periods and how much they deviate from average values. The standard deviation, with minimum values, shows the stability of variables.

Kurdistan was 18.9% integrated into the global financial system on average and in case of its range varied from 15.08% to 21.60% during the years 2007- 2020. The GDP growth of Kurdistan diversified, from 16.54 BL. to 17.33 BL. and on average GDP grew by 17.06%.

Table 1: The Outcomes of Testing Some Statistical Indicators

| Descriptive Statistics | GDP | FG | OP | ER |
|------------------------|----------|----------|----------|----------|
| Mean | 17.06129 | 18.90047 | 4.325348 | 7.108986 |
| Median | 17.07833 | 18.99281 | 4.454966 | 7.109035 |
| Minimum | 16.54970 | 15.08181 | 3.767922 | 7.074963 |
| Maximum | 17.33639 | 21.60807 | 4.601865 | 7.150701 |
| Sum Sq. Dev. | 0.224312 | 1.941071 | 0.304716 | 0.026686 |
| Std. Dev. | 0.452844 | 33.90979 | 0.835668 | 0.006409 |

Unit Root Test

To assess the time series characteristics of the data, we employed the Phillips-Perron (PP) test, conducting it for all variables in the model at both the original level and after differencing. The analysis encompassed a time series from 2007 to 2020.

Table 2: Displays the Outcomes of the Unit Root Tests

| Variables | Phillips-Perron test statistic | | | |
|-----------|--------------------------------|---------------------|----------------------|---------------------|
| | Level | | First Difference | |
| | Trend | Intercept | Trend | Intercept |
| GDP | -2.1497 (0.4512) | -1.2498 (0.5953) | -3.2158 (0.1669) | -3.4799 (0.0456) |
| FG | -1.7786 (0.6358) | -1.7531 (0.3763) | -2.8035 (0.2404) | -4.0223 (0.0201) |
| OP | -2.3571 (0.3802) | -1.2407 (0.6223) | -3.9769 (0.0433) | -3.6168 (0.0230) |
| ER | 26.4350 (0.9999) | 0.0477 (0.9971) | -14.1574 (0.0001) | -9.0347 (0.0000) |

The results from the PP unit test, as presented in Table-2, demonstrated that all variables [L (GDP), L (FG), L(OP), and ER] exhibited non-stationary behavior and possessed a unit root at their level. Subsequent testing for stationarity at the first difference revealed that all variables achieved stationarity. In essence, this indicated that all the time series variables became integrated of order one when considering their first differences.

ARDL-bounds Test

Table 3: The Outcomes of the Co-Integration Test, Conducted using the ARDL-Bounds Testing Approach

| | Value | Significant level | I(0) Lower | I(1) Upper |
|---------------|--------------------|-------------------|---------------|---------------|
| F-Bounds Test | 18.5007 (Upper) | 10% | 2.97 | 3.74 |
| | | 5% | 3.38 | 4.23 |
| | | 1% | 4.30 | 5.23 |

In the F-Bounds Test, the calculated F-statistic was 18.5007, surpassing the upper bound critical value. Hence, this outcome indicated the existence of a long-run linkage in the model. The rejection of the null hypothesis suggested that there was indeed a long-period co-integration linkage among the time series variables utilized in this study.

Granger Causality Test

The Granger causality test outcomes are displayed in Table 5. Determinations regarding the presence or absence of causality were made by considering the probability values.

Table 4: Pairwise Granger Causality Tests:

| Null Hypothesis: | Prob. | Conclusion (Hypothesis) |
|--|--------|-------------------------|
| LGDP does not demonstrate Granger causality on LFG | 0.0000 | Rejected |
| LFG does not demonstrate Granger causality on LGDP | 0.0000 | Rejected |
| LGDP does not demonstrate Granger causality on LER | 0.0000 | Rejected |
| LER does not demonstrate Granger causality on LGDP | 0.0000 | Rejected |
| LGDP does not demonstrate Granger causality on LOP | 0.0000 | Rejected |
| LOP does not demonstrate Granger causality on LGDP | 0.0000 | Rejected |

The Granger causality test outcomes are showed in Table 4. The determination of causality is based on p-values. The null hypothesis suggests that each variable, taken in isolation, does not Granger cause the other(s). If the p-value for a specific pair of variables is below 5 percent, we reject the null hypothesis, indicating the existence of Granger causality between the two time series variables. In this case, the direction of causality is from the variable excluded in the model to the variable present in the equation.

The outcomes in Table 4 demonstrated that individually, LGFG, LOGOP, and LGER Granger cause LGDP at a 1 percent significance level. The direction of Granger causality is indicated in the Table.

As shown in Table 4, there was bilateral causality among the dependent variable and independent variables. Therefore, we did not accept the null hypothesis.

Estimated Long-Run And Short Run Influences

Table 5: Estimated Long-Run and Short-Run Effects

| Dependent variable | Independent variable | Short run | | Long run | |
|---|----------------------|-------------|--------|-------------|--------|
| | | Coefficient | Prob. | Coefficient | Prob. |
| GDP | (C) | -4.8355 | 0.0036 | -4.8355 | 0.49 |
| | FG | 0.0233 | 0.0797 | 0.0136 | 0.0174 |
| | OP | 0.2636 | 0.0438 | 0.3139 | 0.0009 |
| | ER | 4.3651 | 0.0450 | 2.5501 | 0.0061 |
| | Coint Eq(-1) | -1.7116 | 0.0036 | | |
| | (C) | | | | |
| R- Squared=0.99 | | | | | |
| Adjusted R- Squared= 0.96 | | | | | |
| F – statistic = 33.6695 (0.0291) | | | | | |
| S.E of regression = 0.028 | | | | | |
| SSR = 0.001 | | | | | |
| AIC = -4.2407 | | | | | |

The outcomes derived from Table 5 unveil the formulation of the long-period co- integrating equation:

$$GDP_t = -4.8355 + 0.0136FG_t + 0.3139OP_t + 2.5501ER_t + \mu \tag{2}$$

According to the equation, keeping all independent variables constant, GDP will decrease by 4.8355 units in the long run.

In this equation, with all independent variables held at a constant value, GDP was expected to decrease by 4.8355 units in the long run. The estimates for both long-run and short-run output, as detailed in Table 6, demonstrated that all the variables held statistical significance. This implied that they had

a significant impact on growth of GDP in the long term. The summarized signs of the estimated coefficients were: FG (+), OP (+), and ER (+).

The analysis of the coefficients revealed that Financial Globalization (FG), Openness (OP), and Exchange Rate (ER) had positive signs in both the short run and the long run. This suggested that an increase in these variables positively affected economic growth in Kurdistan.

The consequence of the outcomes is a notable and statistically significant positive long-run linkage between economic growth and financial globalization in Kurdistan. Precisely, a 1% increase in financial globalization is linked to an approximate 0.014% growth in GDP and this can be attributed to various factors. Financial globalization attracts foreign capital and investments, fostering job creation and economic expansion. It offers easier access to international capital markets, enabling infrastructure and technology investments. Diversification of investment sources reduces reliance on a single funding stream, enhancing economic stability. Technology transfer, risk-sharing, and competition driven by globalization boost productivity and efficiency. Access to global markets facilitates exports and economies of scale. Financial sector development, improved financial intermediation, and sound economic policies further contributed to long-term economic growth in Kurdistan.

This aligns with the argument presented by Shaw (1973) and McKinnon (1973) concerning financial liberalization, wherein they posited that a more open and liberalized financial policy and system would incentivize greater investment, consequently fostering economic growth. Moreover, OP and ER significantly and positively impacted growth of GDP in Kurdistan throughout the period of investigation. This linkage may indicate the increasing of public revenue, resulting from the increase in oil price or variation of the exchange rate.

In addition, a 1% rise in oil prices leading to a 0.31% increase in GDP in the Kurdistan region of Iraq can be attributed to the region's heavy reliance on oil exports as a primary revenue source. Higher oil prices translate into increased government revenues, which are often channeled into infrastructure development, public services, and economic projects. This infusion of capital stimulates economic activity, creates jobs, attracts

foreign investment, and fosters fiscal stability. Additionally, rising oil prices bolstered consumer confidence and contributed to the region's economic growth by enhancing overall economic stability and attracting further investment. While a 1% rise in ER increased GDP by approximately 2.55%.

An additional noteworthy discovery was the substantial correlation between financial globalization and long-term economic growth. This may suggest that political and security stability had an important role in the Kurdistan Region of Iraq, and it is the main encourager for foreign investment in it, and this helped to create a suitable investment environment and helped to achieve growth of GDP in the Kurdistan Region of Iraq compared to central and southern Iraq, and the majority of Iraqi internal companies also invested in the region more than they invested in other Iraqi regions as a result of political and security instability

However, as shown in Table 5 all the variables, except for Financial Globalization, had a significant influence on short-term growth of GDP. Financial Globalization showed a positive but insignificant influence on changes in the growth of GDP, with a 1% increase in the degree of Financial Globalization leading to approximately a 0.02% rise in GDP. In contrast, a 1% increase in OP resulted in a substantial rise in GDP by approximately 0.26%. Additionally, ER demonstrated a significantly positive effect, where a 1% increase in the degree of ER resulted in a notable rise in GDP by approximately 4.37%. The R-square of 99% and the corresponding adjusted R-square of 96% implied that the independent variables explained more than 96% of the variability in the dependent variable.

The F-statistic, with a value of 33.6695 and a corresponding probability of 0.0291, tested for the overall significance of the model. This indicated that the model demonstrated a good fit, signifying that the independent variables collectively and significantly determined the dependent variable.

Overall, the analysis suggested that financial globalization, oil price, and exchange rate played significant roles in driving economic growth in Kurdistan. The positive signs of the estimated coefficients indicated that increases in these variables contributed positively to growth of GDP in both the short term and, more notably, in the long term. This information can be valuable for policymakers and researchers seeking to understand

the patterns of economic growth in Kurdistan and the role of financial globalization within it.

Table 6: Summary of Long-Term Outcomes

| | |
|--|----------------------------------|
| (1) a 1% raise in FG boosts the GDPP by 0.014% | a 1% ↑ in FG ⇒ a 0.014% ↑ in GDP |
| (2) a 1% raise in OP reduces GDPP by 0.31% | a 1% ↑ in OP ⇒ a 0.31% ↓ in GDP |
| (3) a 1% raise in ER reduces GDPP by 2.55% | a 1% ↑ in ER ⇒ a 2.55% ↓ in GDP |

Diagnostic and Statistical Checking for the Economic Growth Model

To validate the economic growth models, it is crucial to utilize diagnostic tests and key statistical indicators. The outcomes of these diagnostic tests and statistical indicators are displayed in the following Table:

Table 7: Diagnostic Test and Statistical Indicators for Accuracy in the Economic Growth Model

| Test statistics: | LM test (Serial correlation) | VIF Centered test | Ramsey RESET test (Function form) | Breusch-Pagan-Gogfrey test (Heteroscedasticity test) | Jarque-Bera Test (Normality) |
|------------------|------------------------------|-------------------|-----------------------------------|--|------------------------------|
| | 0.6082 | (1.34-1.98) | 0.1315 | 0.3041 | 0.7295 |

The diagnostic test outcomes are summarized in Table7. Serial correlation of the residuals was assessed using the LM test. The standard computer analysis affirmed that the model in question did not face the typical issues encountered in standard analyses.

The outcomes of various diagnostic tests showed the robustness and appropriateness of our model. Firstly, the null hypothesis of no serial correlation was supported, with a p-value of 0.6082 surpassing the 5% significance threshold, indicating an absence of serial correlation in the model. Additionally, the Ramsey test yielded a p-value of 0.1315, which exceeded the suggested 5% level of significance, confirming that our model was correctly specified in terms of its functional form.

Moreover, the Jarque-Bera normality test produced a p-value of 0.7295, surpassing the predetermined significance level, suggesting that the errors in the model followed a normal distribution. Furthermore, the

Breusch-Pagan-Godfrey test indicated no heteroscedasticity, as evidenced by a p-value of 0.6215, indicating that the errors were both independent and homoscedastic concerning the explanatory variables.

Moreover, the estimated Variance Inflation Factor (VIF) parameters ranged from 1.34 to 1.98, comfortably below the 10 thresholds, indicating the absence of multicollinearity in our models. To summarize, these findings confirm the normal distribution, serial independence, and homoscedasticity of error terms at the 5% significance level, validating the appropriateness of our model for analysis.

Stability Test

The parameters in both models were stable because they are within the critical region and do not exceed it, and this was clear evidence that the two selected models were considered good models.

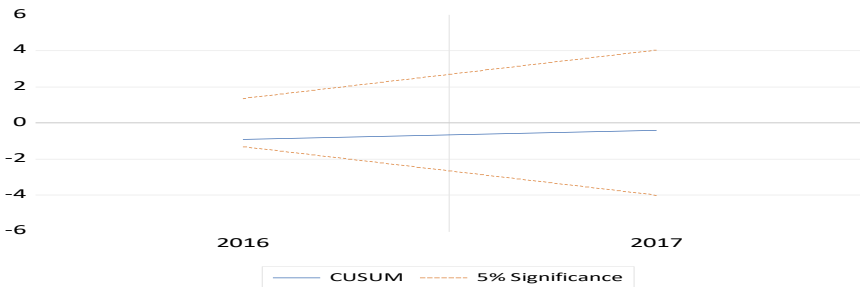


Figure 2: Cumulative Sum of Recursive Residuals (CUSUM,)

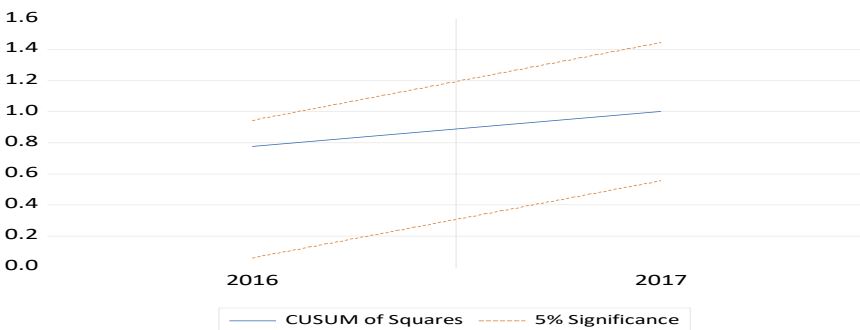


Figure 3: Cumulative Sum of Squares of Recursive Residuals (CUSUM of Squares)

Testing the Predictive Performance of the Error Correction Model

The last and important step in completing the stages of building the standard model is the step of forecasting the behavior of economic phenomena, so that the predictable model is devoid of standard problems and includes stable data and parameters to a large extent, so that it is possible to rely on it for predictive purposes. There are several methods and models for forecasting, but this study was based on the ARIMA model and the results of that analysis are reported as follows, in Figure 5.

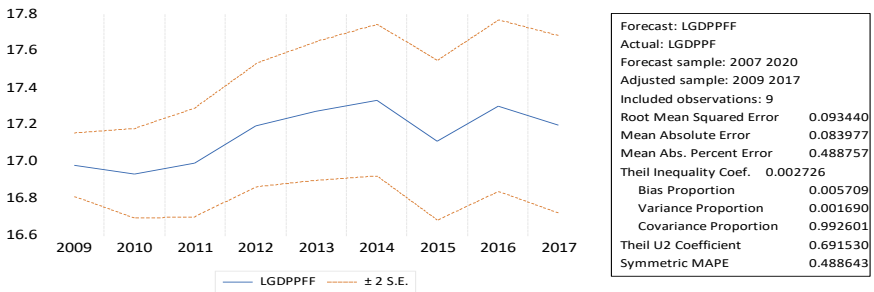


Figure 4: Testing the Predictive Performance of the Error Correction Model

As shown in Figure 5 the depicted data indicated excellent prediction accuracy, with minimal errors for key metrics such as RMSE, MAE, and MAPE. Notably, The Inequality Coefficient, regarded as the most robust predictive performance indicator, approached a value of approximately 0.003. This signified a remarkably strong predictive efficiency of the estimated model, underscoring its reliability and precision.

CONCLUSION

The primary aim of this study was to empirically explore the influence of financial globalization on economic growth in Kurdistan. A comprehensive literature review, including the theories of Shaw (1973) and MacKinnon (1973) regarding financial liberalization, was conducted. The research utilized the ARDL Model for analysis. The research findings suggested that, on the whole, Kurdistan has experienced positive benefits from the liberalization policy. The results indicated a substantial and positive

long-term linkage between Financial Globalization and economic growth in Kurdistan during the timeframe 2007-2020. Specifically, a 1% rise in Financial Globalization resulted in an approximate 0.014% increase in GDP and this can be attributed to various factors. Financial globalization attracts foreign capital and investments, fostering job creation and economic expansion. It offers easier access to international capital markets, enabling infrastructure and technology investments. Diversification of investment sources reduces reliance on a single funding stream, enhancing economic stability. Technology transfer, risk-sharing, and competition driven by globalization boost productivity and efficiency. Access to global markets facilitates exports and economies of scale. Financial sector development, improved financial intermediation, and sound economic policies further contributed to long-term economic growth in Kurdistan.

Moreover, a 1% rise in oil prices led to a 0.31% increase in GDP in the Kurdistan region of Iraq can be attributed to the region's heavy reliance on oil exports as a primary revenue source. Higher oil prices translate into increased government revenues, which are often channeled into infrastructure development, public services, and economic projects. This infusion of capital stimulates economic activity, creates jobs, attracts foreign investment, and fosters fiscal stability. Additionally, rising oil prices bolster consumer confidence and contribute to the region's economic growth by enhancing overall economic stability and attracting further investment. Overall, the result implied that financial globalization, oil price, and exchange rate play significant roles in driving economic growth in Kurdistan. The positive signs of the estimated coefficients indicate that increases in these variables contribute positively to GDP growth in both the short term and, more notably, in the long-run.

On the contrary, concerning short-term effects, all variables except Financial Globalization had a significant influence on growth of GDP. Financial Globalization exerted an insignificant positive influence, explaining changes in economic growth, as a 1% rise in the degree of Financial Globalization increased GDP by approximately 0.02%. Furthermore, a 1% increase in OP correlated with about a 0.26% increase in GDP. Moreover, ER had a significant positive effect, with a 1% increase in the degree of ER associated with approximately a 4.37% rise in GDP. This information can be valuable for policymakers and researchers seeking

to understand the dynamics of economic growth in Kurdistan and the role of financial globalization within it.

This study also provides some specific recommendations:

1. Recognize the positive influence of financial globalization on growth of GDP and consider policies that encourage further integration with global financial markets.
2. Given the positive linkage between ER and GDP, consider policies that maintain exchange rate stability to support economic growth.
3. Develop risk mitigation strategies to manage the potential challenges associated with increased financial globalization, including financial crises.
4. Invest in education and skills development to prepare the workforce for the opportunities and challenges that come with financial globalization.
5. Implement effective monitoring and regulatory mechanisms to oversee the flow of capital and financial transactions, safeguarding against potential risks.
6. Encourage a diversified base of investors and investment types to reduce reliance on a single source of capital.
7. Finally, foster a competitive business environment to incentivize local companies to improve efficiency and product quality in response to foreign competition.

The major limitation of this paper was the difficult experience in obtaining the latest relevant and available data in this hitherto unstudied area of research, because of the typical crude manner of data storage in Kurdistan.

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