

[Globalization and Real Growth: Evidence from Saudi Arabia]

Researcher:

[Basel Balila]

[Assistant professor]

[Department of Economics]

[Faculty of Economics & Administration]

[King Abdulaziz University]

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Abstract:

This paper analyzes the impact of globalization on real economic growth in Saudi Arabia from 1970 to 2019 using the KOF Globalization Index. The KOF Globalization Index divides globalization into three sub-dimensional categories: economic, social, and political globalization, and then it divides economic and social globalization further into smaller subcategories. To capture the impact of all these categories of globalization on real economic growth in Saudi Arabia, three Ordinary Least Squares (OLS) regressions were run, and their results are mixed. The first regression finds that globalization in general positively impacted real growth in Saudi Arabia between 1970 and 2019, though this result is not statistically significant. The second and third regression models examine the impact of globalization on real growth in Saudi Arabia in more details. The results of second regression show that social globalization had a positive impact while economic and political globalization had a negative impact on real growth in Saudi Arabia, and these results are all statistically significant. The results of the third regression show that interpersonal globalization had a statistically significant positive impact while financial globalization had a statistically significant negative impact on real growth. Finally, informational globalization had a statistically insignificant positive impact while cultural globalization had a statistically insignificant negative impact on real growth in Saudi Arabia. Thus, these results show that the net impact of globalization on real growth in Saudi Arabia is ambiguous.

Keywords: Globalization, Economic globalization, Social globalization, Political globalization, Real economic growth, Saudi Arabia.

[العولمة والنمو الحقيقي: أدلة من المملكة العربية السعودية]

إعداد الباحث:

[باسل ياسر بليله]

[أستاذ مساعد]

[قسم الاقتصاد]

[كلية الاقتصاد والإدارة]

[جامعة الملك عبدالعزيز]

الملخص:

تدرس هذه الورقة أثر العولمة على النمو الاقتصادي الحقيقي في المملكة العربية السعودية من عام 1970 إلى 2019 باستخدام مؤشر العولمة "KOF". يقسم مؤشر "KOF" العولمة إلى ثلاثة أقسام فرعية: العولمة الاقتصادية، العولمة الاجتماعية، والعولمة السياسية، ثم بعد ذلك يقوم المؤشر مرة أخرى بتقسيم العولمة الاقتصادية والاجتماعية إلى فئات فرعية أصغر. لتحليل أثر كل فئات العولمة هذه على النمو الاقتصادي الحقيقي في المملكة، تم استخدام ثلاثة نماذج من تحليل الانحدار للمربعات الصغرى العادية (OLS) والتي أظهرت نتائج متباينة. تُظهر نتائج نموذج الانحدار الأول أن العولمة بشكل عام أثرت بشكل إيجابي على النمو الحقيقي في المملكة العربية السعودية بين عامي 1970 و2019 غير أن هذه النتيجة ليست ذات دلالة إحصائية. يدرس نموذج الانحدار الثاني والثالث تأثير العولمة على النمو الحقيقي بمزيد من التفصيل، حيث تظهر نتائج نموذج الانحدار الثاني أن العولمة الاجتماعية كان لها تأثير إيجابي بينما كان للعولمة الاقتصادية والسياسية تأثير سلبي على النمو الحقيقي في المملكة العربية السعودية، وهذه النتائج كلها ذات دلالة إحصائية. نتائج نموذج الانحدار الثالث تظهر أن العولمة الشخصية كان لها تأثير إيجابي ذو دلالة إحصائية بينما كان للعولمة المالية تأثير سلبي ذو دلالة إحصائية على النمو الحقيقي. أخيراً، كان للعولمة المعلوماتية تأثير إيجابي بينما كان للعولمة الثقافية تأثير سلبي على النمو الحقيقي في المملكة العربية السعودية، لكن هاتين النتيجتين الأخيرتين ليستا ذات دلالة إحصائية. نستخلص من هذه النتائج كلها أن الأثر الصافي للعولمة على النمو الحقيقي في المملكة العربية السعودية غير واضح المعالم.

الكلمات المفتاحية: العولمة، العولمة الاقتصادية، العولمة الاجتماعية، العولمة السياسية، النمو الحقيقي، المملكة العربية السعودية.

Introduction: Globalization is not a new phenomenon. Since the start of civilization, people have travelled around the world and traded goods with their neighbors. Yet, the rate at which globalization has been spreading has increased dramatically in recent years due to the rapid advancements in communication and transportation technologies. There is no doubt that globalization has been beneficial to many countries around the world and has led to improvements in people's standards of living. Economically for example, globalization has reduced costs for businesses by allowing them to hire labor and source raw materials where they are inexpensive. Globalization has also made it easier and more profitable for businesses to outsource different parts of their production (such as in automobile and clothing industries) or different parts of their services (such as call centers or information technology services) to different regions in the world where labor cost is lower. In addition, globalization has allowed countries, such as China, to expand their markets further through exporting their goods and services abroad. As a result of all the previous factors along with others, consumers have benefited from globalization either through paying lower prices or accessing a wider variety of goods and services or both.

Globalization has social benefits too. As people's standard of living increased due to globalization, more children of poor families left work and attended school. Students with internet access nowadays have greater access to education where they can attend any classroom around the world to learn pretty much any subject they like. Globalization also enriches societies by exposing them to new cultures, such as foreign arts, foods, music, and movies. This may contribute to a safer global environment with fewer conflicts and less hostility.

However, not all globalization's effects were positive for everyone or for every country. For example, workers who live in communities that had witnessed job outsource often suffer and become unemployed. Small businesses also cannot compete with multinational corporations in a globalized world, and foreign workers in countries that do not have strong labor protection laws can be exploited by larger multinational corporations. These are just a few economic challenges of globalization.

Globalization may also cause social issues. For example, when it comes to children education, globalization may negatively impact children of poor families living in poor countries, as globalization increases employment opportunities for children in these poor areas which will lure children to earn money at the expense of attending school. In addition, globalization may contribute to the loss of cultural identity as it blends unique societies together and hence causes a reduction in our global diversity. Greater access to food, due to globalization, may indeed contribute to better human health by enabling people to consume a more varied and healthier diet. Yet, globalization can take part of the blame for the increases in unhealthy food consumption and diabetes.

After this brief introduction, we can see that the net effect of globalization is not clear. This paper investigates this issue by analyzing the impacts of globalization on economic growth in Saudi Arabia covering a fifty-year period from 1970 to 2019.

Research Problem: There is no consensus among researchers on the socioeconomic impact of globalization on local societies. Some researchers believe globalization has impacted societies positively while others think it has affected them negatively. Therefore, the problem that this paper tries to address is to offer a contribution to the contradictory nature of globalization and its impacts on societies by examining the impact of globalization on Saudi Arabia's real growth rate.

Hypothesis: There are four hypotheses in this study. First, globalization overall is good for real growth in Saudi Arabia. Second, economic globalization is good for real growth in Saudi Arabia. Third, social globalization is good for real growth in Saudi Arabia. Fourth, political globalization is good for real growth in Saudi Arabia. As we shall see later, the only hypothesis that was not rejected is the third one: social globalization is good for real growth in Saudi Arabia.

Research Objectives: There are two main objectives of this paper. First, to offer a contribution to the scientific discussion about globalization and its impact on local societies. Second, to examine the impact of economic globalization, social globalization, and political globalization on real growth in Saudi Arabia.

Research Importance: To the best of my knowledge, I could not find a single academic paper addressing the impact of globalization on Saudi Arabia's real growth rate.

Research Scope: This paper examines the impact of globalization on real growth only in Saudi Arabia from the year of 1970 to 2019. However, this does not mean other countries and other years are

completely excluded. As we shall see later when discussing the empirical literature, I present the findings of several studies covering different time periods for different countries such as Pakistan, Singapore, Malaysia, Thailand, India, the Philippines, Nigeria ... among others.

Definitions: The following terminologies are important in this study and thus must be clearly defined:

Globalization: According to Gygli et al. (2018), “globalization describes the process of creating networks of connections among actors at intra- or multi-continental distances, mediated through a variety of flows including people, information and ideas, capital, and goods.” Another definition given by Gygli et al. (2018) states that “globalization is a process that erodes national boundaries, integrates national economies, cultures, technologies, and governance, and produces complex relations of mutual interdependence.”

Economic Globalization: “Economic globalization characterizes long distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges” (Gygli et al., 2018).

Social Globalization: According to Gygli et al. (2018), “social globalization expresses the spread of ideas, information, images, and people.”

Political Globalization: Political globalization can be described as “the diffusion of government policies” (Gygli et al., 2018).

Real Economic Growth: Real economic growth is a growth rate that takes inflation into account. In other words, real growth “is measured by the change in the volume of its output or in the real incomes of its residents” (The World Bank, 2023).

Theoretical Background: There are many theoretical classifications of globalization, but I will focus here on the economic theories that have discussed the issue. We can divide the economic theories on globalization into two main groups: the classical country-based theories, and the modern firm-based theories.

Classical Country-Based Theories: There are four theories under this group:

1) **Mercantilism:** This theory was developed in the 16th century promoting the idea of increasing exports and decreasing imports in order for countries to achieve economic growth. When countries export more than what they import, they will have a trade surplus—a situation where the value of exports exceeds the value of imports. This difference must be paid for by foreigners with gold and silver. Therefore, the goal of each country, according to Mercantilism theory, is to increase its holdings of gold and silver by having a trade surplus and try to avoid the opposite scenario of having a trade deficit where the value of imports exceeds the value of exports. One strategy that countries can use to achieve this goal is protectionism—a strategy that imposes trade restrictions on imports. Protectionism is still in use until today in many countries, such as China, where a combination of protection policies is implemented. Perhaps the most popular protection policies are subsidies for domestic industries and tariffs and quotas to limit imports. China is not the only country practicing protectionism. Almost every country, at one point or another, has practiced some kind of protectionism to protect key domestic industries in its economy. Any policy creates winners and losers, and protectionism is no exception. The clear winners of protectionism are companies that cannot compete with more efficient foreign companies in a free-

market environment, and the clear losers are both consumers who will pay higher prices and the other domestic companies whose production depends on foreign-made parts. In addition, it is important to note that in the same way import restrictions lead to higher prices, government subsidies for selected domestic companies will lead to higher taxes which will eventually be paid for by taxpayers (Duggal, 2023).

2) Absolute Advantage: In 1776 in his popular book “An Inquiry into the Nature and Causes of the Wealth of Nations”, the father of economics Adam Smith challenged the leading Mercantilism theory and argued that imposing trade restrictions on imports, suggested by Mercantilists, was not the most efficient way to achieve economic growth. Instead, he offered a new trade theory where he suggested that a country should specialize in producing goods that it can produce more efficiently than other countries. This theory is called the Absolute Advantage. Smith argued that trade should flow freely between countries based on market forces without any kind of government regulations, restrictions, or interventions. In a hypothetical two-country two-product world, where we have country X and country Y, and product I and product II. If country X can produce product I cheaper or faster or both than country Y, then we say country X has an absolute advantage over country Y in producing product I and hence it can specialize and direct its resources toward producing product I. Similarly, if country Y has an absolute advantage over country X in producing product II, then country Y should specialize its resources in producing product II. Under such specialization, country X and country Y would have produced the highest quantities of product I and II ever, production would become more efficient, and both countries could engage in trade to receive the product they need. According to Adam Smith, a country’s wealth should not be based on the amount of gold and silver it possesses but rather on the living standards of its people (Duggal, 2023).

3) Comparative Advantage: David Ricardo, an English economist, challenged the Absolute Advantage theory by introducing another theory called the Comparative Advantage theory in 1817. Consider the same hypothetical example of two-country two-product world presented earlier, Ricardo stated that in some cases, country X may be better at producing both goods I and II and hence has an absolute advantage over country Y in producing both products. Yet, specialization and trade could still occur between the two countries and benefit them both. Suppose country X can produce product I 10 times better than country Y, but it can produce product II only 2 times better than country Y. Without the possibility of trade, country X would produce both products. This means some of country X’s resources would be used in producing product II. Country X’s opportunity cost of producing product II is very high since the production of product II would come at the expense of product I—a product that only country X can produce at a such high efficiency rate. With the possibility of trade however, country X can only specialize in producing product I and country Y can only specialize in producing product II, and then engage in trade. Under this scenario, the productivity of both countries as a team would be the highest. In other words, Comparative Advantage theory focuses on the relative productivity differences, whereas Absolute Advantage theory focuses on the absolute productivity (Duggal, 2023).

4) Heckscher-Ohlin Theory (Factor Proportions Theory): In the beginning of the 20th century, Eli Heckscher and Bertil Ohlin, two Swedish economists, criticized Adam Smith’s and David Ricardo’s theories stating that both theories do not help any country to determine which products would give it an advantage. Heckscher-Ohlin theory argues that both Smith and Ricardo theories assumed free and open international markets and that such freedom is sufficient to guide countries to decide which products they could produce more efficiently. Instead, Heckscher-Ohlin theory focused on the mechanism of how

any country could gain a comparative advantage by producing goods that utilize resources—whether land, labor, or capital—that are in abundance in that country. According to Heckscher-Ohlin theory, the cost of any resource is a function of its supply and demand. When supply is greater than demand, the country would have a surplus in that resource, and this resource is cheaper. When demand is greater than supply however, the country would have a shortage in that resource, and this resource is more expensive. Therefore, countries would produce and export products that require resources that are abundantly available because they would be cheaper in production. On the other hand, products that require resources that are in excess demand (shortage) would have to be imported from abroad. For example, Bangladesh is home of large and cheap pools of labor. Therefore, Bangladesh has become a favorite location for labor-intensive industries like textiles and garments (Duggal, 2023).

Modern Firm-Based Theories: There are four theories under this group too:

1) Country Similarity Theory: In 1961, Steffan Linder, a Swedish economist, developed the Country Similarity theory where he argued that consumers in countries that are in a similar stage of development would have similar preferences, and hence, would offer the best opportunity for trade and profit. According to Linder, companies first fulfill the need of domestic consumption. Then, companies should explore export opportunities in countries where their markets look like their domestic ones with respect to customer preferences. Such strategy would offer companies the most profit potential. Therefore, the most trade in manufactured goods, according to the Country Similarity theory, will occur between countries with similar per capita incomes. This theory is most useful for understanding trade where the decision of buyers is mainly based on brand names and product reputation (Paliwal, 2022).

2) Product Life Cycle Theory: In the 1960s, Raymond Vernon, a Harvard Business School professor, developed the Product Life Cycle theory where he divided the life cycle of any product into three different stages: new product, maturing product, and standardized product. Vernon assumed that new-product production would occur in the home country where the product was initially invented. Then, as the product becomes more standardized, the production would likely move to other countries. Personal computers for example illustrate how Product Life Cycle theory works in the real world. The personal computer was first invented in the US in the 1970s, and so it was in the new-product stage in its home country. During the 1980s and 1990s, the personal computer was completely developed, and hence, it was in the mature-product stage. Since the beginning of the new millennium, the personal computer has become a standardized product, and hence, most of the manufacturing and production process has moved to other low-cost countries in Asia and Mexico. One drawback of the Product Life Cycle theory however is its inability to explain the current international trade pattern where many products are being both invented and manufactured in almost all parts of the world, especially in countries like China and India where highly skilled workers are available at relatively low cost (Paliwal, 2022).

3) Global Strategic Rivalry Theory: In the 1980s, Paul Krugman, an American economist who won the Nobel Prize in economics in 2008, and Kelvin Lancaster, an Australian mathematical economist, developed the Global Strategic Rivalry theory where they focused on multinational companies and their strategies to compete and gain a comparative advantage over other similar competing global companies. This theory recognizes the fact that multinational companies will face fierce global competition, and so they must prove their superiority if they want to be successful in such a competitive market. And the only way to do this, according to Global Strategic Rivalry theory, is to develop a competitive advantage over other competitors—or as Krugman and Lancaster called it, to develop barriers to entry in that specific industry. These barriers (or obstacles) can be created through either investing in research and

development, or owning intellectual property rights, or producing at low costs through the use of economies of scale, or through applying some unique business methods, or having extensive experience in the industry, or through controlling resources or having favorable access to raw materials (Paliwal, 2022).

4) Porter's National Competitive Advantage Theory: In the 1990s, Michael Porter, an American economist of Harvard Business School, developed his National Competitive theory where he argued that the country's competitiveness depends on the capacity of its industries to innovate and upgrade. Porter's theory proposed an explanation on why some countries are more competitive in certain industries than others by identifying four factors that affect countries' competitiveness: (1) local market resources and capabilities, (2) local market demand conditions, (3) local suppliers and complementary industries, and (4) local firm characteristics. Porter's theory also emphasized the importance of the government's role in forming the competitive advantage for any industry (Paliwal, 2022).

Review of Empirical Literature: While most economists agree on the positive impact of trade openness on economic growth in the short run, they do not agree on its impact in the long run. Therefore, the net effect of globalization on economic growth is not always positive as I will show shortly. In this section, I will begin by presenting a small sample of the literature supporting the positive impact of globalization on economic growth and then I will follow that by presenting another small sample of the literature supporting the negative impact of globalization on economic growth. The literature is organized chronologically.

Globalization is Good for Growth: Dreher (2006) used panel data analysis from 1970 to 2000 to evaluate the impact of globalization on economic growth for 123 countries and found that (1) trade liberalization positively and robustly impacts economic growth, (2) social integration positively but less robustly impacts economic growth, and (3) political integration has no impact on economic growth.

Afzal (2007) studied the impact of globalization on Pakistan's economic growth with an error-correction model covering the period between 1960 to 2006. His results indicated a robust and long-run positive impact of trade openness and financial integration on economic growth. He concluded that globalization would certainly benefit Pakistan's economy given that the country would pursue sound economic policies.

Rao et al. (2009) estimated the steady state growth rates for Singapore, Malaysia, Thailand, India, and the Philippines covering the period from 1970 to 2006. To derive the steady state growth rates, they used an extended version of Solow model and found globalization to have a positive impact on economic growth for these countries.

Rao and Vadlamannati (2011) used panel data of 21 low-income African countries between the period of 1970 and 2005 to estimate the effects of economic, social, and political globalization on economic growth. Overall, their results showed a small but significant positive effect of globalization on economic growth.

Polasek and Sellner (2011) analyzed the impact of globalization on economic growth of 27 European Union countries from 2001 to 2006 using the Spatial Chow-Lin Procedure, a method constructed by the authors, and found that globalization, especially trade openness and foreign direct investment, positively affects economic growth in most of that region. However, they found that this positive impact of globalization decreases as countries become richer—i.e., have higher GDP per capita.

Aslam et al. (2018) argued that globalization is good for growth because globalization helps spread technology, and technology is the primary driver for improving income levels and living standards. Globalization's positive impact, according to the authors, has been particularly large for emerging market economies. In addition, the authors argued that because globalization boosts technological development and innovation, labor productivity has been improved as well, which has led to even further economic growth.

Irwin (2022) argued that almost all countries are richer today than during the 1970s or 1980s, a period when globalization started to spread fast. According to Irwin, globalization cannot be blamed as a zero-sum game where its gains go to some countries at the expense of others. On the contrary, he showed how big the gap between the rich and poor countries was before globalization really took off, and then how globalization helped us to narrow that gap during the last four decades.

Globalization is Bad for Growth: Stiglitz (2003), who won the Nobel Prize in economics in 2001, argued that globalization can negatively affect economic growth through eight channels. First, globalization has often destroyed old jobs in domestic industries permanently and caused rising unemployment. Second, globalization increases risks and volatility for domestic financial system regardless of the exchange-rate regime followed. Third, globalization encourages large foreign capital inflow which leads to higher inflation and as a result higher interest rates, and higher interest rates adversely affects growth. Fourth, Globalization facilitates capital flight (capital outflow) which negatively impacts growth. Fifth, globalization entails a loss of full control over the monetary policy and/or exchange rate policy. Sixth, globalization causes a loss of national (domestic) financial institutions. Seventh, globalization leads to domestic political corruption such as bribery to public officials to either obtain government protection or undermine the political process. Eighth, globalization has its social negative impacts such as cutting food and fuel subsidies for the poor or undermining social cohesion, consensus, and identity.

Chang and Lee (2010) found mixed results. They empirically re-examined the correlation and the causation between economic growth on one hand, and the three main globalization dimensions (i.e., economic, social, and political) on the other hand. They applied Pedroni's panel cointegration technique covering the years from 1970 to 2006 for 23 OECD countries. They found weak evidence of the short-run impact of globalization on growth but stronger evidence of the long-run impact of economic and social globalization on growth.

Adesina (2012) argued that globalization had adversely impacted Nigeria and its people by focusing on its social impacts on the fields of science and technology as well as the environment. According to the author, the internet and cable networks had exposed the youth in Nigeria to some of the negative western culture ideas that negatively impacted the traditional culture. Also, there has been a surge of HIV and AIDS, which is perceived according to the author as a product of globalization. Environmentally, globalization had had a negative impact on the environment through deforestation and pollution in Nigeria.

Ying et al. (2014) achieved mixed results too. They applied panel data analysis to estimate the impact of globalization on both the short-run and the long-run economic growth of the ten ASEAN countries (Association of Southeast Asian Nations) from 1970 to 2008. Their results showed positive impact of economic globalization on growth but negative impact of social globalization and political globalization on economic growth, though the political globalization effect is not significant.

Elsherif (2016) empirically investigated the impact of globalization on economic growth in the MENA region (Middle East and North Africa) employing a GMM approach (Generalized Method of Moments) and using a panel data that covers the years from 2001 to 2014. Her Results showed an overall negative impact of globalization on economic growth.

Yap and Huan (2018) argued that despite all the benefits of globalization, especially to developing countries, it still had its negative side effects on domestic societies. Among these negative consequences are pollution, diseases, global financial crises, cross-border crimes, international terrorism, rising socioeconomic inequality, easier tax evasion, wage stagnation, poorer physical and mental health, higher homicide rates, resurgence of nationalism, and higher voting for far-right political parties.

Rehman et al. (2022) examined the global impact of globalization on CO2 emissions from 1985 to 2020. They also examined the impact of other variables on CO2 emissions, such as economic growth, population growth, renewable energy usage, and nuclear energy. They found that both in the short run and the long run globalization negatively affected the environment causing CO2 emissions to increase.

Baris (2023) investigated the relationship between globalization and the external debt of developing countries. Using panel data analysis, her findings showed that globalization in general and economic globalization in particular have increased the external debt of developing countries. She also did not find any statistically significant effects of social and political globalization on developing countries' external debts.

Data: The data on globalization is taken from the “KOF Globalization Index”, which measures three dimensions of globalization: economic, social, and political globalization. The Index, which covers most of the countries around the world since 1970, ranges from 0 to 100 where 0 means least liberalized and 100 means most liberalized. Then, the economic globalization dimension is divided into two subdimension categories: trade globalization and financial globalization, and each of these two has a weight of 50 percent. The social globalization dimension also consists of three subdimension categories: personal contact, information flows, and cultural proximity. Each of these three contributes one third to the total social globalization variable. Political globalization is not divided into any subdimension category. Lastly, economic, social, and political globalizations are all aggregated to the globalization index using equal weights of one third. Table 1 shows all globalization variables.

Table [1]: Globalization Variables

Variable	Symbol
Globalization Index	Globe
Economic globalization	ECO
<ul style="list-style-type: none"> • Trade globalization • Financial globalization 	<ul style="list-style-type: none"> Trade Financial

Social globalization	
• Interpersonal globalization	SOC Personal
• Informational globalization	Informational Cultural
• Cultural globalization	
Political globalization	POL

Source: Author's definitions.

As mentioned earlier, the Globalization Index consists of the three dimensions of globalization: economic, social, and political, and each of them has an equal weight of one third. Economic globalization variable consists of both trade and financial globalization, each with 50 percent weight. Trade globalization for example includes the exports and imports of goods and services as a percentage of GDP while financial globalization includes foreign direct investments, international debts, international reserves, international income payments as a percentage of GDP, and the sum of stocks of assets and liabilities of international equity portfolio investments as a percentage of GDP. Social globalization variable consists of three globalizations: interpersonal, informational, and cultural globalization. Interpersonal globalization includes international incoming and outgoing fixed and mobile telephone traffic in minutes as a percentage of population, number of foreign or foreign-born residents as a percentage of population, international students as a percentage of population, arrivals and departures of international tourists as a percentage of population, and international financial transfers (secondary income paid and received) as a percentage of population. Informational globalization includes internet bandwidth as a percentage of population, international patents as a percentage of population, and high-tech exports as a percentage of population. Cultural globalization includes trades in cultural goods, services, and recreational services as a percentage of population, international trademarks, number of McDonald's restaurants as a percentage of population, and number of IKEA stores as a percentage of population. Political globalization includes the absolute number of embassies in countries, number of personnel contributed to U.N. Security Council Missions as a percentage of population, and number of internationally oriented nongovernmental organizations operating in that country (ETH Zurich, 2023).

The data for real growth is taken from the World Bank (The World Bank, 2023), whereas the data for Brent oil prices is taken from both the US Energy Information Administration (EIA, 2023) and Statista dataset (Statista, 2023) expressed in US dollars. Table [2] presents the summary statistics for my data. The table shows that on average the volatility in social globalization in Saudi Arabia between 1970 and 2019 was the greatest, then political globalization came second, and the least volatile was economic globalization. Real growth and real oil prices also experienced wide swings.

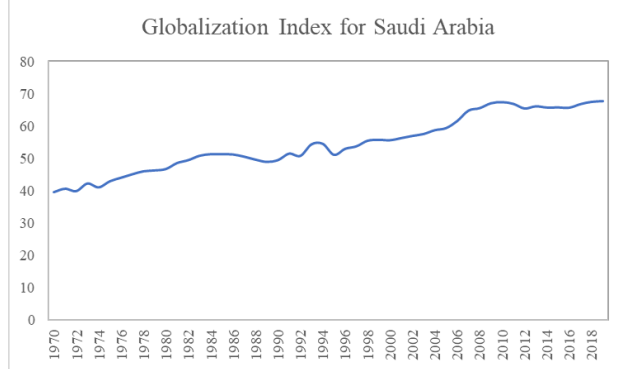
Table [2]: Descriptive Statistics

Variables	Mean	Median	Std Error	Minimum	Maximum
Real GDP per Capita	\$82,418	\$72,559	\$3,370	\$60,344	\$138,404
Real Growth	5%	2.8%	1.7%	-20.7%	58.6%
Globe	54.5	53.3	1.2	39.7	67.6
ECO	63.8	64.1	0.6	54.9	73
SOC	47.7	42.8	2	31.4	72.9
POL	51.7	53.8	1.5	30.4	66.4
Trade	66.6	66.2	0.8	54.9	77.9
Financial	61	60.5	0.7	51.4	69.9
Personal	54	50.4	1.4	39.3	72.9
Informational	47.1	37.2	2.7	30.3	84
Cultural	41.3	40.8	2.1	23.6	65.5
Oil Prices	\$36.4	\$26	\$4.3	\$1.2	\$111.6

Source: Author's calculations.

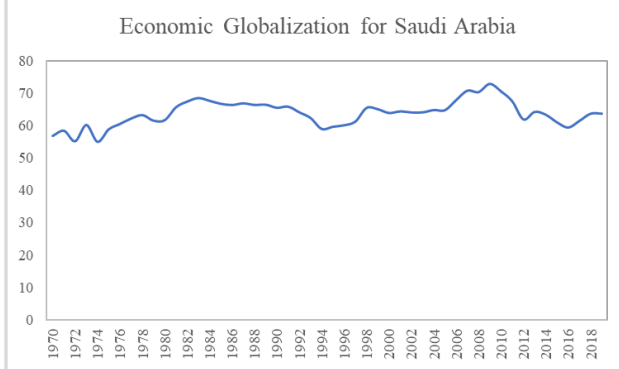
Figures [1] to [12] show the behavior of each of these variables from 1970 to 2019. The overall Globalization Index for Saudi Arabia increased from 40 to 70 during the 50-year period, Economic Globalization Index remained at 60 and almost did not change during the 50-year period, Social and Political Globalization Indexes increased significantly from 30 to 70 points, Trade and Financial Globalization Indexes remained at 60 points, Interpersonal Globalization Index increased from 40 to 65 points, Informational Globalization Index significantly increased from 30 to 80 points, and Cultural Globalization Index increased from 25 to 65 points. Looking at everything together, Informational, Cultural, and Political Globalization Indexes have witnessed the greatest increase.

Figure [1]: Globalization Index



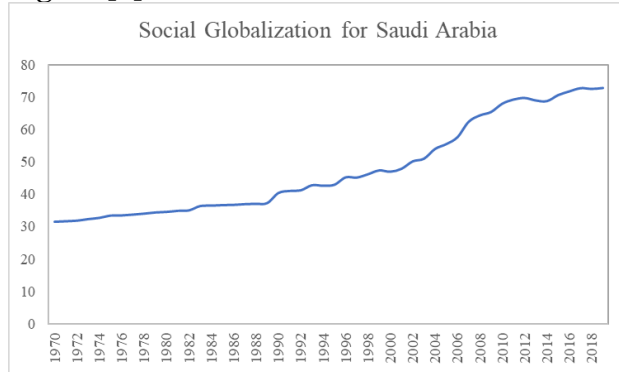
Source: Author's calculations.

Figure [2]: Economic Globalization



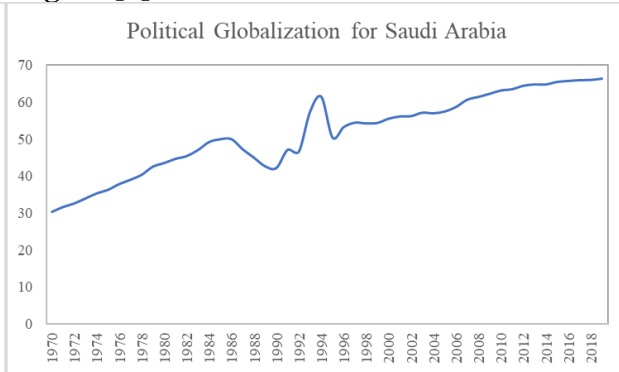
Source: Author's calculations.

Figure [3]: Social Globalization



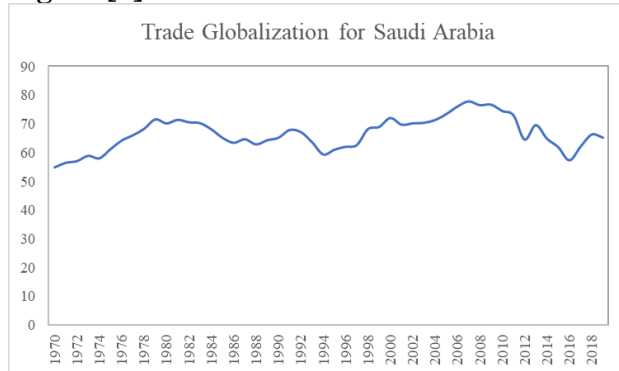
Source: Author's calculations.

Figure [4]: Political Globalization



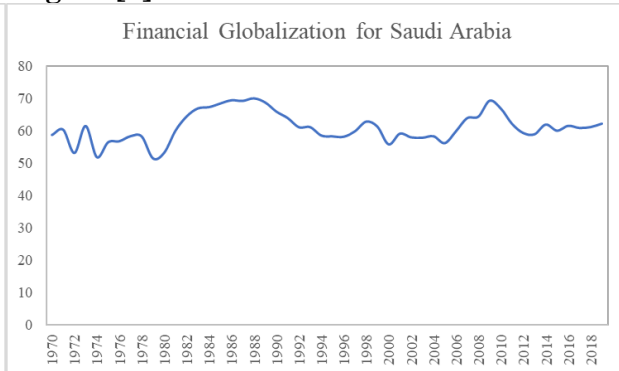
Source: Author's calculations.

Figure [5]: Trade Globalization



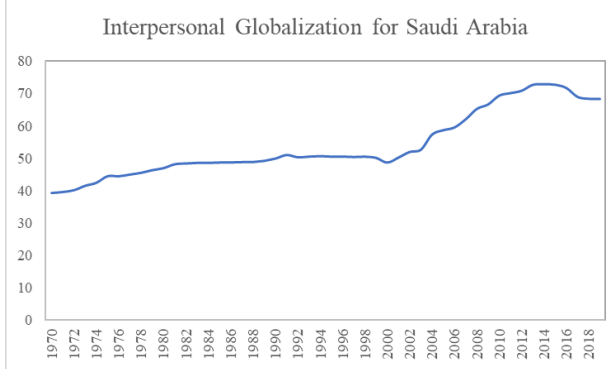
Source: Author's calculations.

Figure [6]: Financial Globalization



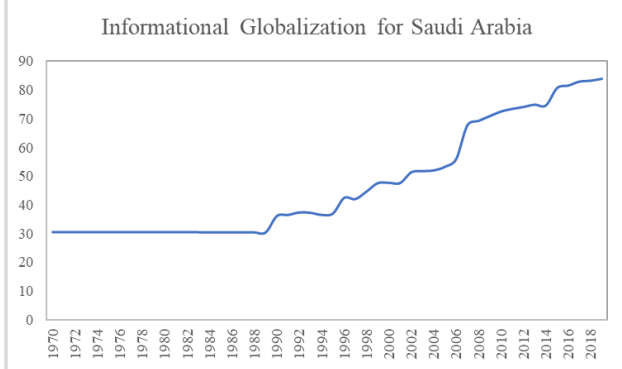
Source: Author's calculations.

Figure [7]: Interpersonal Globalization



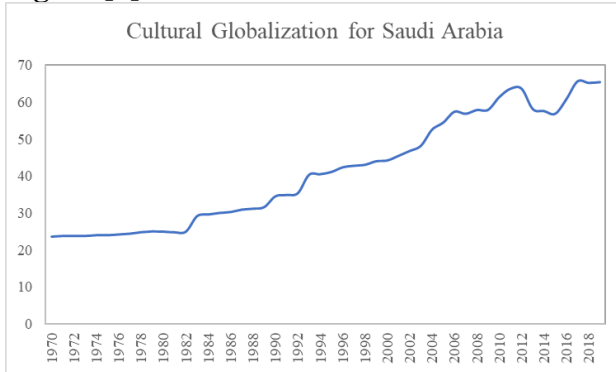
Source: Author's calculations.

Figure [8]: Informational Globalization



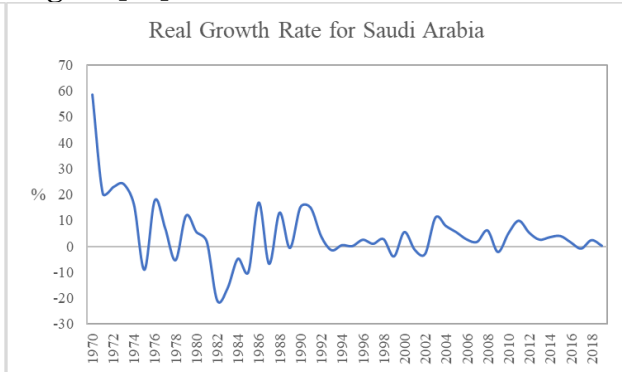
Source: Author's calculations.

Figure [9]: Cultural Globalization



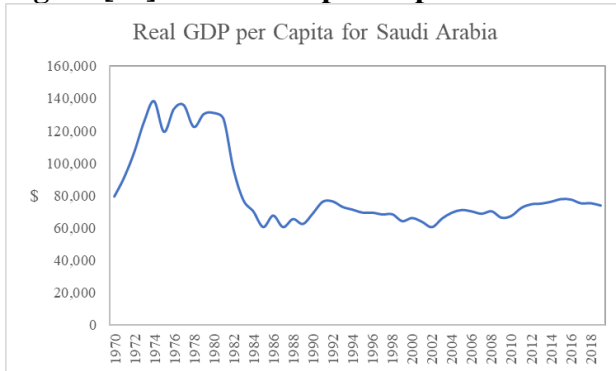
Source: Author's calculations.

Figure [10]: Real Growth Rate



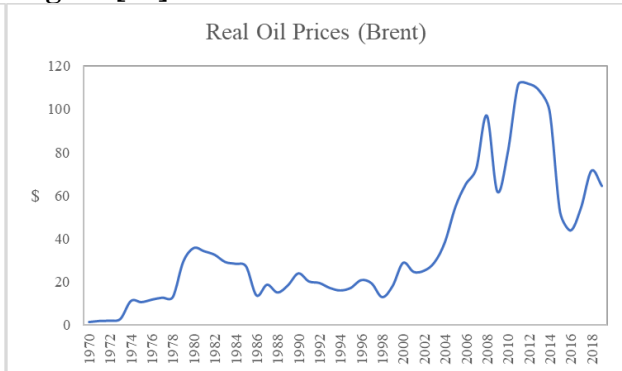
Source: Author's calculations.

Figure [11]: Real GDP per Capita



Source: Author's calculations.

Figure [12]: Real Oil Prices



Source: Author's calculations.

Econometric Methodology: To analyze the impact of globalization on economic growth in Saudi Arabia, I ran the following three OLS regression models:

$$(1) \text{ Real Growth}_i = \beta_0 + \beta_1 \text{Globe}_i + \beta_2 X_i + \varepsilon_i$$

$$(2) \text{ Real Growth}_i = \beta_0 + \beta_1 \text{ECO}_i + \beta_2 \text{SOC}_i + \beta_3 \text{POL}_i + \beta_4 X_i + \varepsilon_i$$

$$(3) \quad \text{Real Growth}_i = \beta_0 + \beta_1 \text{Trade}_i + \beta_2 \text{Financial}_i + \beta_3 \text{Personal}_i + \beta_4 \text{Informational}_i + \beta_5 \text{Cultural}_i + \beta_6 \text{POL}_i + \beta_7 X_i + \varepsilon_i$$

Where Real Growth_i is the logarithm of real GDP per capita growth rate, Globe_i is the logarithm of Globalization Index, ECO_i is the logarithm of economic globalization, SOC_i is the logarithm of social globalization, POL_i is the logarithm of political globalization, Trade_i is the logarithm of trade globalization, Financial_i is the logarithm of financial globalization, Personal_i is the logarithm of interpersonal globalization, Informational_i is the logarithm of informational globalization, Cultural_i is the logarithm of cultural globalization, X_i includes two control variables: the logarithm of one-year lagged real GDP per capita and the logarithm of real oil prices per gallon (Brent), i is the year, and ε_i is the error term. Except for real oil price variable, all other variables are for Saudi Arabia. These models were estimated using EViews software. Statistical significance was established by comparing the reported p-value to three alpha levels of 0.01, 0.05, and 0.10.

Results and Discussion: Table [3] presents the results of this study. According to model (1), globalization had a positive impact on real growth in Saudi Arabia between 1970 and 2019 but this finding is not statistically significant. Model (2) on the other hand provides a clearer picture than model (1); it shows that social globalization is the only positive influence on real growth whereas economic and political globalization have negative effects. Therefore, what drives the positive impact of globalization in model (1) is social globalization. These results of model (2) are all statistically significant at the 1% and 5% alpha level. Model (3) has yet more details to offer. According to model (3), the two components of economic globalization are split between a positive economic impact and a negative financial impact, with the former being statistically insignificant while the latter being statistically significant. With respect to the three components of social globalization, interpersonal and informational globalization have positive effects on real growth while cultural globalization has a negative effect, though interpersonal globalization is the only variable with statistical significance at the 5% alpha level. Finally, political globalization's negative impact on real growth remains the same in model (3) as in model (2) with 95% confidence level. Based on Durbin-Watson test, the results of all three models do not seem to suffer from any serious autocorrelation issues. Also, the results of the F-test show that the entire regression for each of the three models is statistically significant.

Table [3]: Globalization Impact on Real Growth in Saudi Arabia

Dependent variable	Real Growth Rate		
	(1)	(2)	(3)
Globe	0.01 (0.02)		
ECO		-0.05** (0.02)	
SOC		0.02*** (0.01)	
POL		-0.05*** (0.01)	-0.03** (0.01)
Trade			0.02 (0.02)
Financial			-0.07*** (0.02)
Personal			0.07** (0.03)
Informational			0.01 (0.01)
Cultural			-0.02 (0.02)
R ²	0.14	0.46	0.59
Prob(F-statistic)	0.07*	0.00***	0.00***
Durbin-Watson Stat	1.57	2.29	2.50

Notes: All three regressions include the following controls: One-year lagged real GDP per capita, real oil prices, and an intercept. Standard errors are shown in parentheses.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Source: Author's calculations.

Looking at the results all together, we can see that while social globalization positively impacted real growth in Saudi Arabia from 1970 to 2019, economic and political globalization had a negative impact. The results also show that the more open Saudi Arabia is toward foreigners and immigrants, the higher the real growth rate is. Specifically, greater numbers of international students, international tourists, and immigrants are good for Saudi Arabia's real growth. Surprisingly, the more financial capital can flow internationally, the lower the real growth rate is. This means that more foreign direct investments, international equity portfolio investments, and international income payments is bad for Saudi Arabia's real growth rate. Unlike financial openness, economic openness, such as openness of exports and imports in goods and services, as well as informational openness, such as greater access to the internet,

is good for Saudi Arabia's real growth, though this finding is not statistically significant. In addition, there is weak evidence of negative effects of cultural openness on Saudi Arabia's real growth, where cultural openness is measured by trades in cultural goods and services and the numbers of McDonald's and IKEA's stores as a percentage of population.

Conclusion: This paper analyzes the impact of globalization on real growth in Saudi Arabia between 1970 and 2019. To do so, three econometric regressions were run. First regression examines the impact of total globalization on Saudi Arabia's real growth and finds statistically insignificant positive impact of globalization. Second regression examines the impact of economic globalization, social globalization, and political globalization on Saudi Arabia's real growth and finds statistically significant positive impact of social globalization but statistically significant negative impact of both economic globalization and political globalization. Third regression examines the impact of trade openness, financial openness, interpersonal openness, informational openness, cultural openness, and political openness on Saudi Arabia's real growth and finds statistically significant positive impact of interpersonal openness, statistically significant negative impact of both financial openness and political openness, statistically insignificant positive impact of both trade openness and informational openness, and statistically insignificant negative impact of cultural openness.

To summarize all findings of this paper, we can say that the net impact of globalization on real growth in Saudi Arabia is unclear. Not everyone is a winner or a loser. This conclusion proves that globalization is a complex process that is not easy to manage. This is not to say that we should abandon globalization all together, but rather we should be aware of its downside so that the government can design the appropriate policies to enjoy its benefits and mitigate its costs.

References:

- Adesina, O. S. (2012). The negative impact of globalization on Nigeria. *International Journal of Humanities and Social Science*, 2(15), 193-201.
- Afzal, M. (2007). The impact of globalization on economic growth of Pakistan. *The Pakistan Development Review*, 46(4), 723-734. <http://www.jstor.org/stable/41261192>
- Aslam, A., Eugster, J., Ho, G., Jaumotte, F., & Piazza, R. (2018). Globalization helps spread knowledge and technology across borders. *IMF Blog*. Retrieved March 10, 2023, from <https://www.imf.org/en/Blogs/Articles/2018/04/09/globalization-helps-spread-knowledge-and-technology-across-borders>
- Baris, S. (2023). The impact of globalization on external debts: Evidence from developing countries. In I. Management Association (Ed.), *Research Anthology on Macroeconomics and the Achievement of Global Stability*, 1403-1428. IGI Global. <https://doi.org/10.4018/978-1-6684-7460-0.ch075>
- Chang, C. P., & Lee, C. C. (2010). Globalization and economic growth: A political economy analysis for OECD countries. *Global Economic Review*, 39(2), 151-173. <https://doi.org/10.1080/1226508X.2010.483835>
- Dreher, A. (2006). Does globalization affect growth? Evidence from a new index of globalization. *Applied Economics*, 38(10), 1091-1110. <https://doi.org/10.1080/00036840500392078>

- Duggal, S. (2023). International trade law theories. Legal Service India. Retrieved February 24, 2023, from <https://www.legalserviceindia.com/legal/article-2758-international-trade-law-theories.html>
- EIA. (2023). Independent Statistics and Analysis: Petroleum and Other Liquids. Retrieved March 14, 2023, from https://www.eia.gov/dnav/pet/pet_pri_spt_s1_a.htm
- Elsherif, M. A. (2016). The impact of globalization on economic conditions: Empirical evidence from the MENA region. *International Journal of Business & Economic Development*, 4(1), 1-14.
- ETH Zurich. (2023). KOF globalization index. KOF Swiss Economic Institute. Retrieved March 12, 2023, from <https://kof.ethz.ch/en/forecasts-and-indicators/indicators/kof-globalization-index.html>
- Gygli, S., Haelg, F., & Sturm, J. E. (2018). The KOF globalization index—revisited. KOF Swiss Economic Institute, KOF Working Paper, No. 439. Retrieved March 27, 2023, from https://ethz.ch/content/dam/ethz/special-interest/dual/kof-dam/documents/Globalization/2018/KOF_Globalisation%20Index_Revisited.pdf
- Irwin, D. A. (2022). Globalization enabled nearly all countries to grow richer in recent decades. Peterson Institute for International Economics. Retrieved March 10, 2023, from <https://www.piie.com/blogs/realtime-economic-issues-watch/globalization-enabled-nearly-all-countries-grow-richer-recent>
- Paliwal, D. (2022). Theories of international trade. iPleaders. Retrieved March 5, 2023, from <https://blog.iplayers.in/theories-of-international-trade/>
- Polasek, W., & Sellner, R. (2013). Does globalization affect regional growth? Evidence for NUTS-2 regions in EU-27. *Institute for Advanced Studies, Vienna*, 4(1). DOI:10.2478/danb-2013-0002
- Rao, B. B., Tamazian, A., & Vadlamannati, K. C. (2009). Growth effects of a comprehensive measure of globalization with country specific time series data. *Applied Economics*, 43(5), 551-568. <https://doi.org/10.1080/00036840802534476>
- Rao, B. B., & Vadlamannati, K. C. (2011). Globalization and growth in the low-income African countries with the extreme bounds analysis. *Economic Modelling*, 28(3), 795-805. <https://doi.org/10.1016/j.econmod.2010.10.009>
- Rehman, A., Alam, M. M., Ozturk, I., Alvarado, R., Murshed, M., Isik, C., & Ma, H. (2022). Globalization and renewable energy use: How are they contributing to upsurge the CO2 emissions? A global perspective. *Environmental Science and Pollution Research*, 30, 9699-9712 (2023). <https://doi.org/10.1007/s11356-022-22775-6>
- Statista. (2023). Average Annual OPEC Crude Oil Price From 1960 to 2023. Retrieved March 14, 2023, from <https://www.statista.com/statistics/262858/change-in-opec-crude-oil-prices-since-1960/>
- Stiglitz, J., E. (2003). Globalization and growth in emerging markets and the new economy. *Journal of Policy Modeling*, 25, 505-524. doi:10.1016/S0161-8938(03)00043-7
- The World Bank. (2023). Data: Saudi Arabia. Retrieved March 14, 2023, from <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=SA>

Yap, J., & Huan, A. (2018). The good, the bad, and the ugly of globalization. Deloitte. Retrieved March 11, 2023, from <https://www2.deloitte.com/kh/en/pages/risk/articles/sid-dir-bulletin-globalization.html>

Ying, Y. H., Chang, K., & Lee, C. H. (2014). The impact of globalization on economic growth. *Romanian Journal of Economic Forecasting*, 17(2), 25-34.