

## **The Impact of offshoring services on the Egyptian Economy**

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### **ABSTRACT:**

This study tries to explore and examine the meaning of offshoring of services and how the imported services of offshoring will impact the Egyptian Economy, through using a literature review, and vector autoregression (VAR) model to understand the relationship between offshoring of services and the Egyptian economy using data from (1979 till 2020) the data divided to nine different variables, two of them representing the imported offshoring of services, Commercial service imports & Services imports –BoP current, and the other seven representing the Egyptian Economy, GDP current us, GDP per Capita us, GDP per Capita Growth annual, Inflation GDP Deflator, Unemployment total (ILO estimate), oil rents % of GDP, and Gross value added at Basic prices. The study of the statistical model used in this research proves that there is a strong

correlation between imported offshoring of services and the Egyptian economy, specifically the economic growth. Other results of this paper show also no significant impact of imported services of offshoring on employment, inflation, or the gross value added, as a result, we can build a model to measure the effect of offshoring of services on the Egyptian Economy .

**Keywords:** offshoring of service – Egyptian Economy – imported services

**INTRODUCTION: -**

Globally, the importance of the offshoring market is expected to show rapid growth and reach USD 540b by 2026 from USD 310-320 b in 2019. On the local level, Egypt is home to 400+ world-renowned offshoring players, including 10+ Fortune 500 companies, serving offshoring demand for ITS, BPS, KS, and ER&D (ITIDA 2022), The use of foreign intermediate inputs for domestic goods and services is called offshore, however, the process of bringing goods production and manufacturing "back home" is known as reshoring. It is the inverse of offshore, which is the process of manufacturing items overseas to cut labor and manufacturing costs (Johansson & Olhager, 2018). The term 'back shoring' refers to relocation back to the firm's native country of origin (Tokas, 2021). Outsourcing and offshoring are usually driven by low costs. Availability of skills, Environment, quality of infrastructure, risk profile, and Market potential. (Pisani, N., & Ricart, J.E, 2016). However, there are some

differences between both concepts, as the act of outsourcing involves moving business operations to an outside company that can do so more cheaply and with a higher level of specialization. On the other side, offshoring is the practice of relocating an organization's operations to another nation. From another perspective Offshoring is the relocation of an aspect of a business's operations from one country to another; typically, to a country where labor costs are lower. Offshored work is often contracted out to an external company (referred to as outsourcing). (IZA. 2023)

According to (Gusenbauer, & Massini, 2019) the concept of Offshoring has grown into a management practice that affects people's job prospects, national well-being, and the performance of organizations. Offshoring has been discussed by scholars, the public, and policymakers due to its changing and radical character. Yet, offshoring is viewed very differently by various groups, leading to a lack of clarity that often remains implied. As a result, disagreement based on concealed conceptions and poor research-based policy and management choices results from ineffective and insufficiently understood research and practice.

While nearshoring and reshoring are frequently used interchangeably; nonetheless, they are completely distinct. When your company partners with suppliers, manufacturers, and other critical channels located within your company's place, this is often referred to as nearshoring. (Karpagavalli S, 2022)

Offshoring has a traditional classification signified by the industry to four terms as fall follows (Paul Tjia 2020): - IT services, abbreviated: (ITS) Example: IT consulting, System Integration, Custom Application Development and management, Testing, Infrastructure Services Outsourcing, Support & Training, etc. Business Process Services, abbreviated: (BPS) Example: Contact center, Finance, and Accounting, Human Resources, Supply Chain Management, & Vertical specific activities, etc. Knowledge Services, abbreviated: (KS) Examples: Program & change management, Digital agency, and marketing, Analytics, Market research & data services, Legal services, etc. Engineering Research Development: abbreviated: (ER&D) Examples: Software, Embedded Electronics, & Core Engineering, etc. Services trade varies from goods trade in that services are generated and consumed at the same time. Thus, services provided to a traveler may be consumed in the producing nation (for example, the usage of a flight ticket), but are categorized as imports from the traveler's country. In some circumstances, services may be provided from a distant place; for example, insurance services may be provided in one nation and consumed in another.

In 2022, service imports for Egypt were 25,398 million US dollars. Service imports of Egypt increased from 6,473 million US dollars in 2003 to 25,398 million US dollars in 2022 growing at an average annual rate of 8.34%.

In this study, we will try to assess the impact of imported offshoring of services on the Egyptian Economy by proposing three hypotheses and using a statistical model (to evaluate the relationship between the offshoring X variables and Egyptian Economy Y Variables). The results of this study show that there is a correlation between the offshoring of services and the Egyptian economy.

### **PROBLEM OF THE STUDY**

The researcher found that the neglect of studying the impact of offshoring in the economy of developing countries specifically Egypt as an importer of offshoring services could be an issue or key issue for this research because most of the studies and models used - to the knowledge of the researcher - to predict the economic impact of offshoring dedicated to developed countries and concentrated on IT offshoring or focus their attention on the microeconomic variables or one macroeconomic variable (employment) only in the assessment of the impact of offshoring or outsourcing which reduces the accuracy of estimation of such impact and reduces the ability to achieve goals of such assessment, and in the presence of correlation between economic and offshoring as an emerging phenomenon

In this context, the researcher went to the first question: Is it possible to assess the impact of offshoring on the Economy of developing countries Second: Does it help that assessment to measure the impact of the Egyptian economy? Building on all

**these facts, the researcher elaborated on the main problem purely as follows- :**

Is it possible to measure the impact of offshoring on the developing economy as consumers of offshoring services, and to help in producing an effective model for assessment of the impact on the economy of Egypt?

**STUDY IMPORTANCE**

- The mutual influence between economy and the offshoring and outsourcing becomes a reality that imposes itself when predicting any economic issue.
- Relate the importance of the current study about the importance of offshoring of services as an area for economic growth.
- The impact of economic growth on the community in terms of increasing the size of social spending and increasing welfare in the communities.
- Scarcity of analytical studies on the relationship between offshoring services and the economy of developing countries like Egypt as importers of such services, not exporters.
- On the other hand, there is scarcity of analytical studies for offshoring and outsourcing of other services rather than IT Services.
- A need to work on the Macroeconomics level to measure and understand the mutual impact of offshoring services on the economy.

## **STUDY OBJECTIVES**

- Understand the most important types of offshoring and outsourcing.
- Study the most important features of economic issues related to the offshoring of services in Egypt.
- Study the effect of consumed imported offshoring of services on the economy of Egypt.
- Study the most important methods and levels of integration between the offshoring of services and the Egyptian Economy.
- The development of a proposed model to examine the relationship between the offshoring of services and the Egyptian Economy

## **HYPOTHESES**

(H1) - There is a correlation between the imported offshoring of services and the Egyptian Economy. From 1979 to 2020.

(H2) - There is a correlation between some of economic variables and imported offshoring of services Variables in Egypt.

(H3) - There is a correlation between the imported service from offshore and the Egyptian Economy together, to build a model to assess such a relationship.

## **LIMITATIONS OF THE STUDY**

The application is on the Arab Republic of Egypt using data from the years 1979 to 2020.

## **LITERATURE REVIEW**

(Abdel-Haleim, S. M. 2023) the impact of state debt (domestic and external debt) on Egypt's economic development is experimentally investigated in this article utilizing quarterly data from 2002 to 2020. A structural vector autoregression model is used to accomplish this goal. Furthermore, the model incorporates variables that measure the important channels via which the influence of public debt is transmitted to economic growth, namely public and private investments, and domestic savings. The findings reveal that foreign debt initially slows growth, but this effect is reversed in the first quarter. The negative impact of GDP cumulative responses to public debt, Furthermore, the negative reaction of private investment to domestic debt indicates a crowding-out effect induced by domestic debt, whereas external debt stimulates private investment. Furthermore, the data highlights the importance of public investment in supporting private investment. Furthermore, there is a strong interdependence between domestic and external debt, with an increase in one driving up the other. The findings of the article are important for policymakers since they have important implications for debt management strategy.

(Markopoulos T, & Karkazis J, 2023) in a paper entitled Strengths and Vulnerabilities of the Egyptian Economy, the authors see Egypt, being a prominent participant in the East Mediterranean Sea region, also plays an important role in the

Middle East and North Africa. The Egyptian economy, as well as the country's political stability, play a significant influence in this position. This analysis aims to uncover its strengths and weaknesses to assess its position in the geopolitical context. Understanding the mechanism of peripheral security in the region allows us to add another piece to the puzzle by assessing its economic capacities as a major actor in the Middle East and North Africa. Egypt, as a high-population country, presents particular economic issues that must be addressed in order to potential economic instability in the short and long term, as well as to establish prosperous conditions for Egyptians.

(Kamal & AboElsoud, 2023) From 1991 to 2019, this paper explores the sources of Egypt's economic growth over four generations of reforms. To investigate the role of input factors on economic growth, using the augmented Solow model, which comprises together human and physical capital accumulation. Variables employed in the analysis are Gross Domestic Product, capital, productivity, human capital, and employment. The paper employs quantile regression econometric modeling to investigate the drivers of growth in Egypt's economy at various stages of reform, as well as the convergence of income segmentations. The main findings of the research, productivity, and human capital accumulation have emerged as the most important sources of growth. The poor growth performance can be linked to a lack of investment in both physical and human resources. Furthermore,

the findings reveal that trends in human capital, productivity, and capital are all strongly driven by savings volatility and population growth rates. As a result, the Egyptian economy's economic growth cycle is dictated by rates of savings and population increase. When these rates begin to trend in a direction that allows human capital, productivity, and capital to expand, robust capital accumulation emerges and boosts economic growth, and vice versa.

(Olewi H, & Kazem H. 2023). In their study about offshoring and its impact on transferring jobs or operations abroad, offshoring is causing controversy as more high-paying white-collar jobs are moved offshore. This paper aims to provide a big picture of this phenomenon by examining the extent and nature of offshoring as well as its impact on the labor market. It aims to present a reasoned criticism of the existing literature on this subject. It also aims to identify a policy that includes the objectives to be achieved and the principles to be applied in the process of transfer abroad, including a policy for analyzing costs, benefits, and major risks, and countermeasures for all outsourcing options to provide services. While offshoring saves companies labor costs and other personnel-related expenses, it also contributes to an atmosphere of anxiety among workers who believe their jobs are under threat. The Research Problem Human resource management is very tough during the offshore process for the organization, which will lose experienced workers, or for

individual employees, who will confront undesired change and the danger of losing their jobs. The costs of these management efforts, particularly monitoring and relocation, are substantially higher for offshore enterprises than for outsourcing services. In comparison to outsourcing or housing enterprises, offshore companies confront a wide range of challenges, including government interactions, contract negotiation, and intellectual property rights.

(Ekom Akpan et al., 2023) This paper investigates the notions of international outsourcing and offshoring in the context of multinational firms in Nigeria. The study had a qualitative approach, and data was gathered through interviews with twenty-two respondents from eleven international firms. Purposive and snowball sampling approaches were used to select respondents from the telecommunications, manufacturing, and oil services industries. According to the report, foreign outsourcing and offshoring may be either a blessing or a curse for multinational corporations, depending on how and when they are used. The main finding of this paper is to reap the benefits of outsourcing and offshoring, multinational corporations should ensure that the costs of manufacturing in-house are not greater than the costs of outsourcing or offshoring. To generalize the findings, it was also proposed that future studies involve additional individuals and sectors.

(Mukherjee et al., 2023) In this paper, authors use bibliometric techniques (Donthu et al., 2021), They use underlying intellectual structure and map its chronological, spatial, and thematic evolution using performance analysis, author network analysis, bibliographic coupling, and subject trend analysis. The main findings of this paper are the findings reveal six foundational themes for offshoring research: (1) offshoring and global supply chains, (2) offshoring of IT/business processes, (3) offshoring outcomes, (4) governance mechanisms in offshoring and success strategies, (5) offshoring drivers, and (6) manufacturing back shoring.

(Karpagavalli S, 2022) in this study, the author tries to distinguish between both offshoring and outsourcing based on the organization's performance, the cost for maintenance, business profitability, and the organization's challenging situations "risks". Through collecting of a primary quantitative data process has been used for the collection of reliable information, from many companies, The main finding of this study is that the suggested approach will assist in removing the risk factors associated with outsourcing and offshore methods to improve business stability.

(Koerner, 2022) This research examines the labor market implications of offshoring in a high-wage home country and how these effects are influenced by two factors (1) job complexity and (2) destination country characteristics. It thus connects several

sources: rich administrative data on individuals and plants in Germany's manufacturing industries, information on a job's task bundle, and the evolution of imported inputs from low-wage or high-wage destinations, represented by Eastern and Western Europe, respectively. The findings of this research in terms of the relative task complexity of jobs, offshoring to different origins has conflicting effects on German wages: While offshore to the West puts downward pressure on salaries for complicated jobs while raising pay for simple jobs, offshoring to the East has the reverse impact. The overall effect results in a 4.2 percent increase in pay for high-complexity jobs and a 3.9 percent fall in wages for low-complexity jobs.

(Mahmood & Saqib, 2022) Oil rents contribute significantly to income in OPEC states and may have environmental repercussions. The current study investigates the asymmetrical impacts of oil rents on CO2 emissions in thirteen contemporary OPEC economies during the period 1970-2019, and it also tests the Environmental Kuznets Curve (EKC) hypothesis. The main findings of this paper are long-run results that reveal that economic growth has a beneficial effect on CO2 emissions, but its square term has a negative effect.

(Kretzner & Berger, 2022) this paper examines the productivity effects of offshore small and medium-sized firms (SMEs) in Germany using plant-level evidence and compares them to those determined for a sample of big corporations. Small

and medium-sized enterprises (SMEs) typically have fewer resources than larger corporations, making it more difficult for them to capture the potential productivity improvements associated with offshore. Also, the paper finds evidence for the group of SMEs that plants are offshore commercial activities they are among the more productive. Offshoring plants, on the other hand, lose this advantage over their non-offshoring counterparts. The initial productivity gap is corrected, and offshoring plant production lags even several years after other has.

A study conducted by (Klimek, 2021) highlights that offshore white-collar employment, also known as foreign direct investment (FDI) in advanced business services (ABS), has grown in recent years, to be one of the most significant changes in the way multinational corporations (MNCs) conduct business all over the globe, This phenomenon's specific theoretical framework is not well understood. Two goals formed the foundation of the author's paper. The initial goal is to propose a straightforward formal model for business services within MNCs and to briefly describe the major components of the theoretical framework. The model's assumptions in the empirical portion are to be confirmed as the second goal. Based on the use of a multinomial logistic model, which shows the likelihood of establishing an ABS subsidiary taking into account MNC characteristics.

Another study by (Klimek & Sass, 2021b) on the same study area of previous study attempts to determine the extent to which so-called offshore of white-collar jobs, result in inward foreign direct investment (FDI) in advanced business services (ABS) and alter the structure of employment in host economies. For the period between 2005 and 2014, the authors use a fixed-effect regression model based on cross-regional panel data for European Countries. The results of this study demonstrate the structural effects of (ABS) (FDI): employment in foreign-owned enterprises raises the share of the tertiary sector in a region both directly and indirectly by encouraging other tertiary activities.

(Hamza, & Abouzeid. 2021) The paper investigates the reasons for inflation in Egypt and how the Egyptian economic situation has changed, particularly in terms of household income and purchasing habits. Egypt's inflation has surged in recent years as a result of the Egyptian pound's floatation in late 2016 and the government's decrease in energy subsidies. As a result of the fluctuation, the pound lost half its value, forcing prices to rise across the board. According to the Egyptian Central Bank, inflation peaked at 35% in July 2017, after which it began to progressively fall. Though the floating of the pound led inflation to skyrocket, economists and scholars believe it was not the main cause. While the Egyptian economy began to recover from the effects of the 2008 global financial crisis, it was hit again in 2011 by a period of prolonged instability in politics and civil unrest,

which reduced foreign currency inflows. The tourism sector, which is also a major source of hard currency, was severely impacted, particularly after political instability in 2011 as well as several terrorist attacks, causing the sector to collapse and laying off hundreds of thousands of employees and staff, which weighed heavily on the country's deteriorating economic performance.

In study by (Tokas, 2021) using the results of fourteen semi-structured interviews with various stakeholders was categorized by the CAGE methodology. Through examining the four dimensions of the cultural-administrative-geographic-economic (CAGE) distance framework by Ghemawat (2001) were used to conduct a qualitative analysis to compare China and India as service providers from the perspective of Japanese MNEs for information technology (IT)-IT-enabled services (ITeS) offshoring destination. This will help to conduct a comparative evaluation of the difficulties and synergies present between India and Japan relative to China and Japan in the context of the IT-ITeS outsourcing business, this exploratory study used a combination of primary and secondary evidence. The findings of this paper depend on the fact that the IT-ITeS industry, owing to its characteristics and the changing global order in the post-pandemic world, for business involvement between nations, cultural, administrative, and economic "distances" are the most important. According to the comparison analysis, China performs

better than India, on the other hand in terms of administrative and economic distances, India was in a better position. India and Japan have greater synergies and potential rewards from increasing their involvement in the IT-ITeS sector in the future.

(Pablo A & Jana H, 2021) In the wake of the 2008 financial crisis, this article reexamines the impact of offshore on the US economy. The authors distinguish between the offshore of high- and low-skill industries using a matching model with endogenous adjustment of educational abilities. The major conclusions first demonstrate that offshore causes an economic restructuring through a shift in wage premiums, where overall welfare is enhanced. Additionally, the study demonstrates in a policy exercise how the welfare losses brought on by offshoring could be offset by greater labor flexibility if it were to be challenged by a protectionist agenda.

An Important study conducted by (Elewa, Zeinab T., 2021) about the phenomenon of outsourcing and the Egyptian Experience in applying outsourcing, the study shows that many reasons cause the phenomenon of outsourcing to spread all over the world in localization, rates of trade and services liberalization, the transformation from industry economy to service economy, and technology which make the world small village. the study concludes that Egypt has the potential to become a leading source of trade services for European countries and America too.

In a study conducted by CBI (Centre for the Promotion of Imports from Developing Countries) by Paul Tjia (2020) about IT outsourcing in Egypt, the study was conducted to determine prospects, challenges faced by SMEs operating in this market, and necessary solutions. Egypt's IT sector was chosen for this study because: Egypt has a significant IT outsourcing sector with the potential to further develop, thereby creating jobs, The study findings are first, Egypt has the potential to build a stronger value chain IT sector, second, the ability of IT sector to support the Egyptian Economy, by providing more jobs and profit for small business by exporting IT service to the world.

(Hobela, V. 2020) The study's objectives are to provide a theoretical examination of offshoring, determine how it affects national economic security, and devise strategies for de-offshoring the economy. The study examines the volume of tax asymmetries, the volume of offshore economies, and the volume of offshore capital outflows of various nations. The study also presented a theoretical analysis of the offshore process within the framework of national economic security, identifying the key drivers, benefits, and drawbacks of this process for the national economy. One of the findings of the study was that a sizeable portion of the capital withdrawn is transferred back into the domestic economy as so-called "round-trip" investments.

(Nordås, 2020) This paper proposes a metric for narrow outsourcing: as services functions account for 40% of

manufacturing jobs. The matching of service functions done by workers within manufacturing enterprises to the same service functions provided by outside providers. Narrow outsourcing is introduced into labor demand functions, where labor is categorized according to business functions. On average, the impact of narrow offshore on manufacturing labor demand is minor, but it is highly dependent on the complexity of the value chain, the policy environment, and ICT development. Offshoring has the greatest impact on IT and R&D functions.

Another paper (Brandl, 2019) tries to examine the activities connected to the transfer and co-creation of knowledge in the service production process, this paper attempts to determine the impact of outsourcing on knowledge-intensive services (KIS). The main finding of this paper is that the manufacturing process is altered by offshoring, as demonstrated by a qualitative case study of numerous offshored KIS. While the co-creation of knowledge is still clearly obvious in the process, activities connected to knowledge transfer are decreased. As a result, KIS evolved in characteristics, becoming more modular and less personalized.

(Atkins et al., 2019b) This paper examines the expanding dimensions of service activity outsourcing in both the manufacturing and service industries. Trade in Value-Added Data shows a large potential for global welfare from service outsourcing; nevertheless, the negative consequences must be countered by proper institutions in both native and foreign countries. The main findings of this paper

are (1) Offshoring helps businesses to focus on activities linked to their competitive advantage or other high-value-added operations. This, in turn, may enhance their production, resulting in a chain reaction that leads to decreased pricing, more demand, and the creation of new jobs, (2) Another advantage of corporations' capacity to offshore service operations is that it allows developing countries to participate in the global market and expand their economies to a greater extent. (3) Offshoring has several negative impacts. The domestic service industry decline is caused by two sources. First, as services are acquired from outside, demand in the home economy falls, reducing the service sector in the long run. Second, technological advancements expand the number of possibly offshored service operations. (4) Offshoring of service activities has a minor negative impact on overall employment while converting the workforce into a more highly skilled, white-collar employment environment. These findings imply that service outsourcing generates jobs. Also, there is a positive impact on wages.

(Eppinger, 2019) This paper examines the employment consequences of service offshore using a newly integrated and highly extensive panel dataset that spans practically the entire universe of German enterprises' service imports from 2001 to 2013. It finds that service offshore has improved firm employment by using firm-specific export supply shocks by partner nations and service categories as an instrumental variable. According to the canonical trade-in tasks model, enterprises with

higher beginning levels of service offshore see bigger employment gains. The main findings are major technical improvements have recently sparked a new wave of offshore in formerly non-tradable services. Should developed-country service employees be concerned about their jobs? Trade theory provides a nuanced answer to this topic, implying that outsourcing efficiency advantages may offset direct employment losses, leaving the projected net effect uncertain.

In a study conducted (Gusenbauer & Massini, 2019) with the purpose of understanding the meaning of offshoring and putting a clear definition out of the 73 offshoring definitions, exists Literature, they found that offshoring has developed into a common management practice that has an impact on people's employment opportunities, national welfare, and the competitiveness of businesses. Offshore is disputed by academic scholars, the general public, and policy officials because of its revolutionary and disruptive nature. However, offshore is perceived quite differently by different parties, leading to vagueness and ambiguity that frequently remain implicit. As a result, disagreement based on latent constructs and bad research-based management and policy decisions occurs from the ineffective and incompletely understood debate in research and practice.

(Johansson & Olhager, 2018) this paper tries to explore the reasons for choosing and the links between offshoring and backshoring, according to the literature, three primary plant location

variables must be considered: (1) availability to low-cost manufacturing, (2) market proximity, and (3) access to development competencies. Offshoring and backshoring are two possibilities for shifting the global industrial footprint. This study examined the function and importance of these manufacturing site location characteristics as drivers of offshore and backshoring decisions, as well as their link with operational success. The paper used survey data drawn from Swedish manufacturing plants, including 133 offshoring projects and ninety-nine backshoring projects. The findings confirmed that these three major location factors are important for both manufacturing offshoring and backshoring; however, the findings also revealed significant differences in how these factors influence relocation decisions for offshoring and backshoring, as well as how they affect performance.

In a study conducted by (Bhanja, S, et al., 2018) is titled “Egypt: The Journey Toward Becoming the Preferred Offshoring Hub” the authors tried to discuss the new phenomenon of offshoring and why Egypt has to be a center for offshoring in the world, and the concept of 3rd Platform technologies, as Egypt has many positive factors to become an offshoring hub, like, Huge emphasis is placed on resource pool generation and skill development, Government Support, and Physical Infrastructure. Also, the paper highlights The IT export market in Egypt which is divided into two sections, Offshore IT Services and Captive IT

Services. The main conclusion of this paper is that Egypt has the advantage of being a hub for the offshoring of technology.

(Feenstra, 2017) The author of this paper defines "first generation" statistics to quantify offshore as the fraction of imported intermediate inputs in costs, as well as O\*NET data to measure task traceability. These statistics were used to calculate the shifts in relative labor demand and pay caused by offshore. One disadvantage of these statistics is that they cannot be utilized to assess the impact on real wages; for that, price-based estimates of offshore are required. From worldwide input-output tables, "second generation" data have lately emerged. Foreign value-added in exports and its counterpart, domestic value-added in exports, are examples of these measurements. Or its inverse, domestic value-added in exports. We demonstrate the foreign value-added component of China's export rise following its WTO membership in 2001. We believe that such second-generation statistics should be complemented by a price-based measure of offshore, and we propose one simple metric that extends the effective rate of protection on imports to exports.

(Mrsik & Kostovski, 2017) they try the study the effect of accounting services from a host country on other companies in different countries by applying to the Republic of Macedonia to provide offshore accounting services while adhering to the McKinsey Institute's standards for evaluating outsourcing locations as a whole. The researchers have observed that there are significant

opportunities for accounting and associated services to be offshored. The development of the accounting profession and the employment of recent graduates would both benefit greatly from the utilization of these potentials. Considering these points, we provide some applicable advice to the industry and the decision-makers for further promoting this business prospect.

(Pisani & Ricart, 2016) In this study, the authors conduct a comprehensive assessment of the literature to map and evaluate the body of international business (IB) research on the Offshoring of Services (OS) phenomena. To accomplish our goal, we identified and analyzed seventy-nine articles published between 1990 and 2014 in a chosen set of fourteen publications widely regarded as premier publishers of IB research. This review aims to contribute to the IB discipline in three ways. First, it gives an in-depth review of the OS literature, including a synthesis of the theoretical viewpoints used and an evaluation of the empirical data collected. Second, it provides an organizing structure that aids in the development of a more sophisticated understanding of the OS phenomenon. Third, it identifies emergent OS topics and offers potential future directions.

(Nassar, H. 2011). In a study entitled "Growth, Employment Policies, and Economics" the author tries to find the link between economic policies including growth and employment in Egypt. The primary goal of this research is to examine Egypt's growth, economic policies, and employment links in the context of the

global financial crisis. Egypt's economic and social environment is marked by significant societal changes and fast economic transformation, with some economic development and trade expansion. Global interconnectedness is increasing, and regional economic integration is speeding up. Trade liberalization has an impact on global production and distribution systems, affecting employment and job quality. Recently, the oil exporting sector has seen the impact of the global crisis through a decline in international demand, primarily for industrial products, and a decrease in income transfers from working migrants.

(Houseman et al., 2010) the study investigates the implications of the offshoring Bias in the U.S. economy by applying it to the manufacturing sector productivity and value-added, the main finding of this study is that the official numbers have a major bias due to imports from poorer nations. Offshoring's rapid expansion has created a heated discussion about its effects on the American manufacturing sector, which has seen sharp employment cuts despite robust output growth. This paradox is explained by the significant increases in manufacturing productivity the importance of this study for our research is that it gives us a guideline on how to measure the impact of importing offshoring services on the economy in general and one manufacturing sector in specific.

(Amiti & Wei, 2005) This paper uses instrumental variables estimation to address the potential endogeneity of offshoring by

estimating the effects of outsourcing on productivity in US manufacturing industries between 1992 and 2000. It discovers that service offshore has a considerable beneficial impact on productivity in the United States, accounting for around 11% of productivity gains during this period. Material input offshoring has a favorable influence on productivity too, but the scale is smaller, contributing to only 5% of productivity gains. Another finding of this paper is that, when industries are finely disaggregated (450 manufacturing industries), there is a tiny negative effect on employment of less than half a percent. However, at a more aggregate industry level of ninety-six industries, this effect disappears, demonstrating that there is enough growth in demand in other industries within these broadly defined classifications to outweigh any negative consequences.

## **METHODOLOGY**

### **1- VARIABLES**

#### **X1 Commercial service imports (current US\$)**

Commercial service imports are total service imports minus non-government service imports. International transactions in services are defined by the IMF's Balance of Payments Manual (1993) as the economic production of intangible commodities that can be generated, communicated, and consumed at the same time. Definitions could change depending on the reporting economy. This variable was used by Amiti and Wei (2006) Feenstra (2017) Brandl, K. (2019). Kreutzer & Berger. (2022) in their studies for measuring the offshoring of services.

### **X2 Service imports (BoP, current US\$)**

Imports of commodities and services comprise all transactions involving the transfer of ownership of general items, nonmonetary gold, and services from nonresidents to residents between residents of a nation and the rest of the world. Current account balance (BoP, in US dollars) The current account balance is the sum of net goods and services exports, net primary income, and net secondary income. This variable was used by Feenstra (2017). Kreutzer & Berger (2022) in their studies for measuring the offshoring of services.

### **Y1 GDP (current US\$)**

GDP at purchasing power parity is the total gross value contributed by all resident producers in the economy, plus any product taxes and minus any subsidies not included in the product value. It considers neither the depreciation of produced assets nor the depletion and deterioration of natural resources. The figures are in the US \$ as of today. Dollar GDP figures are converted from native currencies using one year's worth of official exchange rates. In a few countries, where the official exchange rate does not correctly match the rate effectively applied to actual foreign exchange transactions, an additional conversion factor is used. This variable was used by Abdel-Haleim, S. M. (2023), Nassar, H. (2011). Kamal, M., & AboElsoud, M. (2023) in their studies for measuring Economic growth

### **Y2 GDP per capita (current US\$)**

GDP per capita is computed by dividing the GDP by the mid-year population. GDP is determined as the total gross value contributed by all resident producers in the economy, plus any product taxes and minus any non-product value subsidies. It considers neither the depreciation of produced assets nor the depletion and deterioration of natural resources. The figures are in the US \$ as of today. This variable was used by Abdel-Haleim, S. M. (2023) Nassar, H. (2011). Kamal, M., & AboElsoud, M. (2023) in their studies for measuring Economic growth.

### **Y3 GDP per capita growth (annual %)**

The annual percentage growth rate in constant local currency is defined as GDP per capita. The aggregates are estimated in constant US dollars in 2010. GDP per capita is computed by dividing the GDP by the mid-year population. GDP at purchasing power parity is the total value supplied by all resident producers in the economy, plus any product taxes and minus any subsidies not included in the product value. It considers neither the depreciation of produced assets nor the depletion and deterioration of natural resources. This variable was used by Mahmood and Saqib (2022) Nassar, H. (2011). Kamal, M., & AboElsoud, M. (2023) in their studies for measuring Economic growth

### **Y4 Inflation, GDP deflator (annual %)**

The yearly growth rate of the GDP implicit deflator shows the rate of price change in the economy. GDP implicit deflator is

defined as GDP in current local currency divided by GDP in constant local currency. This variable was used by Hamza W, & Abouzeid W. (2021) to measure inflation.

**Y5 Unemployment, total (% of the total labor force) (modeled ILO estimate)**

The fraction of the labor force that is unemployed but available for and seeking work is referred to as unemployment. This variable was used by Amiti and Wei (2006) Eppinger, P. S. (2019) Nassar, H. (2011) to measure unemployment.

**Y6 Oil rents (% of GDP)**

The difference between the value of crude oil output at global prices and total production costs is known as oil rent. This variable used by Mahmood, and Saqib, N. (2022) to measure part of economic development.

**Y7 Gross value added at basic prices (GVA) (current US\$)**

The value added in agriculture, industry, and services is added to determine the gross value added at basic prices (formerly GDP at factor cost). If the value added in these businesses is calculated at purchaser prices, the gross value added at basic prices is calculated by subtracting net product taxes from GDP. The figures are in the US \$ as of today. This variable was used by Amiti and Wei (2006), Cobbold, T. (2003), & Mahmood and Saqib (2022) to measure economic welfare.

## **2- THE MODEL**

The research methodology is based on the formulation of a standard model to evaluate the null hypothesis (H0) that says: "There is no significant relationship between imported offshoring of services and Egyptian Economy." This is done by conducting a standard study to analyze the facts and observed data available in the time series data for the period (1979 to 2020) for each of the dependent variables, symbolized by the symbol (Y), and the independent variables, symbolized by (Xs)

### **a- Normality test**

First, we will use a normality test to evaluate whether a sample was selected from a normally distributed population. It is typically used to determine whether the data used in the study has a normal distribution. Many statistical techniques, notably parametric tests, such as correlation, regression, t-tests, and VAR, are predicated on the normal distribution of data. The tests are a form of model selection.

### **b- The model is used, and data is normal p-value > 0.05.**

Test for multivariate normality

Doornik-Hansen  $\chi^2(18) = 18.036$  Prob >  $\chi^2 = 0.4533$

## 1- Serial correlation

varlmar	
Lagrange-multiplier test	
lag chi2 df	
	Prob > chi2
1 4.8139 4	0.30693
2 3.9775 4	0.40906
H0: no autocorrelation at	
	lag order

No serial correlation, p-value > 0.05, and accept H0.

Jarque-Bera test				
Equation				
	chi2	df	Prob > chi2	
log10_X1	2.065	2	0.35603	
log10_X2	2.554	2	0.27886	
ALL	4.620	4	0.32860	
Skewness test				
Equation				
	Skewness	chi2	df	Prob > chi2
log10_X1	.53357	1.993	1	0.15804
log10_X2	.59812	2.504	1	0.11354
ALL	4.497	2	0.10555	
Kurtosis test				
Equation				
	Kurtosis	chi2	df	Prob > chi2
log10_X1	3.2036	0.073	1	0.78763
log10_X2	3.1688	0.050	1	0.82330
ALL	0.122	2	0.94062	

From the normality test conducted above it is notable that data used in the study has a normal distribution and has a sort of consistency as the description of the test derives from The Doornik-Hansen test for multivariate normality (DOORNIK, J.A., and HANSEN, H. (2008)) always Prob > chi2.

### 1.1- Var Model

The vector autoregression (VAR) model is a statistical model that captures the relationship between several quantities as they change over time. A VAR is a stochastic process model. By allowing for multivariate time series, VAR models generalize the single-variable (univariate) autoregressive model.

VAR MODEL, model is significant. As shown below: -

Vector autoregression					
Sample: 1979 thru 2020		Number of	obs =	42	
Log-likelihood = 144.013		AIC	=	-5.714906	
FPE = .0000117		HQIC	=	-5.350949	
Det(Sigma_ml) = 3.60e-06		SBIC	=	-4.721952	
Equation Parms	RMSE	R-sq	chi2	P>chi2	
log10_X1 12	.102376	0.9866	3081.683	0.0000	
log10_X2 12	.096314	0.9877	3382.91	0.0000	
Coefficient	Std. err.	Z	P>z	[95% conf.	interval]
log10_X1					
log10_X1					
L1. .4735143	.5931061	0.80	0.425	.6889522	1.635981
L2. -1.154669	.5569895	-2.07	0.038	2.246349	-.0629901
log10_X2					
L1. .0933647	.639296	0.15	0.884	1.159633	1.346362

## The Impact of offshoring services on the Egyptian Economy

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L2. 1.075771	.5905578	1.82	0.069	.0817014	2.233243
log10_Y1 3.090373	1.9671	1.57	0.116	.7650723	6.945819
log10_Y2 -3.63983	.7891494	-4.61	0.000	5.186534	-2.093126
Y3 .040694	.0103264	3.94	0.000	.0204548	.0609333
Y4 .001094	.002832	0.39	0.699	.0044567	.0066446
log10_Y5 .2435534	.377157	0.65	0.518	.4956607	.9827674
log10_Y6 .214244	.1126927	1.90	0.057	.0066295	.4351176
log10_Y7 .6575839	1.883678	0.35	0.727	3.034358	4.349526
_cons -18.75311	3.859921	-4.86	0.000	26.31842	-11.1878
log10_X2					
log10_X1					
L1. .3250245	.5579877	0.58	0.560	.7686112	1.41866
L2. -.8934704	.5240096	-1.71	0.088	-1.92051	.1335696
log10_X2					
L1. .2247287	.6014427	0.37	0.709	.9540773	1.403535
L2. .8079672	.5555903	1.45	0.146	.2809697	1.896904
log10_Y1 3.101333	1.850626	1.68	0.094	.5258284	6.728494
log10_Y2 -3.366793	.7424231	-4.53	0.000	4.821916	-1.911671
Y3 .0348769	.0097149	3.59	0.000	.0158361	.0539178
Y4 .0011503	.0026643	0.43	0.666	.0040717	.0063723
log10_Y5 -.0028664	.3548251	-0.01	0.994	.6983109	.6925781
log10_Y6 .263983	.10602	2.49	0.013	.0561876	.4717784
log10_Y7 .4924522	1.772144	0.28	0.781	2.980886	3.965791
_cons -17.06939	3.631371	-4.70	0.000	24.18674	-9.952029

P-value less than 0.05, the variable is significant. - If the p-value is greater than 0.05 it is not significant.

### 1.2- Multi regression Model

Multiple regression is a statistical technique for examining the relationship between a single dependent variable and a number of independent factors. The goal of multiple regression analysis is to use known independent variables to predict the value of a single dependent variable. In this test, we will use each of X1

and X2 to find their relationship with Y1, Y2, Y3, Y4, Y5, Y6, and Y7 to confirm the VAR Model results.

. mvreg log10_X1 log10_X2 = log10_Y1 log10_Y2	Y3 Y4 log10_Y5 log10_Y6 log10_Y7
Equation Obs Parms RMSE	"R-sq" F P>F
log10_X1 44 8 .1168928	0.9825 288.1715 0.0000
log10_X2 44 8 .1089245	0.9843 322.4384 0.0000
Coefficient Std. err. t	P>t [95% conf. interval]
<b>log10_X1</b>	
log10_Y1 4.6328 2.371112 1.95	0.059 -.1760374 9.441637
log10_Y2 -4.775594 .9008912 -5.30	0.000 -6.602686 -2.948502
Y3 .0333808 .0120478 2.77	0.009 .0089466 .057815
Y4 -.0021461 .0035428 -0.61	0.548 -.0093311 .005039
log10_Y5 -.2947513 .4064046 -0.73	0.473 -1.118978 .5294755
log10_Y6 .4283217 .1223007 3.50	0.001 .1802844 .676359
log10_Y7 .9781742 2.448362 0.40	0.692 -3.987334 5.943683
_cons -24.09511 4.458073 -5.40	0.000 -33.1365 -15.05371
<b>log10_X2</b>	
log10_Y1 4.598164 2.209479 2.08	0.045 .1171337 9.079195
log10_Y2 -4.484984 .8394796 -5.34	0.000 -6.187527 -2.78244
Y3 .0295164 .0112266 2.63	0.013 .0067478 .0522849
Y4 -.0018595 .0033013 -0.56	0.577 -.0085548 .0048357
log10_Y5 -.4888682 .378701 -1.29	0.205 -1.256909 .2791731
log10_Y6 .4530051 .1139637 3.97	0.000 .2218759 .6841343
log10_Y7 .786829 2.281463 0.34	0.732 -3.840193 5.413851
_cons -22.26378 4.154177 -5.36	0.000 -30.68884 -13.83872

## **RESULTS**

- The study of the statistical model used in this research proves that there is a strong correlation between the offshoring of services represented in (X1 Commercial

service imports current US\$ & X2 Service imports, BoP, current US\$) from one side and each of (Y1 GDP Current USD, Y2 GDP Per Capita, Y3 GDP per Capita Growth Annual, Y4 inflation GDP Deflator Annual, Y5 Unemployment total ILO estimate, Y6 Oil rents % of GDP, and Y7 Gross value added at basic prices (GVA) (current US\$) this prove the validate of the first hypothesis (H1) of this study, there is a correlation between imported offshoring of services and Egyptian Economy. For the period 1979 to 2020.

- The study of the statistical model used in this research proves that there is a strong correlation between some of the economic variables chosen in this research and the two variables related to offshoring as follows: -

Relationship between dependent and independent variables	Y1 GDP Current USD	Y2 GDP Per Capita	Y3 GDP per Capita Growth Annual	Y4 inflation GDP Deflator Annual	Y5 Unemployment total ILO estimate	Y6 Oil rents % of GDP	Y7 Gross value added at basic prices (GVA) (current US\$)
X1 Commerical Service Imports	Not Significant	Significant	Significant	Not Significant	Not Significant	Significant	Not
X2 Service imports	Not Significant	Significant	Significant	Not Significant	Not Significant	Significant	Not

This proves the validity of the second hypothesis (H2) of this study, there is a correlation between some economic variables and the offshoring of services Variables in Egypt.

- Through this study we found that the imported services from offshoring will affect economic growth as well as such services will play a role in Economic Development. The results of this paper show also no significant impact of imported services of offshoring on employment, inflation, or the gross value added, as a result, we can build a model to measure the effect of offshoring of services on the Economy of Egypt. This proves the validation of the third hypothesis (H3) of this study, there is a correlation between the imported service from offshore and the Egyptian Economy together, to build a model to assess such a relationship.
- The study explores the mutual influence between the economy and the service created by offshoring, outsourcing, and other types of services generated around the globe as it becomes a reality that imposes itself when predicting any economic effect, the study also shows that offshoring has an impact on developing countries not only on developed countries, however, the size and scope of the impact is different. Also, the study gives a guide to the most important sorts of economic variables that can be used to measure or assess the offshoring of services' impact on the economy of developing countries.
- The most imported services of Offshoring in Egypt, Paul Tjia (2020):- IT services, Business Process Services, Knowledge Services, and Engineering Research Development, as the Egyptian economy started to expand and improve its structure, which will reflect the needed technical services to achieve the

goals of Egyptian society into the future which reflect in using the offshoring of services for sectors like communication, petroleum, and construction.

### **DISCUSSION & CONCLUSIONS**

The study shows the connection between the offshoring of services and the Economy through the use of data covering the period of (1979 to 2020) The variables used in this study were selected beside of literature review conducted by the researchers covering the period from (2003 to 2023) rarely we found literature connecting Egyptian Economy to imported services of offshoring or outsourcing, the statistical analysis shows that X1 Commercial services imports and X2 service import – BoP Current, have the same impact on the seven economic variables chosen in the study, as a result, we decided to use one of them to represent the imported offshoring of services, we put on that fact while we conduct the vector autoregression (VAR) model, we used only X2 service import – BoP Current, to represent the imported service offshoring. On the other hand, not all of the seven economic variables chosen in the study are affected by X2, which means that the imported offshoring of services will affect only economic growth represented by Y2 GDP Per Capita and Y3 GDP per Capita Growth annually, also the imported offshoring of services will affect the part of economic development represented by Y6 oil rents (% of GDP) An increase in the value of oil rents suggests that a country's oil natural resource rents are increasing. Mahmood, and Saqib, N. (2022).

Of course, such outcomes are logical as Egypt is a developing country facing many economic and technical challenges however in our case Egypt consumes or imports the needed services for developing and expanding its economy, On the other side Egypt, will soon become a hub for offshoring, based on our study the imported offshoring of services will impact the economic growth and part of economic development, no significant impact offshoring of services on inflation or employment as the imported offshoring services is small in volume. Also, the imported services of offshoring have no significant impact on Y7 Gross value added (GVA) at basic prices, GVA is important because it is used in the calculation of GDP, a key indicator of the state of a nation's total economy. It can also be used to see how much value is added (or loss) from a particular region, state, or province. This means that even economic growth will not be affected dramatically by import offshoring of services, this study also gives the first trial to create a method to measure or assess the impact of offshoring of services on the Economy for developing countries as consumers of such services.

Also, the study tries to reduce misunderstanding and complications of meanings of offshoring outsourcing, and other related expression as the majority of literature used those meaning without putting limits or borders between them.

Even if the study could assess to a limit the impact, it cannot display the comprehensive model for using all developing

countries to assess the impact of imported services on their economy as each country has its own economic conditions, also The study cannot create a model to assess the impact of exported services of offshoring for Egypt or developing countries.

I conclude that this study as one of the first studies gives a guideline to other researchers to develop their studies regarding the impact of offshoring of services on the Economy of developing countries Egypt is an Example.

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