Czech University of Life Sciences Prague

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Master's Thesis

The Impact of Economic Policies on Foreign Capital Flow: Case Study of Egypt 2012 - 2022

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

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Thesis title

The Impact of Economic Policies on Foreign Capital Flow: Case Study of Egypt 2012 – 2022

Objectives of thesis

The thesis takes Egypt as a case study and investigates the impact of the newly introduced economic policies there on the inflow and outflow of foreign capital, and on the recent devaluation of the currency. The main inquiries of the thesis include identifying the exact reason/s behind the devaluation of the currency, and the mechanism of how economic policy affects foreign investment.

Methodology

Econometric modeling and descriptive methods will be used in my research. The descriptive methods to analyze the collected data from scholarly articles investigating the reason behind currency devaluation in Egypt. Econometric modeling to evaluate the impact of currency devaluation on foreign capital flow.

The proposed extent of the thesis

60 – 80 Pages

Keywords

Economic Policy, Egypt, Exchange Rate, Currency Devaluation, Foreign Direct Investment.

Recommended information sources

Bénassy-Quéré, A., Jacquet, P. and Pisani-Ferry, J., 2010. Economic policy: Theory and practice. Oxford University Press, USA. ISBN-10: 0195322738

Dornbusch, R., 2019. The Theory of Flexible Exchange Rate Regimes and Macroeconomic Policy. Routledge. ISBN-10: 9780429051814

Dullien, S., Goodwin, N., Harris, J.M., Nelson, J.A., Roach, B. and Torras, M., 2017. Macroeconomics in context: a European perspective. Routledge. ISBN-10: 1138185175

Simpson, T.D., 2014. Financial markets, banking, and monetary policy. John Wiley & Sons. ISBN-10: 9781118872239

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The Diploma Thesis Supervisor

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Declaration

I declare that I have worked on my master's thesis titled "The Impact of Economic Policies on Foreign Capital Flow: Case Study of Egypt 2012 - 2022 " by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master's thesis, I declare that the thesis does not break any copyrights.

In Prague on 31 / 03 / 2023

The Impact of Economic Policies on Foreign Capital Flow: Case Study of Egypt 2012 - 2022

Abstract

This thesis starts by defining the meaning of the concept *economic* in order to build a better understanding of the objectives of economic policies and to identify the two different ways, *positive* and *normative economics*, which are used to evaluate economic policies. The thesis also investigates the importance of implementing effective monetary and fiscal policies to achieve a sustainable economic development, stability of prices, and a low unemployment rate. Effective economic policies, alongside having an open business environment, attract Foreign Direct Investment (FDI) which significantly contribute to the development of fragile or developing states. Subsequently, the thesis studies the concept of foreign capital flow and its different types, while keeping the focus on the importance of (FDI) in contributing to the economic development of a country through the transfer of knowledge technologies and expertise. Attracting (FDI) requires having a competitive business environment, and this thesis focuses on how a low currency exchange rate can restore the competitiveness of the targeted market. To analyze the relation between the exchange rate and (FDI) inflows, this thesis takes the case study of Egypt in the period 2012-2022 – from 2012 after the end of the Egyptian uprising till 2022 – to study the possible reasons behind Egypt's recent currency devaluation in 2022, and to formulate an econometric model which analyzes the correlation between the instruments of monetary and fiscal policies (exchange rate, interest rate, and d government expenditure) with the inflow of (FDI).

Vliv hospodářské politiky na tok zahraničního kapitálu: případová studie Egypta 2012–2022

Abstrakt

Tato práce začíná definováním významu pojmu ekonomie, aby bylo možné lépe porozumět cílům hospodářské politiky a identifikovat dva různé způsoby, pozitivní a normativní ekonomii, které se používají k hodnocení hospodářské politiky. Práce také zkoumá význam provádění efektivní monetární a fiskální politiky pro dosažení udržitelného ekonomického rozvoje, pečovat o cenovou stabilitu a nízké míry nezaměstnanosti. Efektivní hospodářská politika spolu s otevřeným podnikatelským prostředím přitahuje přímé zahraniční investice, které významně přispívají k rozvoji nestabilních nebo rozvojových států. Následně se práce zabývá konceptem toku zahraničního kapitálu a jeho různými typy, přičemž se zaměřuje na význam při přispívání k ekonomickému rozvoji země prostřednictvím transferu znalostních technologií a odborných znalostí. Přitahování vyžaduje mít konkurenční podnikatelské prostředí a tato práce se zaměřuje na to, jak může nízký směnný kurz obnovit konkurenceschopnost cílového trhu. K analýze vztahu mezi směnným kurzem a přílivem tato práce využívá případovou studii Egypta v období 2012-2022 – od roku 2012 po skončení egyptského povstání do roku 2022 – ke zkoumání možných příčin nedávné egyptské měny. devalvace v roce 2022 a formulovat ekonometrický model, který analyzuje korelaci mezi nástroji měnové a fiskální politiky (směnný kurz, úroková míra a vládní výdaje) s přílivem zahraničního kapitálu.

Klíčová slova: Přímé zahraniční investice, ekonomický rozvoj, politická nestabilita, monetární politika, fiskální politika, devalvace měny, Egypt, ekonometrické modelování.

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List of Abbreviations:

GDP:	Gross domestic product
FDI:	Foreign Direct Investment
IMF:	International Monetary Fund
OECD:	Organisation for Economic Co-operation and Development
OLSM:	Ordinary Least Square Method
CEB:	Central Bank of Egypt
EGP:	Egyptian Pound
MPC:	Monetary Policy Committee
EFF:	Extended Fund facility
PWC:	Price Water House
VAT:	Value Added Tax
EU:	European Union
GAFTA:	Great Arab Free Trade Area
AfCFTA:	African Continental Free Trade Area

1 Introduction.

Across the developing world, many countries have intended to accumulate foreign reserves by attracting Foreign Direct Investment into local economies. This was guided by recurring shortages of foreign currencies which arose out of the developing countries' economic dependence on exporting raw natural resources. This was especially the case in the countries of the Middle East and North Africa (MENA) which had – not only dependent on export of natural resources – but economies which can be characterized as illiberal. State-controlled economies and dependence on low value exports which were contrasted by high value imports have created trade imbalances in these countries and pushed their government into debt. Additionally, the political and civil unrest which many of these countries faced in the 2010s put pressure on the local government to adjust their economies to adapt for new circumstances.

Furthermore, to adjust their economies and fix their trade imbalance, many countries in the region resorted to liberalize their economies in order to attract more foreign investment especially into the industrial sector. Put differently, they intended to industrialize their countries by attracting FDI. To achieve this, many governments took steps to increase the liberal characteristics of their economies including floating their currencies, issuing tax reforms, and implementing policies to incentivize investment into the country.

In this thesis, I investigate the relation between currency devaluation and its effects on attracting FDIs. To address this, I take Egypt as a case study as Egypt has gone through political unrest, changed governments, and as the new administration has gone through steps to liberalize the Egyptian economy including devaluating their currency. Moreover, I start by constructing a literature review to form a background before addressing the case study of Egypt. In the literature review, I, firstly, investigate the role of economic and fiscal policies on providing economic stability, growth, and development, all of which are factors which encourage – or lack thereof discourage – FDI. Secondly, I investigate the influence of currency devaluation and monetary policy on attracting FDI which, in the literature, have researcher opposing and others for the role of currency devaluation on increasing FDI into local economies. After collecting data on the Egyptian case study, I, thirdly, conduct econometric modelling to investigate whether there is a correlation between economic variables with the inflow of foreign direct investment to Egypt with the main focus being on the currency exchange rate.

2 Objective and Methodology.

2.1 Objectives.

The objective of this work is to study the importance of foreign capital flow in developing countries and its contribution to the economic development of the targeted market due to the transfer of knowledge, technologies, and job creation. The study investigates the government's influence on attracting foreign capital through the use of monetary and fiscal instruments to maintain economic stability and encourage investments. The main focus of this work will be on the impact of currency exchange rate onto the inflow and outflow of foreign capital.

The thesis takes Egypt as a case study, and it investigates the impact of the recent devaluations of the Egyptian pound. This includes identifying the possible reason/s behind the devaluation of the currency, and the mechanism of how economic policy affects foreign investment.

2.2 Methodology.

To achieve the objective of this work, the practical part takes Egypt as a case study for the period 2012-2022 and performs a descriptive and Econometric analysis. The descriptive analysis will be aimed at understanding the possible reasons behind the currency devaluation in Egypt. The Econometric modelling will be used to investigate the relationship between foreign capital flow with the fiscal and monetary policy instruments (e.g., exchange rate, deposit interest rate, and government expenditure). The period 2012-2022 is justified of it being from the end of the Egyptian uprising in 2012 till 2022 to include the recent two times Egyptian pound devaluation in my analysis.

3 Literature Review.

3.1 Economic policy.

The term economic is a coalition of two meanings, argues Polanyi. These are the substantive and the formal aspects of economic. Substantive economic relates to the relationship between people and the land, environment, and the nature they inhabit, which encompasses the material supply the land can offer for its people and the extent and sufficiency of this supply to satisfy the needs of the inhabitants. The formal meaning of economic is what usually comes to mind when using words such economical. More explicitly, this meaning related to the means-end relationship and the logic behind attaining, securing, and cultivating these means. The insufficiency of means entails the need for a logic to secure them and this logic is what the formal meaning of economic entails.[1]

Economic policies refer to the set of actions, efforts, and methods used in an economic system which intend to allocate the available but scarce resources efficiently. These policies aim to increase the national level of output to satisfy our unlimited needs and wants. These economic policies are typically executed and supervised by the national government to influence the economy's movement, and to keep it under control. This set of actions includes, among other things, choices about the government's spending, wealth redistribution, tax and interest rates, as well as the exchange rate in a country. All of these methods and actions have a significant positive or negative impact on businesses in the relevant country, an impact which depends on the type of industry in question or the size of the business.[2]

Researchers identified two methods to evaluate the performance of the chosen economic policies. These two are called the *positive* and *normative economics* methods. The positive economics method tries to explain and describe how the economy and economic policies work together without attempting to indicate which outcomes is preferable. By doing so, positive economics provides us with the possibility to test the hypotheses to either accept or reject them. For instance, if researchers argue that an increase in money supply

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[1] Karl Polanyi, "The Economy as Instituted Process," in *The Sociology of Economic Life*, 3rd ed. (SAN FRANCISCO: Routledge, 2018), 29, https://www.taylorfrancis.com/chapters/edit/10.4324/9780429494338-2/economy-instituted-process-karl-polanyi.
[2] Ljiljana Stošić-Mihajlović, "Conditionality Economic Policy and Economic System," *Journal of Process Management and New Technologies* 3, no. 1 (2015): 76–77.

will lead to a rise in prices, this can be tested by looking at statistics concerning both the amount of money that is available in the targeted market and the cost of various goods and services. The testability of positive economics is what makes it stand out from other hypotheses. In the normative economics method, value judgment is used to assess the performance of the economy as a whole including the policies that govern the economy. For instance, giving a value judgment on the inflation rate could be done by simply stating that "the annual inflation rate is too high" which cannot be tested, verified, proved, or disproved. Put differently, normative economics focuses on the social norms and the expectation arising from them without necessarily having empirical evidence. Because of this lack of empirical evidence many open points for discussion have arisen among economists when it comes to normative economic assumptions.[3]

3.1.1   Objective of Economic Policy.

One of the main tasks of each government in the world is to set up some economic targets in order to improve or maintain the health of the economy, and to make it stay attractive for businesses. These targets are known as macroeconomic objectives as their influence is over the whole country and on all the businesses within it. Economists identified 4 main objectives for macroeconomic policies:[4]

1. Economic growth: This objective aims at maintaining economic growth, which is measured by looking at countries' GDP (Gross Domestic Product), by ensuring that there is a steady increase in the productivity of a country and that resources are allocated more efficiently.

2. Unemployment rate: This indicates the proportion of people in the labour force but are currently unable or unwilling to work. The government's objective should aim at keeping the unemployment rate within an acceptable range and at ensuring that everyone who wants to work has got a chance to do so. Researchers argued that a healthy range for unemployment is between 3.5% and 4.5%, however, it can vary from one country to another.

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[3] John B. Davis, "Normative and Positive Economics," in *Encyclopedia of Political Economy*, 1st ed. (Taylor & Francis (Routledge), 1998), 804–7, https://epublications.marquette.edu/econ_fac/318.

[4] J. J. Polak, "Economic Policy Objectives and Policymaking in the Major Industrial Countries," in *Economic Policy Coordination* (International Monetary Fund, 1988), 5–13, https://www.elibrary.imf.org/display/book/9781557750259/ch01.xml.

3. Price stability: Governments' objective should be preventing both the rise in the general level of prices, known as inflation, alongside the reduction in the general price level, known as deflation. This objective aims at ensuring market stability.

4. Balance of payment: The objective is to ensure that the balance of payment, which records all economic transactions, such as the imports and exports of a country, is in equilibrium. In other words, the money flow in and out of the country should be in equilibrium. Even when economists argue that it is bad to have a deficit in the current account balance, most of them also argued that having a surplus balance can also be bad as it means that the country is a net creditor for other countries and by doing so such a country would be helping other countries increase their productivity, while slowly the creditor country runs into deficit. The best case is, therefore, to have a zero current account balance, i.e., equilibrium.

3.1.2 Fiscal Policy.

Fiscal policy is defined as the methods and tools that can be used by governments to intervene in the economic activities and influence the national economy to maintain its overall stability. Fiscal policy reflects a government's decision on its source and level of income, which is mostly derived from taxation, and how the government will redistribute the tax revenue across different sectors, in the most suitable way, to have an effective influence over the national economy. The Great Depression, which demonstrated the inadequacy of the prior "laissez-faire" approach at regulating the economy, gave rise to this idea and it consequently encouraged the development of government revenue expenditures to affect macroeconomic issues. The "Keynesian Economics Theory" has its foundations in the relationship between changes in state spending, and tax rates with their impact on financial activit, and aggregate demand.[5]

Achieving the main objectives of any economic system, such as economic development and stability, depends on the financial policy of the country, the appropriate application of its multiple instruments, and on the methods used in the fiscal policy of the country, e.g., taxation and government expenditure. Having a just tax system – a system which includes income tax, corporate taxes, property tax, tariffs on imports of some goods

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[5] Sarwat Jahan, Ahmed Saber Mahmud, and Chris Papageorgiou, "What Is Keynesian Economics?," *International Monetary Fund* 51, no. 3 (August 25, 2014): 53–54, https://doi.org/10.5089/9781475566987.022.A015.

and services – alongside having government control over its expenditure and ensuring an ideal redistribution of tax revenues (raising expenditure on one economic activity to boost it, while reducing expenditure on another to discourage it) all have a strong effect on protecting national industries, achieving social justice, and encouraging or discouraging demand on goods and services, which all reflect in the economic development of the country.[6]

The level of economic development of a country measured by gross domestic product (GDP) can be influenced by the government when it increases government expenditure, reduces tax rates, or even by applying both at the same time. This method is known as expansionary fiscal policy which is used to stimulate economic activity. The other method is contractionary fiscal policy which is used to slow down economic activity, in case the economy is overheating, which is done by cutting government expenditure, increasing tax rates, or by applying both at the same time.[7]

Expansionary Fiscal Policy:

When economic activity starts to slow down and the national economy enters a recessionary period, aggregate demand will start to decline and will have a negative effect on the public and on corporations as the decline in the aggregate demand often leads to a negative effect on job offers, wages, business revenue, and investments. Since maintaining economic development is one of the main objectives of any government, a government may intervene in the market to support the public and to influence their demand for goods and services when an expansive fiscal policy is applied. This is done by either increasing government expenditure, reducing taxes, or by applying both at the same time. Increasing government spending can occur in the shape of payments to the public in an attempt to indirectly boost economic activity as individual with additional money tend to spend more on goods and services.

Governments can also directly boost economic activity by directly purchasing goods and service. Alternatively, when a government reduces taxes, it increases the demand for

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[6] Omar Al-kasasbeh, "Fiscal Policy and Its Relationship with Economic Growth: A Review Study," *Saudi Journal of Business and Management Studies (SJBMS)* volume–4 (December 30, 2018): 1319, https://doi.org/10.21276/sjbms.2018.3.12.5.

[7] Lida R. Weinstock, "Fiscal Policy: Economic Effects" (Congressional Research Service, 2021), 1, https://crsreports.congress.gov/product/details?prodcode=R45723.

goods and services in the national market. For instance, a reduction in the income tax raises the availability of disposable income for individuals to spend on goods and services. Consequently, the traditional economic approach argues that expansionary fiscal policy is the most appropriate way to spark economic activities.[8] The policy's influence, however, might be limited due to its negative effects on:

1. Interest rate: when the government increases spending or reduces taxes, it increases the demand for money to finance their policy, driving interest rates up and discouraging investment and spending.

2. Exchange rate and trade balance: when the interest rate increases, the demand for the national currency increases on the side of foreign capital due to the high rate of return. This could not only bring interest rates back to its original level but could also appreciate the national currency making domestic goods and services less attractive for export which could increase the trade deficit of the targeted market.

3. Inflation: since sparking consumers demand for goods and services is the main goal, this could increase the prices of goods and services (also known as inflation), especially when the targeted market is operating at full capacity but is unable to meet market demand.

Due to the negative consequences associated with expansionary fiscal policy, researchers suggested that governments should not continuously apply fiscal stimulus as it will bring more harm in the long run. These negative effects can be neutralized by either applying monetary policy simultaneously with fiscal policy or by slowing down the overheated economy withdrawing fiscal stimuli and applying contractionary fiscal policy.

Contractionary Fiscal Policy

Broadening financial circumstances often strengthen when the economic system exits a recessive period and enters an upswing or a period of recovery, which is characterized by declining unemployment, rising salaries, and increased commercial expenditure. Authorities may decide to start removing fiscal stimuli, when better capital circumstances are present, by reducing deficit, or by implementing contractive fiscal regulations and operating a fiscal space. Business output is anticipated to momentarily stall under a fiscal

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[8] Ibid., 1–4.

policy of compression – cut in state expenditure, a raise in income collected through taxes, or a mix of both. For instance, when the Federal Reserve increases taxes on personal incomes, people have fewer resources to expend and are thus more likely to purchase less items and amenities. Having less to spend causes the overall consumption of services and goods to decline momentarily which slows industrial prosperity.[9]

Therefore, irrespective of the combination of fiscal legislative proposals it should be anticipated that when the state makes contractionary fiscal legislations, aggregate demand would decline in consequence. The risks associated with expansive fiscal policies conversely apply to contractive fiscal policies as well. Contractive fiscal policy is expected to cut interest rates, which would promote more investment and cause the currency to weaken. It can be argued that this will simultaneously lower inflation and increase exports while cutting imports. The said factors have the tendency to expand national economy further, partially compensating for the loss in state economy which is brought about by the expansionary fiscal legislations.[10]

3.1.3 Monetary Policy.

The idea of monetary policy was born when banks took over the responsibility of printing banknotes by deriving their value from the gold kept at the bank. The initial aim for these banks was printing money and preserving the value of the local currency and its peg to gold. Later, central banks were established to fulfil the position of "lender of last resort." The interest rates that central banks started charging their borrowers and other financial entities that required additional liquidity were set up on their own. Many nations began to nationalize their central banks as a result of the central banks' expanded responsibility. Furthermore, economists from the mercantilists and the physiocrats points of view debated the effects of interest rate and came to an understanding that the levels at which interest rates are set influences the real economy.

Since economists already argued that national economies experience different business cycles, and that there is a relationship between interest rate and business cycle, economists suggested that the national central bank should not be seen as a governmental

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[9] Tony Makin, "When Contractionary Fiscal Policy Is Expansionary," *Agenda: A Journal of Policy Analysis and Reform* 5, no. 4 (1998): 419–26.
[10] Ibid.

institution but rather as a politically independent party, which should prevent politicians from using the tools of monetary policy to manipulate the national economy in order to achieve their political goals. Therefore, economists argued that having an independent national central bank is the best way to make sure that the most suitable monetary policy is applied. They defined monetary policy as a method to control the supply of local currency to achieve economic objectives, such as limiting inflation and the unemployment rate.[11]

Objectives of Monetary Policy:

Economists have debated what kind of role and objectives the monetary policy of a country should take. They have mostly agreed that there are three primary objectives the monetary policy of a country should pursue. These are, firstly, ensuring the stability of the currency from fluctuation, inflation, and deflation to protect the people's purchasing power and the value of money over time. Secondly, to work on ensuring a stable and a low level of unemployment by creating an environment which facilitates the creation of enough jobs in the job market for the workers who are willing to work. Thirdly, to introduce policies which promote and support the prosperity and the welfare of the local economy by creating a stable environment on the macroeconomic level which is usually the role of the central bank.[12]

Holtrop, however, argues that seeking to maintain a full employment may introduce challenges which complicate the objectives of monetary policy. He argues that a challenge may come to fruition when the monetary policy in question must choose between prioritizing the stabilization of the local currency, on one hand, and the maintenance of full employment, on the other. He argues that the stabilization of the currency entails both internal and external factors which affect the exchange rate and the government would thus have to choose which factor to prioritize. Unemployment levels, moreover, are also affected by internal and external factors, the latter of which may not be in the control of the government. To prioritize the objective of full employment, for instance, may prove conflicting with the other

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[11] Thierry Warin, "Monetary Policy: From Theory to Practices," *MIDDLEBURY COLLEGE, VERMONT*, 2005, 2–3.
[12] "What Is Monetary Policy?" (Reserve Bank of Australia, 2023), 2, Australia, https://www.rba.gov.au/education/resources/explainers/what-is-monetary-policy.html.

objectives of monetary policy and for that Holtrop recommends that full employment should be targeted through general economic policies instead of monetary policy.[13]

Tools of Monetary Policy:

The objectives of monetary policy are pursued through a set of tools which the central bank is in control of. These tools are, firstly, the selling and buying of public bonds which aims at stabilizing the prices and in the level of inflation in the local market. The central bank monitors the amount of money in circulation and with public bonds can increase or decrease the said amount. The sale and purchase of bonds affects the amount of money entering or leaving circulation in the local market where the sale of bonds decreases the amount of money in circulation as money is siphoned out of the system as buyers pay the central bank an amount of money to buy the bonds which are put on sale, hence less money circulates in the market, while the opposite stands true when the central bank buys bonds, i.e., money enters circulation. The second tool that is in the control of the central bank is its control of the interest rates over lending and borrowing. By raising the interest rates, the central bank can make it more expensive to borrow, i.e., decrease demand, while also incentivize money deposition in banks, i.e., increase the supply of money.[14]

When the target of monetary policy is not inflation but the stabilization of the exchange rate, the central bank has another tool which targets the exchange rate against foreign currencies. When there is a substantial level of foreign investment inflow into the country, the demand over the local currency increases which appreciates the price for the local currency. As the price of the local currency is determined by the level of its demand and supply, the central bank can depreciate the price of the local currency by buying a foreign currency and *vice versa*.

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[13] Marius W. Holtrop, *Monetary Policy in an Open Economy : Its Objectives, Instruments, Limitations and Dilemmas*, vol. 43, Essays in International Finance (Princeton, NJ : Internat. Finance Section, Dep. of Economics, Princeton Univ., 1963), 12–13.

[14] Ibid., 43:9–10.

3.1.4   Types of Economic Policy.

There is a significant economic component to almost every aspect of government. The various types of economic policies include to name a few (Baker, Bloom, & Davis, 2016; Plosila, 2004):

- The goal of the macroeconomic stabilization plan is to reduce fluctuations in the level of inflation and sustain a steady increase in capital flow.
- Trade policy includes trade agreements, taxes, and the global bodies in charge of regulating them.
- Measures to promote economic expansion.
- Economic development-related policies.
- As well as financial regulation, competition policy, economic strategy, and technology-based economic growth policy.
- Policies that deal with the transfer of income, property, and wealth.

Researchers argued that all the aforementioned policies have a great impact on attracting foreign capital to a country which in return plays an important role in achieving economic growth for developing countries. Furthermore, economists argued that foreign capital always had a significant role in the Asian strategy as it was believed that expanding the financial market provides a strong tool to boost the economy of a country. For some researchers this approach raised some concerns especially regarding the negative impacts of financial flows on the recipient nations. These impact a country's savings and were illustrated in a paper which was published by Papanek (1973). By using a sample from 85 developing countries, Papanek pointed out to how international assistance, private investment, and domestic savings increase the dependence of a nations on global investment and he found that international capital displaced domestic resources. Therefore, from the neoclassical perspective, foreign direct investment (FDI) was seen as the growth driver which was also shown in Attanasio et al. (2000) paper where he found a robust relationship between investment and economic growth using Granger's casualty statistical test (Meyer & Sanusi, 2019). Furthermore, economic development comes before having more liberal economic policies and therefore nations going through economic transitions frequently

report higher savings rates because of the improved trade balance or the increased domestic investment.[15]

When many argued that FDI increases industrial exports which is seen as a source of capital formation and economic growth, others like Rand and Tarp (2002) had a different perspective. They claimed that FDI inflows are volatile as they did not find a correlation between FDI and production outputs in their analysis which brought them to the conclusion that FDI is more erratic in comparison to foreign capital flow through international assistance. Consequently, they emphasized the importance of stabilizing FDI in order to minimize fluctuations in the market.[16] Similarly, others also argued that FDI investment might have positive or negative impacts on economic growth and that depends on whether FDI is improving or developing local industries or not. In case it does not, FDI will lead to a decrease in the welfare of the host nation even when it has a well-developed local credit market.

3.2   Foreign Capital Flow.

3.2.1   Concept of Foreign Capital Flow.

I have investigated in the previous chapter different arguments against and for capital flow as one of the main drivers for economic growth, however, what is capital flow? Researchers defined capital flow as the movement of financial assets from one country to another. *Financial assets* is a term used to refer to different methods of how capital flows in, such as bank deposits, loans, equity and debt securities, and investments. The main aspect which determines in which direction capital is moving (in or out of the country) is the economic and political stability, or instability, of a country. For instance, when a country is experiencing economic and/or political instability, there is often a movement of capital out of the country, while when we have a significant amount of new capital entering the market this indicates an expanding economy.

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[15] Ahmad Zubaidi Baharumshah and Marwan Abdul-Malik Thanoon, "Foreign Capital Flows and Economic Growth in East Asian Countries," *China Economic Review* 17, no. 1 (January 1, 2006): 73–74, https://doi.org/10.1016/j.chieco.2005.09.001.

[16] John Rand and Finn Tarp, "Business Cycles in Developing Countries: Are They Different?," *World Development* 30, no. 12 (December 1, 2002): 2083–84, https://doi.org/10.1016/S0305-750X(02)00124-9.

Due to the increase of international capital flow in many markets, researchers argued that capital flow into a country has a single advantage but many disadvantages. In the long-term it contributes to the development of a country, however, in the short-term it has negative effects on the appreciation of the exchange rate, asset and financial price cycles, and/or a sudden halt in capital flow to the country.[17] These issues can be avoided if the country choses appropriate macroeconomic policies, such as reducing capital inflow by using macroprudential control (which means monitoring the financial system and acting on the identified risks and vulnerabilities to prevent them from adding up to becoming a systemic risk), taxation, or direct capital restrictions. Furthermore, researchers argued that even when these preventive measures can help in the short run, they won't solve other issues associated with them such as retaliatory action from other nations.

Overall, no matter what reason might be behind capital outflow governments will always see it as undesirable, therefore, they pass legislations to limit the flow of capital out of the country which are known as *capital control.* These limitations might promote short-term development, but they often lead to more economic troubles rather than providing real solutions. Researchers argued that capital control are put in place when level of income is low and central bank is not completely independent institution and that the government are in control of the economic activities. in such case, imposing capital control will drive the inflation rate up and keep the interest rate low and because of that Grilli and Milesi-Ferretti argued that capital control won't have any significant impact on economic growth.[18]

3.2.2 Type of Foreign Capital Flow.

Wu et al. distinguish two types of foreign investment which are a direct form and an indirect form. In both categories of investment, the foreign investors expect a return on their investment, however, in the direct type, investors have the advantage of being able to participate in the management in the company or firm in which they are investing. In general, when an investor's share in a firm rises above 10%, the investor is considered a direct investor and gains the right to participate in management. Wu et al., however, state that the

[17] Eliana A. Cardoso and Rudiger Dornbusch, "Foreign Private Capital Flows," in *Handbook of Development Economics*, vol. 2 (Elsevier, 1989), 1421–24, https://doi.org/10.1016/S1573-4471(89)02013-9.

[18] Vittorio Grilli and Gian Maria Milesi-Ferretti, "Economic Effects and Structural Determinants of Capital Controls," *Staff Papers (International Monetary Fund)* 42, no. 3 (1995): 519, https://doi.org/10.2307/3867531.

threshold which differentiates between a direct and an indirect investor has been growing increasingly blurry. In direct investment, furthermore, the investor as part of the management is able to receive first-hand information on the operation of their investment. Put differently, the investor's participation in management necessarily makes the investor a part of the firm, i.e., an insider. This, consequently, reduces the risk of misinformation and help guarantee the investor's rights in the company, both of which are an advantage for investors investing in countries with weak public order, and rule of law. A direct investor, in such case, would be able to protect their investment by their private means without having to succumb to the disorganized rule of law in the relevant country.[19]

Indirect investment, on the other hand, which is interchangeably named 'portfolio investment', includes, for instance, buying stocks and bonds in secondary markets without the investor's ability to have any direct control in the management of their investment. This entails that the investor must depend on publicly available information to keep track of their investment, which makes the investor in this case and outsider to the company where they are investing. This type of investment is especially risky in environment where public order and governance are weak, continue Wu et al. In such an environment, the information on the inner workings of the company can be easily manipulated by insiders for their aims, and with the lack of political checks and balances in authoritarian systems, a dictator may come and dictate how the economy is run, not in favour of the public good but rather for the sake of benefiting members of their inner circle or accomplices. This may prove disadvantageous for the investor and may risk losing part or all of the indirect investment.[20]

3.2.3   Limitation on Foreign Capital Flow.

In order to examine whether applying some limitations on foreign capital might help the economy or not, contemporary macroeconomists often use the example of many industrialized countries which were at some point considered to be growing emerging economies and which have historically imposed limitations against international investors, while also favouring domestic investors as well as implementing different types of policies to support the development of local industries, such as the transfer of technologies,

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[19] Jun Wu, Shaomin Li, and David D. Selover, "Foreign Direct Investment vs. Foreign Portfolio Investment," *Management International Review* 52, no. 5 (October 1, 2012): 645–46, https://doi.org/10.1007/s11575-011-0121-0.
[20] Ibid., 646.

ownership constraints, and emphasizing partnership with local enterprises. In such countries, however, all of these constrains were loosened as domestic industries became well developed.[21]

Taking the United States of America as an example, between 1875 and 1914 the US was ranked as a top importer of foreign money. Consequently, many US citizens were worried that the US economy is now under the control of foreign nationals, however, Chang (2004) argued that today the US is seen as a liberal economy with strong support for foreign investors, while in the past, when the US was heavily dependent on foreign investment, it ensured that the US market stays very attractive for foreign investors while at the same time obstructing their control over the US economy. The US achieved that by imposing federal limitations on foreign ownership of mining, agricultural, and logging companies, while also disallowing foreign investment in coastal shipping and discriminating against foreign firms in the financial sector by demanding that the directors of financial institutions should be from the US as well as disallowing foreign investors from voting in federally licensed banks. Therefore, the US was the biggest beneficiary of foreign wealth despite the strict limitations against foreign investors during that period.[22]

Globalization contributed to the acceleration of the expansion of foreign direct investment flows as one of the most important components of globalization is opening new markets for foreign direct investment. Since then, many researchers and politician discussed the long-term greater negative impacts of the rapid change in the global economy as well as its impact on the environment. When it comes to foreign direct investment and governments' reactions towards the environment, researchers argued that there are three different forms of outcomes[23]:

1. Firstly, researchers wondered how regulations to reduce pollution domestically can have a significant impact on capital outflow, given that for business owners such regulations can hinder their ability to compete in international markets.

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[21] Kalim Siddiqui, "Flows of Foreign Capital into Developing Countries: A Critical Review," *Journal of International Business and Economics* 2, no. 1 (2014): 31–32.
[22] Ibid.
[23] Matthew A. Cole, Robert J.R. Elliott, and Liyun Zhang, "Foreign Direct Investment and the Environment," *Annual Review of Environment and Resources* 42, no. 1 (2017): 467–81, https://doi.org/10.1146/annurev-environ-102016-060916.

2. The second outcome can be identified by looking at how foreign direct investment can have a positive or negative impact on the local environment in the host country. Researchers argued that, in such a case, relocating significant numbers of firms to regions with fewer regulations will increase the amount of pollution in the local environment which leads to impacting the health of the local people negatively. Others argued that foreign direct investment outflow from technically advanced countries would bring innovation and better manufacturing methods that can help improve the efficiency of local firms. Put differently, the inflow of capital can have an overall positive impact only when local firms are influenced positively from the arrival of new foreign companies.

3. Thirdly, researchers argued that it is possible that corporations won't migrate to new market but will outsource the production of the more polluting parts to partners in other markets. Although, in such cases, pressure from international firms is exerted on their partners to enhance the firm's sustainability performance as part of their efforts to green their distribution network, such a move is, however, less likely to result in the adoption of cleaner technologies.

3.2.4 Effects of Foreign Direct Investment.

Researchers like Popovic and Savi argued that the importance of FDI is reflected in the development of crucial macroeconomic factors such as the level of national output, unemployment, and inflation rate. Their argument is based on the explanation made by Todaro and Smith (2006) who consider FDIs to be the most productive way to use foreign corporate assets to support economic expansion and reduce local investment-to-savings imbalance. Secondly, Todaro and Smith (2006) argued that FDIs make a significant contribution to reducing the trade deficit of nations receiving foreign capital. Consequently, they argued that foreign capital inflow successfully closes the disparity between government expenditure, forecasted public revenue, and generated taxes. Another crucial benefit that the receiving nation gains from FDIs is the transfer of modern technology, innovation, and managerial and entrepreneurial experiences.[24]

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[24] Goran Popović and Mirko Savić, "IMPACT OF FOREIGN DIRECT INVESTMENTS ON ECONOMIC GROWTH IN THE EUROPEAN UNION," *ECONOMICS - INNOVATIVE AND ECONOMICS RESEARCH JOURNAL* 2, no. 1 (June 30, 2014): 8–10, https://doi.org/10.7251/OIK1402004P.

This argument does not assume that only receiving nations gain benefits but also that foreign investors will have an advantage in many areas, such as the reduced shipment cost for raw material and finished goods, benefiting from lower wages, available infrastructure, lower custom tax through preferential tariff agreements on imported goods, reduced delivery time, and better access to information on customer choice which gives the foreign firm a better chance to adapt to the demands of the destination market.

It is challenging, however, to assess how FDI affects the financial development of the recipient nation as there are many different factors involved and as that the outcomes depend on the particularities of the economies of the various countries as well as on the particular industries and the types of investment. These effects can be viewed from two distinct viewpoints. Firstly, they boost local manufacturing processes and create the right circumstances for increasing the number of available jobs. Secondly, foreign direct investment contributes to the growth of the receiving state by promoting innovation, coaching the workforce, working with national finances, and allowing domestic companies to achieve a bigger footprint in the global economy. Furthermore, the consequences of FDI may vary based on which of the state's four productivity expansion stages the state has previously attained. A crucial element in the beginning of economic growth is the exploitation of natural resource. Even though there may be no apparent consequences on the finances of the hosting nation, however, by moving to the second stage of economic expansion the targeted country will have a noticeable rise in domestic investment in the supply of public goods, communications, and transportation. During this phase, the state shifts its emphasis from exploiting natural resources to labour-intensive manufacturing goods and the effects of this change rely heavily on the local infrastructure and macroeconomic policies. The third stage of the process promotes innovation creation, knowledge management, organizational advantages, and production and investment optimization. Collectively, these elements impact how well local enterprises can compete and establish themselves in emerging markets. Lastly, the fourth stage of economic development, which is the most advanced phase, is at the point when the effects of FDIs are more substantial due to the exploitation of the developed comparative advantage in the international market. Whether FDI favours (or not) the economic growth of the targeted

country depends on the import-substituting or export-development strategy that a nation adopts.[25]

3.3 Exchange Rates and Foreign Direct Investment.

3.3.1 Exchange Rate Effect on Foreign Direct Investment.

Many researchers see Foreign Direct Investment (FDI) as a method in which multinational companies gain control over their foreign affiliates. In 2005, over 50% of world total FDI of 916$ billion was received by organizations located in developing markets. One of the many factors (besides economic and political stability) that might impact foreign direct investment and corporate's decisions on which market they would migrate their business to is the level and the volatility of the currency exchange rates. Researchers argue that most businesses, when they are about to make any decision, they take into account the financial aspect of their decision where the magnitude and the fluctuation of exchange rates – also known as the "cost of currency expressed in native currency" – is essential. Therefore, exchange rates can affect the total volume of direct investments flowing from abroad and the way how these resources are distributed among different nations.[26]

When it comes to the level of exchange rate, researchers argued that when a currency depreciates, i.e., loses its value compared to the value of another currency, it might have two possible effects on foreign direct investment. The first one is from the *'relative wage'* point of view, where currency depreciation in the destination country will significantly reduce the manufacturing and human resource costs for the investing foreign company. Consequently, such markets will become more attractive and have 'locational advantage' for investment in physical production and this currency depreciation will increase the overall rate of return for the foreign organization investing in such markets. However, Goldberg argue that the *relative wage theory* depends on two assumptions, the first assumption argues that the movement in the exchange rate must be related to a change in the manufacturing costs across countries, and that it should not be followed by a significant increase in the cost of manufacturing and human resources in the destination country. The second assumption is

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[25] I. Susic, M. Stojanovic-Trivanovic, and M. Susic, "Foreign Direct Investments and Their Impact on the Economic Development of Bosnia and Herzegovina," *IOP Conference Series: Materials Science and Engineering* 200, no. 1 (May 2017): 3–4, https://doi.org/10.1088/1757-899X/200/1/012019.
[26] Linda S. Goldberg, "Exchange Rates and Foreign Direct Investment," *The Princeton Encyclopedia of the World Economy* 1, no. 1 (2009): 393.

concerned with the prediction of the exchange rate movement and how such prediction may lower the importance of the relative wage theory, since predicting exchange rate movement can cause higher operation costs which will be reflected in the risk-adjusted expected rate of return. Therefore, if exchange rate movements were not predicted and accounted for in the expected investment cost, they may as well have severe effects on foreign direct investment.[27]

The second effect on foreign direct investment is when a currency depreciates from the "relative wealth" point of view. The assumption contends that foreign investors will have a cheaper cost of capital in the target market if that market's currency depreciates, increasing their relative wealth over local investors and enabling them to buy more assets in the target market. Researchers like Klein and Rosengren (1994) concluded that currency depreciation will increase the FDI inflow to the targeted market and supported the "relative wealth" theory, asserting that it is more significant than the "relative wage" theory in their study of the flow of foreign direct investment to the United States between 1979 and 1991.[28]

Both of "relative wage" and "relative wealth" arguments are based on having a foreign firm invest and generate return on investment in the currency of the targeted market, however, the traditional economic point of view did not support the idea that currency exchange rate has an influence on foreign direct investment inflows arguing that "if exchange rates are a random walk and an asset's purchase price and return on an asset are in the same currency, the relative valuation of domestic versus foreign firms for an asset will remain unchanged.". Blonigen (1997), however, argues that his analysis on foreign firm investing in 'firm-specific assets' does not correspond to the explanation of traditional theory. Innovation, technological development, goodwill, management skill, etc. are all form of "firm specific assets". Blonigen hypothesizes that as long as the opportunities of domestic and foreign firms are different in generating a return on their investment from an asset they intend to buy, the exchange rate movements, must have an influence on the bidding process and thus on the relative valuations these companies provide. To explain further, we can imagine two prospective acquiring firms, one is domestic and the other is foreign, both are from the same industry but each one of them operating in their own respective local markets and both of which are interested in acquiring a local firm in the targeted market that has

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[27] Ibid., 393–94.
[28] Ibid., 395.

innovation, which is known a "firm specific asset", and which can increase manufacturing productivity by 10%. For the domestic firm making investment payments and generating profit in the local currency, exchange rate won't change their valuation for the purchase of the targeted asset. However, since the foreign acquiring firm makes its profits in a foreign currency as it sells in a foreign market, currency exchange rate, therefore, affects their valuation of the asset. Due to the depreciation of the local currency of the target market, the foreign acquiring company can raise its bid against the domestic acquiring firm without a reduction of its profits as it sells abroad.[29]

Alongside the above three arguments on the benefits of the level of the exchange rate which do not consider the risks that the foreign investors might face, there are two other arguments which focus on the influence of the exchange rate volatility on foreign direct investment in the targeted market. These two arguments are[30]:

1. *Production flexibility approach* argues that the main motive for manufacturers to invest in a foreign country is to gain more production flexibility, in other words, to be able to increase their production in one country even when market conditions in the other countries become less profitable. Furthermore, it argues that investment decisions in fixed assets towards domestic or foreign capacity is done by investors "ex-ante" (before the event) – in other words, the investment decision is done without knowing the final cost of production or customers' demand – and variable factors such as employment decisions and the location for production are done "ex-post", i.e., after realizing the exchange rate and the market demands. The argument states, therefore, that the volatility of the exchange rate should not affect the inflow of foreign direct investment into the targeted country.

2. *Risk aversion approach* argues that a volatile currency exchange rate increases the uncertainty of the targeted market and depresses the rate of return of foreign investors due to the period between when the foreign investor made their estimation to make business decisions and when, in the future, the profit is realized. That is why foreign

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[29] Bruce A. Blonigen, "Firm-Specific Assets and the Link between Exchange Rates and Foreign Direct Investment," *The American Economic Review* 87, no. 3 (1997): 448–49.

[30] Zerrin Kiliçarslan, "The Relationship between Exchange Rate Volatility and Foreign Direct Investment in Turkey: Toda and Yamamoto Causality Analysis," *International Journal of Economics and Financial Issues* 8, no. 4 (July 4, 2018): 61–62.

direct investment moves from markets with volatile exchange rates to more stable markets. Therefore, Campa (1993) as well as Goldberg and Kolstad (1995) conclude that risk neutral firms will delay their foreign market entry decision when the volatility of the exchange rate is very high.

Overall, both *production flexibility* approach and *risk aversion* approach could be valid, but one is more focused on the short-term effects, namely risk aversion, while production flexibility focuses on the long-term effects.

3.3.2 Currency Devaluation.

Cooper makes an argument on how he sees currency devaluation as a very unpleasant measure that governments sometimes may need to implement in their economic policies. Most of the time this action will trigger the anger of the public who will demand the resignation of the responsible officials which could lead to political instability in the country. Therefore, governments usually try to avoid the option of currency devaluation, however, the International Monetary Fund (IMF) supports the use of currency devaluation method but only as a last resort due to the risks associated with it and only when a country is experiencing a serious deficit or "fundamental disequilibrium" in their balance of payment.[31]

In the past, coins made of precious metals such as gold, silver or bronze were used to conclude financial transactions and these coins had a face value equal to the metal they were made of. Since precious metals are a rare commodity and when the demand for money increased, governments shifted to issuing banknotes (today's money) which are, in essence, documents proving that the holder is the legal owner of the amount of the money indicated on the banknote, an amount which is kept in a central bank. The value of these banknotes is derived from the wealth of the nation and is measured against the US dollar based on Bretton Woods Agreement. A devaluation of the national currency, therefore, means reducing the dollar price of the local currency – for one unit of dollar, an individual can purchase more units of the local currency than before. This method works only for countries with a fixed currency exchange regime where the central bank is in control of the price of the currency

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[31] Richard N. Cooper, "Currency Devaluation in Developing Countries," in *The International Monetary System*, 1st Edition, 86 (New York: Routledge, 2019), 185, https://www.taylorfrancis.com/chapters/edit/10.4324/9780429311956-7/currency-devaluation-developing-countries-richard-cooper.

unlike in flexible currency exchange regimes where market prices are determined by free markets operating within the Forex exchange market.[32]

When a nation devalues its currency to solve its imbalance of payment position, the value of the local currency is diminished compared to all other currencies but most noticeably to its main trade partners. This lowers the cost of exports and allows exporters to compete more readily in overseas markets as the price of domestic products becomes more competitive which helps the national economy to grow. However, when it comes to the effectiveness of currency devaluation, there are three different approaches which supposedly contradict each other while also supplementing each other as each one of them looks at the issue from a different angle and these different approaches are, the *elasticities approach*, the *absorption approach*, and the *monetary approach.*[33]

1. The *elasticities approach* looks at the initial stage of payment imbalance and tries to fix it by focusing on the possibility of substituting one commodity with another due to the change in price which is engendered by the devaluation of the currency, and it focuses on one industry rather than on the economy as a whole. The primary premise of this strategy is that relative price changes occur between domestic goods and services with insufficient demand and highly sought products (either imported or exported) on the global market. Consequently, currency depreciation raises the costs of the highly demanded commodities by the same amount that it lowers the value of the currency, moving consumption to nontraded or less sought-after goods and services where the costs are lower than the highly demanded ones. Most importantly, this opens the door for an increase of exports of the goods that are in high demand both locally and internationally to consequently replenish the economy's and industry's resources that were lost in the initial trade imbalance.[34]

2. The *absorption approach* does not completely contradict the elasticities approach but rather complements it by shifting the focus on the economy as a whole rather than focusing on one sector of the economy. The main argument of this approach is based on the principle that any improvement in the trade balance of goods and services, must be associated with an increase in the difference between the level of domestic

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[32] Ibid.
[33] Ibid., 186–87.
[34] Ibid., 187.

output and domestic expenditure. It starts by explaining how the total amount of goods and services available for the local market to absorb is represented by the sum of the total local expenditure on goods and services, and the total foreign expenditure on local goods and services. The amount of goods and services available for local "*absorption*" is the sum of the total level of local outputs and the total imports from the international market. If this equation rearranged to (Export – Import = Total domestic output – Total domestic consumption), it shows how any trade deficit can be caused by having a low level of output. To overcome the trade deficit, the difference between the level of output and the level of consumption must be lowered and this can be triggered either by increasing the production capacity alongside the unemployment rate or by reducing expenditure. Any improvement to the trade balance, therefore, cannot happen without reducing expenditure.[35]

3. The *monetary approach* argues that the main aim of currency devaluation is to decrees the money supply in the market which lowers the demand for goods, services, and securities (including the less demanded or nontraded ones) which is causing the deficit in the balance of payment. When the real value of money is reduced due to devaluation, it encourages people to cut their spending until the value of their money and financial assets goes back to its normal level which helps to improve the deficit in the balance of payment.[36]

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[35] Ibid., 188.
[36] Ibid., 188–89.

4 Practical Part.

The practical part of my thesis consists of two parts, the first one is a descriptive analysis on my case study of Egypt, and the second one will be an econometric analysis. A descriptive analysis will be used to have a better understanding over the Egyptian economic policies, as well as understanding the reason behind the Egyptian pound devaluation in 2016 which was followed by 2 others in 2022. After building an overview on my case study of Egypt, I will develop an econometric model to test the impact of the currency devaluation on attracting foreign direct investment into the country.

4.1 Overview on Egypt and its Economy.

Egypt which is the English name of the country stems from the ancient Greek name for the nation "Aigyptos". On the other hand, "Misr" the Arabic name may be traced back to the old Akkadian "Misru," which means boundary or frontier.[37] Egypt is a northern African country, with an estimated population of 108 million people in 2022 and borders the Mediterranean Sea, the Red Sea, and Sudan from the south. Egypt arguably possesses enormous economic resources. Its strategic location at the intersection of Europe, the Middle East, and Africa, along with its proximity to significant ports and the Suez Canal make it a prime location for trade. After Nigeria and Algeria, it has the third-largest proven natural gas reserves in Africa and the fifth-largest proven natural gas reserves thanks to substantial gas discoveries during the past ten years (after Libya, Nigeria, Angola and Algeria). Despite these significant reserves, the nation is a net importer of oil, and it has experienced a persistent shortfall of its electric capacities. In Africa, Egypt has the third-highest population after Nigeria and Ethiopia and second highest GDP only behind Nigeria.[38]

In 2011, the Arab spring reached Egypt and the uprising resulted in the overthrow of President Hosni Mubarak which was the result of nationwide protests and strikes organized by the Egyptian opposition parties. Until a new legislature was established in early 2012, Egypt's military served as the country's top authority. In the same year, Muhammad Mursi was elected president, however, he was met by a wave of protests. In response to the protests

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[37] "Egypt," in *The World Factbook* (Washington, DC: Central Intelligence Agency, 2023), https://www.cia.gov/the-world-factbook/countries/egypt/#terrorism.

[38] The African Centre for the Constructive Resolution of Disputes, "Egypt in the Aftermath of the Arab Spring," *ACCORD* (blog), accessed February 11, 2023, https://www.accord.org.za/conflict-trends/egypt-aftermath-arab-spring/.

against Mursi's administration that erupted throughout the spring of 2013, the Egyptian Armed Forces intervened and ousted Mursi in July 2013, and subsequently installed Adly Mansour as interim president in his place. At the same time, the government started passing laws restricting the freedom of assembly and expression. Furthermore, voters approved a new constitution in a referendum in January 2014, and the former defence minister Abdelfattah Elsisi was elected president in May 2014. Egypt's first House of Representatives since 2012 was chosen in a new legislature's election in December 2015. In March 2018, Elsisi was re-elected for a second four-year term. The Egyptian people, in a referendum, adopted a package of constitutional revisions in April 2019 that would enable Elsisi to extend his time in office beyond 2024 and, if re-elected for a third term, perhaps through 2030.[39]

According to the International Monetary Fund report in 2017, the Egyptian economy has suffered significantly as a result of the regional upheaval and the political changes since 2011. Macroeconomic imbalances have developed as a result of Egypt's underlying structural flaws and the drawn-out political transition. As a result, international reserves have been exhausted and competitiveness has been harmed by a highly overvalued currency rate. Large fiscal deficits have persisted for a long time, contributing to a high level of public debt, alongside poorly targeted subsidies, and an increasing wage bill in the public sector. Real and potential growth have slowed since 2011, as the lack of foreign currency and the unfavourable business environment discouraged investors, hampered productivity growth, and prevented creating new jobs. The risk of economic distress rose due to the negative impacts of regional instability, and security issues, especially in regard to the tourism industry.[40]

4.1.1 Fragile States and International Capital.

According to the report of The Organisation for Economic Co-operation and Development (OECD) '*FDI in Fragile and Conflict Affected Economies in the Middle East and North Africa*' of 2018, the business environment in the MENA region was identified as not favourable. In fact, in the world bank's report *Doing Business* (2019), Egypt was ranked

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[39] "Egypt."

[40] "Arab Republic of Egypt: Request for Extended Arrangement Under the Extended Fund Facility-Press Release; Staff Report; and Statement by the Executive Director for the Arab Republic of Egypt," Country Report (Washington, D.C: International monetary fund, 2017), 7, https://www.imf.org/en/Publications/CR/Issues/2017/01/18/Arab-Republic-of-Egypt-Request-for-Extended-Arrangement-Under-the-Extended-Fund-Facility-44534.

number 120 out of 190 surveyed economies, and it was categorized as a 'fragile' state in the OECD 2018 report.[41] In this report, Garin and Sanchez-Bella argued that fragile nations are characterized by situations where investors are more exposed to risk and where governments are less capable of exerting control, managing, or absorbing such risks. Violence, the collapse of institutions, migration, humanitarian crises, and other unfavourable developments contribute to fragility of the state. Moreover, Garin and Sanchez-Bella, argue that fragile nations are more vulnerable to conflict, chronic underdevelopment, and lengthy political crises. The key contributors to economic fragility, they continue, include fundamental economic imbalances, unequal growth, excessive reliance on raw resource, high rates of youth unemployment, and the fragile nations' inability to mobilize domestic revenue sources. Therefore, building resilience requires increasing financial flows (FDI) to fragile and conflict-affected states in order to both mitigate the effects of conflict and poverty and to address the root causes of fragility, add Garin and Sanchez-Bella.[42]

Furthermore, Borensztein et al, 1998 argued that foreign direct investment may help mobilize and transfer resources and skills that, when combined, can help make an economy become more resilient to shocks and reduces the possibility of it becoming fragile. By encouraging economic diversification, foreign investment can increase resilience for countries that are heavily dependent on a particular good or industry. By advancing up the value chain and fostering knowledge and technology transfer, FDI may be able to lessen the economy's sensitivity to changes in global commodity prices, continue Borensztein et al.[43]

Below table 1 shows the FDI inflows to Egypt which, according to *The World Bank* data, have fluctuated significantly throughout the past ten years. Nominal FDI flows reached their highest level in 2007 at USD 11.6 billion, then started to decline as a result of the global financial crisis. FDI inflows fell even more dramatically as a result of the Egyptian revolution in 2011, reaching a negative USD 482.7 million.

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[41] Weltbank, ed., *Training for Reform: A World Bank Group Flagship Report*, Doing Business, 16th edition 2019 (Washington, DC, USA: World Bank Group, 2019), 5, https://doi.org/10.1596/978-1-4648-1326-9.
[42] Pilar Sanchez-Bella and Juan Garin, "FDI in Fragile and Conflict-Affected Economies in the Middle East and North Africa: Trends and Policies" (Jeddah, Kingdom of Saudi Arabia: OECD, 2018), 8–10, https://www.oecd.org/mena/competitiveness/ERTF-Jeddah-2018-Background-note-FDI.pdf.
[43] E. Borensztein, J. De Gregorio, and J-W. Lee, "How Does Foreign Direct Investment Affect Economic Growth?," *Journal of International Economics* 45, no. 1 (1998): 115–35, https://doi.org/10.1016/S0022-1996(97)00033-0.

Table 1: Change in net flow of Foreign direct investment in Egypt

Year	Foreign direct investment (Billion USD)	Change in %
2012	2,8	-
2013	4,2	50 %
2014	4,6	9.5 %
2015	6,9	50 %
2016	8,1	17.4 %
2017	7,4	- 8.6 %
2018	8,1	9.5 %
2019	9	11.1 %
2020	5,8	- 35.6 %
2021	5,1	-12.1 %
2022	8,1	58.7 %

Source: The World Bank[44]

After the Egyptian revolution ended and after the election of the new President Mohamed Morsi in 2012, FDI inflows started to recover and, in 2013, FDI inflows increased by 50% more than the previous year. Due to a period of political instability in the country, however, in 2014, the year-on-year growth of FDI inflows to the country dropped to only 9.5%. In May of the same year, the Egyptian people elected the defence minister Abdel Fattah El-Sisi to become the new president of Egypt. Since this, the country started to gain back its political stability and the foreign direct investment inflows started to increase reaching 9 billion USD in 2019. In 2020, the COVID-19 pandemic started and with it the FDI inflow to Egypt declined by 35.6%. and for the year of 2022, FDI inflows to Egypt are forecasted to reach 8.1 billion USD in 2022 which is an increase of 58.7 %.

4.2 Monetary Policy of Egypt and its Influence on FDI.

According to its official statement, the Central Bank of Egypt (CBE) is responsible for the development of and carrying out Egyptian monetary policies, and the preservation of price stability, which is one of the bank's primary goals. The bank's main instrument for ensuring price stability is its control over interest rates which became important since Egypt transited into a floating exchange rate regime in 2016. The CBE is dedicated to maintaining low rates of inflation over the medium term, which is seen as a crucial instrument for preserving high rates of investment and economic growth. The CBE achieves its inflation

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[44] "Foreign Direct Investment, Net Inflows (BoP, Current US$) - Egypt, Arab Rep. | Data," accessed February 26, 2023, https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD?view=chart&locations=EG.

goals through controlling short-term interest and a variety of other factors, including taking changes in the credit and money supply into consideration. The Monetary Policy Committee (MPC) of the CBE, which has nine members including the Governor of the CBE, two Deputy Governors, and six members of the Board of Directors, is the organ responsible for taking decisions regarding the monetary policy.[45]

After the end of the political instability period in Egypt and when the economy entered a recovery phase, the authorities understood that economic policy packages must be implemented firmly in order to restore investor confidence, bring inflation down to single digits, build solid international reserves, strengthen public finances, and to encourage private investors. Consequently, the Egyptian authorities introduced the 'home-grown program' which was supported by the Extended Fund Facility (EFF) arrangement that was taken with the International Monetary Fund (IMF). The program's main Monetary objectives are to:[46]

1. Liberalize the foreign exchange system to end currency shortages and promote investment and exports (to restore competitiveness).
2. Tighten the monetary system to fight inflation.

A cautiously restrictive monetary policy will support the new exchange rate regime in order to stabilize inflation expectations, control pressure from both domestic and international demand, and to promote the accumulation of foreign currency reserves.

4.2.1 Liberalizing the Foreign Exchange System.

Since 1989, the Egyptian pound and its exchange rate were strictly managed by the Central Bank of Egypt.[47] Due to the fixed exchange rate and the government's use of all its available tools to maintain a strong exchange rate for the pound led the pound to be significantly overvalued making the country lose its competitiveness and attractiveness for FDI. This added significant pressure on the Egyptian balance of payment where private capital inflows, including FDI and the foreign currency reserves, decreased while the current account deficit increased. The Egyptian authorities, therefore, initiated some policy

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[45] "Central Bank of Egypt Monetary Policy Framework," 2023, https://www.cbe.org.eg/en/MonetaryPolicy/Pages/MonetaryPolicyFramework.aspx.
[46] "Arab Republic of Egypt," 2017, 2–3.
[47] Howard Handy, *VI Sustainability of the Exchange Rate Regime*, *Egypt* (Washington, D.C: International Monetary Fund, 1998), 34, https://www.elibrary.imf.org/display/book/9781557757203/ch06.xml.

adjustment measures in 2014/15, where the CBE devalued the Egyptian pound by 5 percent. This devaluation, however, was not sufficient enough to change the *status que* which entailed having a shortage of foreign currency and an overvalued domestic currency which kept hindering development in the manufacturing sector.[48]

Table 2: Change in USD / EGP exchange rate

Year	Currency Exchange 1 USD / EGP	Change in %
2012	6,03	-
2013	6,88	13.9 %
2014	7,08	2.9 %
2015	7,71	8.9 %
2016	10,09	30.9 %
2017	17,89	77.4 %
2018	17,88	- 0.1 %
2019	16,87	- 5.6 %
2020	15,87	- 5.9 %
2021	15,76	- 0.7 %
2022	19,32	9.4 %

Source: Central Bank Of Egypt[49]

According to the International Monetary Fund (IMF) report of 2017, the economic growth of Egypt started to slow down in 2016. The Central Bank of Egypt (CBE), consequently, devaluated the Egyptian pound by 13 percent in the Q1 / 2016. However, the Egyptian pound was still overvalued and according to the analysis done by Price Water House (PWC), the difference between the official exchange rate and the so-called 'black market' rate hit the mark of 100%.[50] In November 2016, the Central Bank of Egypt devaluated the pound by a further 32.5% and stopped controlling the official exchange rate in order to move to a more flexible exchange rate system.[51]

By looking at table 2 which shows the fluctuation of the yearly average Egyptian pound exchange rate against the US dollar, we can see that in the year of 2017 and after letting the pound to float, i.e., letting the exchange rate be determined by the market forces

[48] "Arab Republic of Egypt," 2017, 5–6.
[49] "Central Bank of Egypt," accessed February 26, 2023, https://www.cbe.org.eg/.
[50] PricewaterhouseCoopers, "The EGP Devaluation: A New Beginning," PwC, 2017, https://www.pwc.com/m1/en/publications/the-egp-devaluation-a-new-beginning.html.
[51] "Arab Republic of Egypt," 2017, 7–9.

of supply and demand for one year, the Egyptian pound lost 77% of its value. From 2017 up to 2021, the Egyptian pound was stable and fluctuated between 16 and 18 EGP per 1 US dollar. In 2022, the Central Bank of Egypt further devaluated the Egyptian pound 2 times in an attempt to get an additional 3 billion US dollar loan from the International Monetary Fund (IMF), the first devaluation was by 16.2 % while the second one was for an additional 6%.[52] However, the overall year-on-year average value of the pound against the dollar stood at a loss of 9%.

4.2.2   The Interest Rate in Egypt.

After the Central Bank of Egypt floated the Egyptian pound, it was left with only one instrument available to keep inflation down and ensure price stability which is the deposit interest rate. Due to the high inflation rate after the period of political instability in the country, the Central Bank of Egypt had to impose a high interest rate. Table 3 shows the change in the deposit interest rate in Egypt which was stable from 2012 till 2016 and ranged between 6.9% and 7.9%. However, from the end of 2016 onwards, the monetary policy in Egypt was proactively tightened in response to the growing inflationary pressures and in combination with the newly introduced floating exchange rate system. The Egyptian pound, however, continued to be overvalued through the next year 2017. Consequently, the government, in order to fight inflation, increased the interest rate and the average annual deposit interest rate which was at 12.1%. This entailed a 53.8% year-on-year increase in the average deposit interest rate from 2016-2017. This high average interest rate of around 12% was maintained for 2 years, until the COVID-19 pandemic started in the beginning of 2022 and lasted for 2 years in which the government had to lower the interest rate in order to encourage spending and to influence the economy and push it towards economic growth. Later in 2022, the Central Bank of Egypt raised the deposit interest rate to fight inflation after the Egyptian pound depreciated 2 times in Q4 / 2022 and lost almost 100% of its value compared to 2016 when economic reforms started to take place.

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[52] "Arab Republic of Egypt: Request for Extended Arrangement Under the Extended Fund Facility-Press Release; and Staff Report," Country Report (Washington, D.C.: International Monetary Fund, 2023), 8, https://www.imf.org/en/Publications/CR/Issues/2023/01/06/Arab-Republic-of-Egypt-Request-for-Extended-Arrangement-Under-the-Extended-Fund-Facility-527849.

Table 3: Change in Egyptian deposit interest rate.

Year	Deposit Interest Rate	Change in %
2012	7,6 %	-
2013	7,7 %	0.5 %
2014	6,9 %	- 9.9 %
2015	6,9 %	- 0.1 %
2016	7,9 %	13.8 %
2017	12,1 %	53.8 %
2018	12,3 %	1.9 %
2019	11,0 %	- 11 %
2020	7,8 %	- 29 %
2021	7,4 %	- 4.88 %
2022	10,1 %	36 %

Source: The World Bank[53]

4.3 Fiscal Policy of Egypt and its Influence on FDI.

After the Egyptian revolution and the period of political instability, a stable government was formed who acknowledged that a structural reform is needed in order to restore a sustainable economic growth. The government further committed itself towards fiscal consolidation to support the implemented monetary policies. These policies address the large budget deficit which puts the public debt and unemployment at higher levels and which slows economic growth. An essential goal of the authorities' agenda in the 'home grown program' is to significantly reduce budget deficits and to put public debt on a clear downward trend. The government acknowledge the need to establish a stable tax system and clear incentive programs to attract investors, which will contribute to the economic development in the country and improves the government ability to payback its debt. The implementation of a VAT system, the elimination of energy subsidies, and the rationalization of the public sector wage bill were the main legislative initiatives to achieve these goals, all of which will impact the poor segments of society. In response, the government plans to utilize some of the budgetary savings to reinforce social safety nets in an effort to lessen the impact of the changes on the poor. In the policy adjustment measures of 2014/15, prices for fuel and electricity were increased, and a strategy for gradually eliminating subsidies was created. As a result, the subsidy cost, which contributes to much of the government's

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[53] "Deposit Interest Rate (%) - Egypt, Arab Rep. | Data," accessed February 26, 2023, https://data.worldbank.org/indicator/FR.INR.DPST?view=chart&locations=EG.

expenditure, decreased by over 3% of GDP. It was also decided to switch the General Sales Tax to VAT.[54]

Table 4: Change in the Egyptian Government final consumption expenditure

Year	Government consumption expenditure (Billion USD)	Change in %
2012	31,2	-
2013	32,7	4.8 %
2014	36,2	10.7 %
2015	38,7	6.9 %
2016	37,9	- 2.1 %
2017	23,7	- 37.5 %
2018	20,8	- 12.2 %
2019	23,2	11.5 %
2020	28,9	24.6 %
2021	32,1	11.1 %
2022	25,5	- 20.6 %

Source: The World Bank[55]

As part of the structural reforms, the incumbent government introduced many incentive programs in an attempt to attract foreign capital in the manufacturing industry, either by, *inter alia*, offering them export financial support, tax discount, and by the creation of free trade zones.[56] Table number 4, representing total government expenditure, shows how government expenditure was in an upward trend till 2016 when the government started with the macroeconomic reforms. From the fiscal year of 2016 till 2018, the government clearly cut their spending by about 40%. In 2020, however, the Egyptian government increased its expenditure by 24.6% and by 11.1% in 2021 which was, it can be argued, in response to the Covid-19 pandemic in order to prevent the economy from slowing down due to the closer of business and travel restrictions. In 2022, when economies around the world started to recover and travel restrictions to be lifted, the Egyptian government cut their spending by 20.6%.

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[54] "Arab Republic of Egypt," 2017, 1–4.

[55] "General Government Final Consumption Expenditure (Current US$) - Egypt, Arab Rep. | Data," accessed February 26, 2023, https://data.worldbank.org/indicator/NE.CON.GOVT.CD?locations=EG.

[56] General Authorities for Investment and Free Trade Zone, "Invest in Egypt," 2023, https://www.investinegypt.gov.eg:443/English/Pages/GettingStartedDetails.aspx?CategoryId=17.

4.4 Econometric modelling.

The main objective of this work is to investigate the reasons behind the Egyptian pound devaluation movement by the Central Bank of Egypt (CBE) in 2022, also to analyse its effects on attracting Foreign Direct Investment (FDI) to the Egyptian market. In order to analyse the effect of currency exchange rate on FDI inflow, I will be using econometric modelling to study the correlation of the currency exchange rate with FDI for a time period of 11 years. The period starts from 2012, which indicates the end of the Egyptian uprising, until 2022. This time period incorporates the first currency devaluation of 2016 and the latest currency devaluations of 2022 to my model. The linear regression model of the econometric analysis will consist of the instruments of fiscal and monetary policies as an exogenous variable and FDI as an endogenous variable. To estimate the parameters of the econometric model, the Ordinary Least Square Method (OLSM) will be used. Moreover, economic and econometric verifications will be conducted to test whether the model is fit for the analysis. The econometric verification will consist of six tests: testing the significance of the parameters (hypotheses), goodness of fit (R^2), autocorrelation, heteroscedasticity, normal distribution of variables, and multicollinearity test.

4.4.1 Economic and Econometric Models.

Assumptions:

- FDI will increase if currency exchange decreases.
- FDI will increase if deposit interest rate increases.
- FDI will increase if government expenditure increases.

Economic model:

$$\mathcal{Y}_{1T} = f(\mathcal{X}_{1t}, \mathcal{X}_{2t}, \mathcal{X}_{3t})$$

Foreign Direct Investment (FDI) = f (currency exchange rate, deposit interest rate, government final consumption expenditure). In other words, the fiscal and monetary instrument is represented by the currency exchange rate, the deposit interest rate, and government expenditure, which has an effect on foreign direct capital inflows to the local market (Egypt for my case study).

Econometric model:

The econometric model consists of the same economic functions, while adding to it a stochastic variable (error term) which accounts for variables measurement in the regression model.

$$Y_{1t} = \gamma_{10}\mathcal{X}_{0t} + \gamma_{11}\mathcal{X}_{1t} + \gamma_{12}\mathcal{X}_{2t} + \gamma_{13}\mathcal{X}_{3t} + \mathcal{U}_{1t}$$

Where:

- $\mathcal{Y}_{1t}$: endogenous variable which represents FDI in billion USD.
- $\mathcal{X}_{0t}$: intercept term.
- $\mathcal{X}_{1t}$: 1st exogenous variable, representing USD / EGP currency exchange rate.
- $\mathcal{X}_{2t}$: 2nd exogenous variable, representing the deposit interest rate in percentage.
- $\mathcal{X}_{3t}$: 3rd exogenous variable, representing government expenditure in billion USD.
- γ_1: parameters for the exogenous variables.
- $\mathcal{U}_{1t}$: Stochastic variable (error term).

Data set:

Table 5: Data set for econometric modelling

Year	Foreign direct investment (Billion USD)	Currency Exchange 1 USD / EGP	Deposit Interest Rate	Government final consumption expenditure (Billion USD)
t	Y	X_1	X_2	X_3
2012	2,8	6,03	7,6 %	31,2
2013	4,2	6,88	7,7 %	32,7
2014	4,6	7,08	6,9 %	36,2
2015	6,9	7,71	6,9 %	38,7
2016	8,1	10,09	7,9 %	37,9
2017	7,4	17,89	12,1 %	23,7
2018	8,1	17,88	12,3 %	20,8
2019	9	16,87	11,0 %	23,2
2020	5,8	15,87	7,8 %	28,9
2021	5,1	15,76	7,4 %	32,1
2022	8,1	19,32	10,1 %	25,5

Source: The World Bank and the Central Bank of Egypt

Multicollinearity test:

The conduction of multicollinearity test is used to investigate any possible corelations among the exogenous variables of the constructed econometric model. The multicollinearity test is executed by creating a correlation matrix containing the correlation coefficient among all the variables which are included in the econometric model. A complete corelation between two variables is present when the correlation coefficient is equal to ±1, and a high presence of multicollinearity is indicated when the correlation coefficient is greater than ± 0.8. The presence of multicollinearity among exogenous variables could be problematic as it indicates that the explanatory variables have an influence on each other. Therefore, analysing the impact of a change in one independent variable on the dependent variable cannot be isolated. If multicollinearity were to be detected in the constructed model, multiple methods can be used to eliminate the multicollinearity. Examples of some of the methods that can be used to eliminate multicollinearity are; excluding one problematic variable from the data set, transforming the data set through the use of the first or relative difference on the problematic variable, or the use of a dummy variable. Alternatively, multicollinearity can be ignored, however, this would entail that the result of the analysis might not be accurate due to the presence of multicollinearity.

The correlation matrix for the data set of my case study was created using the software Gretl, table 6 represent the Correlation Coefficients, using the observations 2012 - 2022. 5% critical value (two-tailed) = 0.6021 for n = 11:

Table 6: Correlation matrix

	Y	X_1	X_2	X_3
Y	1.0000			
X_1	0.6709	1.0000		
X_2	0.6585	0.7542	1.0000	
X_3	-0.4299	-0.7961	-0.8995	1.0000

Source: Gretl computation

Based on the output from Gretl software, shown in table 6, a correlation coefficient of - 0.8995 is greater than - 0.8, therefore, a correlation was detected between the two exogenous variables of the deposit interest rate and the government final consumption expenditure. All attempts to eliminate multicollinearity using any other methods, except for

applying a dummy variable to the deposit interest, were unsuccessful, therefore, I replaced the outliers of the deposit interest rate by giving them a dummy variable of 1 and a dummy variable of 0 to all other data of the deposit interest rate. After the transformation of the deposit interest rate as a problematic exogenous variable, a new correlation matrix for the transformed data set was created using Gretl and is shown below in table 7:

Table 7: Correlation matrix for transformed data set

	Y	X_1	X_2	X_3
Y	1.0000			
X_1	0.6709	1.0000		
X_2dummy	0.5778	0.5741	1.0000	
X_3	-0.4299	-0.7961	-0.7813	1.0000

Source: Gretl computation

Based on the output from Gretl software in table 7, none of the corelation coefficient is greater than ± 0.8. Therefore, the transformed data set will be used to continue with the analysis of the case study.

Table 8: Transformed data set for econometric modelling.

Year	Foreign direct investment (Billion USD)	Currency Exchange 1 USD / EGP	Deposit Interest Rate	Government final consumption expenditure (Billion USD)
t	Y	X_1	X_2dummy	X_3
2012	2,8	6,03	0	31,2
2013	4,2	6,88	0	32,7
2014	4,6	7,08	0	36,2
2015	6,9	7,71	0	38,7
2016	8,1	10,09	0	37,9
2017	7,4	17,89	1	23,7
2018	8,1	17,88	1	20,8
2019	9	16,87	1	23,2
2020	5,8	15,87	0	28,9
2021	5,1	15,76	0	32,1
2022	8,1	19,32	0	25,5

Source: The World Bank and the Central Bank of Egypt

Parameters' Estimation using OLSM:

The estimation of the econometric model parameters was done using the OLSM method. The use of OLSM method on the transformed data set shown in table 8, was processed using Gretl software.

Figure 1: Estimation of Parameters


```
gretl: model 2

File  Edit  Tests  Save  Graphs  Analysis  LaTeX

Model 2: OLS, using observations 2012–2022 (T = 11)
Dependent variable: Y

              coefficient   std. error   t-ratio   p-value
  ---------------------------------------------------------------
  const        −8.50857      5.98924      −1.421    0.1984
  X1            0.377820     0.132752      2.846    0.0248   **
  X2dummy       3.17451      1.44703       2.194    0.0643   *
  X3            0.304486     0.148052      2.057    0.0788   *

Mean dependent var   6.372727    S.D. dependent var    1.994037
Sum squared resid   12.25657     S.E. of regression    1.323230
R-squared            0.691750    Adjusted R-squared    0.559643
F(3, 7)              5.236289    P-value(F)             0.032990
Log-likelihood     −16.20324     Akaike criterion     40.40648
Schwarz criterion   41.99806     Hannan–Quinn         39.40321
rho                 −0.409660    Durbin–Watson         2.447146
```

Source: Gretl computation

From figure 1, I formulated the following econometric model for my analysis of the case study:

$$Y_{1t} = -8.50857 + 0.377820\, X_{1t} + 3.17451\, X_{2t} + 0.304486\, X_{3t} + U_{1t}$$

4.4.2 Model Verification.

The main properties of OLSM are having a best, unbiased and consistent estimate. In order to verify whether the created model is in accordance with the properties of the method chosen for the estimation of the parameters an economic, statistic, and econometric tests will be conducted.

Economic Verification

Economic verification is entails studying the influence level of the independent variables on the dependent variable in our model. The verification is done by assumming that all independent variables are set to zero, except one, and checking whether the influence of the targeted variable is consistent with the economic theories:

- When all exogenous variables were set to zero, the FDI inflow to Egypt decreased by 8.50857 billion USD. The decrease of FDI inflow is possible if the government does not attract foreign investors by making the local market more attractive, especially when the business environment in Egypt was ranked badly (120/190).

- If the currency exchange rate (USD/EGP) increases by 1 unit (USD buys more EGP), it will increase the inflow of FDI by 0.377820 billion USD. When the Egyptian pound depreciates, the Egyptian market will become more competitive and therefore foreigners will be willing to conduct more business with Egypt than before.

- If the interest rate were to be raised by 1%, it will increase the inflow of FDI by 3.17451 billion USD. Increasing the interest rate attracts FDI since foreign investors get a higher rate of return on their investment.

- If the government final consumption expenditure were to increase by 1 unit, the inflow of FDI to the market will increase by 0.304486 billion USD. When the government spends more on the infrastructure or on providing incentives for investors, it will attract more FDI.

From the aforementioned interpretation and explanation, I conclude that all of the parameters included in the model, are consistent with the economic theories.

Statistical Verification:

Statistical verification will consist of testing the significance of the estimated parameters and the Goodness of fit (R^2) of the econometric model which was created. Starting from the Goodness of fit, and by looking at table 9, $R^2 = 0.6917$ which means that 69.17% of the data variation in the dependent variable is explained by the independent variables.

Testing the significance of the independent variable on the dependant variable entails two hypotheses, the null hypothesis, which reflects whether the targeted variable is not statistically significant, while the alternative hypothesis reflects whether the targeted variable is statistically significant. The significance test is done using F-test or T-test. In-case of the usage of T-test, comparing the t-value to the t- $\alpha_{(DF)}$ will indicate whether to accept the null hypothesis or the alternative one. Another method to identify which hypothesis to accept or reject is done by comparing the P-value to the critical value known as alpha (α). If the P-value were to be greater than the critical value (α) we accept the null hypothesis, and the variable is seen as statistically insignificant.

Table 9: Regression Results

Variable	Coefficient	Std. Error	t-ratio	p-value	
Const	−8.50857	5.98924	−1.421	0.1984	
X_1	0.377820	0.132752	2.846	0.0248	**
X_2dummy	3.17451	1.44703	2.194	0.0643	*
X_3	0.304486	0.148052	2.057	0.0788	*

Mean dependent var	6.372727	S.D. dependent var	1.994037
Sum squared resid	12.25657	S.E. of regression	1.323230
R-squared	0.691750	Adjusted R-squared	0.559643
F(3, 7)	5.236289	P-value(F)	0.032990
Log-likelihood	−16.20324	Akaike criterion	40.40648
Schwarz criterion	41.99806	Hannan-Quinn	39.40321
rho	−0.409660	Durbin-Watson	2.447146

Source: Gretl computation

Significance test hypothesis:

H_0: Parameters are not statistically significant.

H_A: Parameter is statistically significant.

Table 10: Significance of parameters

Variable	P-Value	Critical value	Result
Const	0.1984		Accept H_0: Parameter is insignificant
X_1	0.0248	0.05	Reject H_0: Parameter is significant
X_2 Dummy	0.0643		Accept H_0: Parameter is insignificant
X_3	0.0788		Accept H_0: Parameter is insignificant

Source: Gretl computation

Table 10 shows that at level of α = 5%, there is only one significant variable which is the currency exchange rate (X_1), however, if we chose the critical value of α = 10, then all the parameters will be significant except for the intercept term.

Econometric Verification

i.   Autocorrelation test:

To examine whether autocorrelation is present in the econometric model, I will use the Dublin-Waston (DW) test, which will be calculated using Gretl software. The value of DW test is always in the interval between 0 and 4. If the value of the DW test is close to 2, it would mean that there is no autocorrelation, if the value of the DW test is lower than 2, it would mean a positive autocorrelation, while a higher than 2 value would mean negative autocorrelation.

Hypotheses:
- H_0: No presence of autocorrelation.
- H_A: There is a presence of positive or negative autocorrelation.

Figure 2: Autocorrelation


```
Durbin-Watson statistic = 2.44715
p-value = 0.391438
```
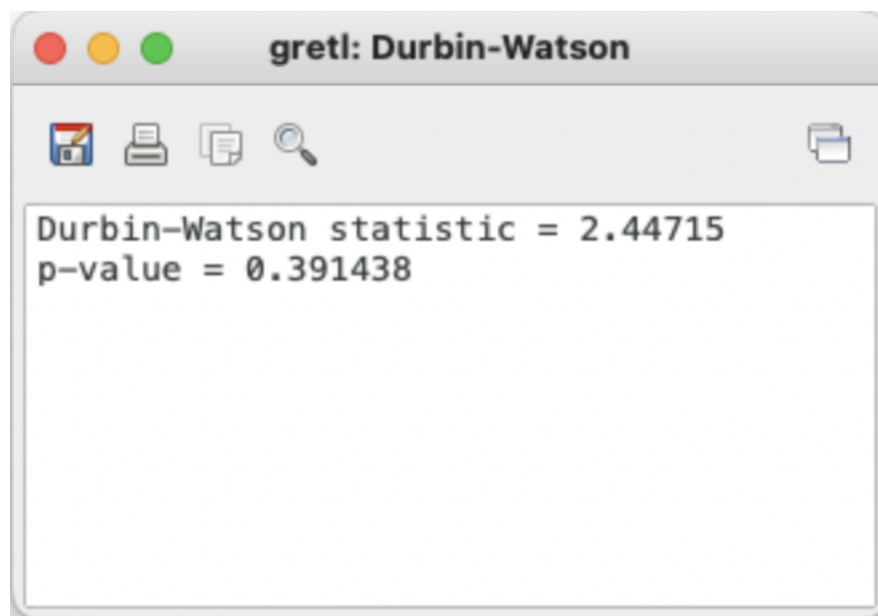
Source: Gretl computation

Figure 2, shows that the value of the DW test is equal to 2.44715, which means that no autocorrelation was detected as the DW test value is close to 2. This is confirmed by

looking at the p-value = 0.391438 which is greater than α = 5%, meaning that there is no autocorrelation detected in my model.
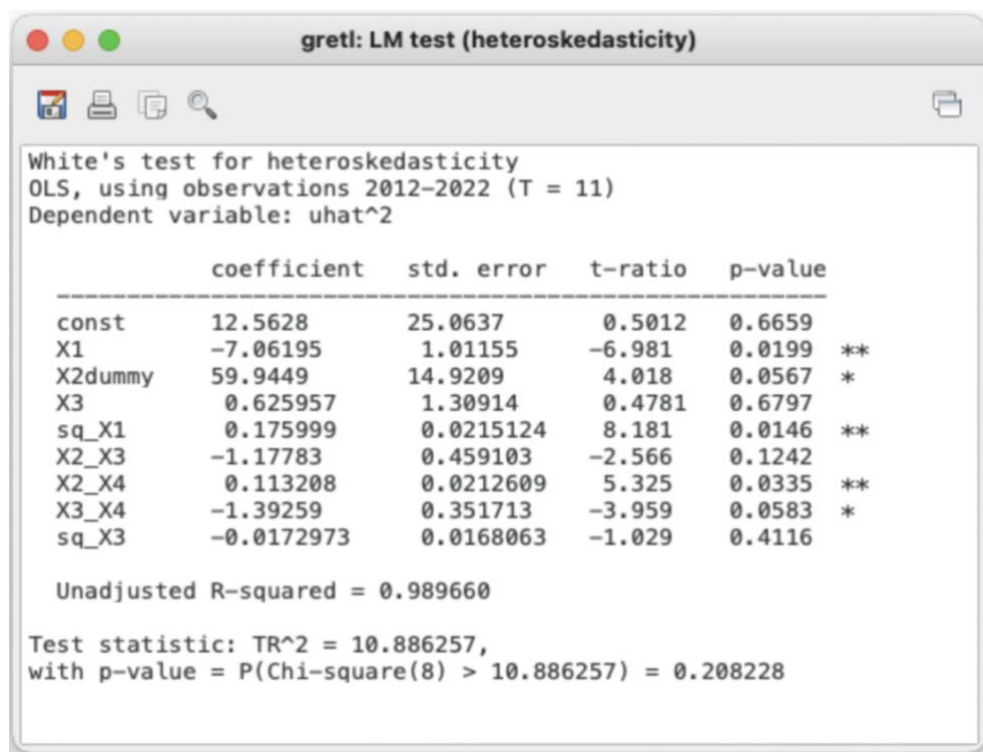
ii.   <u>Heteroscedasticity test:</u>

The need for conducting a heteroscedasticity test is based on the importance of examining whether the variance of the residuals (error term) is a function of the regressors. To perform this test, I will be using the White test, which will be calculated using Gretl software.

Hypotheses:

- H_0: Homoscedasticity.
- H_A: Heteroscedasticity.

Figure 3: Heteroskedasticity test


```
gretl: LM test (heteroskedasticity)

White's test for heteroskedasticity
OLS, using observations 2012–2022 (T = 11)
Dependent variable: uhat^2

                coefficient    std. error    t-ratio    p-value

  const         12.5628        25.0637        0.5012     0.6659
  X1            -7.06195        1.01155       -6.981     0.0199   **
  X2dummy       59.9449        14.9209        4.018      0.0567   *
  X3             0.625957       1.30914       0.4781     0.6797
  sq_X1          0.175999       0.0215124     8.181      0.0146   **
  X2_X3         -1.17783        0.459103      -2.566     0.1242
  X2_X4          0.113208       0.0212609     5.325      0.0335   **
  X3_X4         -1.39259        0.351713      -3.959     0.0583   *
  sq_X3         -0.0172973      0.0168063     -1.029     0.4116

  Unadjusted R-squared = 0.989660

Test statistic: TR^2 = 10.886257,
with p-value = P(Chi-square(8) > 10.886257) = 0.208228
```

Source: Gretl computation

Based on the Gretl software's calculation (shown in table 4), the P Value of White's test is 0.208228 which is greater than α = 5%. Therefore, I cannot reject the null hypothesis and the model has no heteroscedasticity.
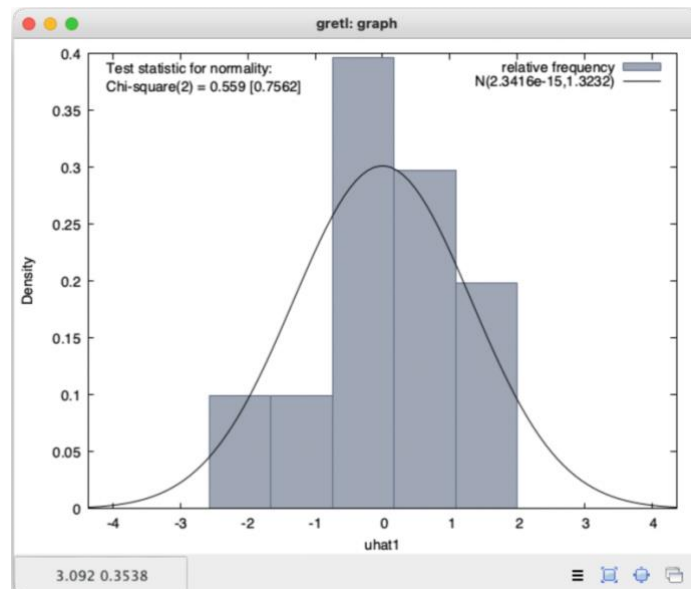
iii.   Normality test:

The Normality test examines whether the residuals were evenly distributed or not. Therefore, it is considered to be an important test to confirm the central tendency of the data. The Normality test will be done using Gretl software. If P value is greater than α = 5%, it indicates that the null hypothesis cannot be rejected.

Hypotheses:
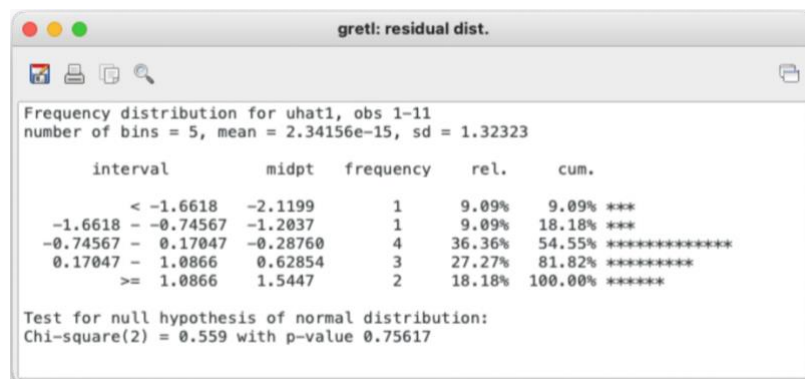- H_0: Random variables are normally distributed.
- H_A: Random variables are not normally distributed.

Figure 4: Normality distribution

Source: Gretl computation

Figure 5: Normality test

Source: Gretl computation

Based on the output from Gretl (shown in figure 6), the p-value is 0.75617 which is greater than the α = 5%. Therefore, the null hypothesis cannot be rejected, it indicates that the random variables are normally distributed in the model.

5   Results and Discussion.

To investigate the impact of economic policies on foreign direct investment inflow to the targeted market, and to investigate whether currency depreciation (alongside other economic indicators) can have an influence on the movement of FDI in or out of the targeted market. Descriptive and quantitative analysis were done on the case study of Egypt for the period of 2012 – 2022. I found that, following the Arab Spring in Egypt, there was a long period of political instability, weak foreign currency reserves, the government being the main economic operator, and the economic focus of the country being exploiting natural resources rather than developing local industries. All of these factors have contributed to the outflow of FDI from the Egyptian economy. In an attempt to restore the attractiveness of the Egyptian market for foreign investors, the Egyptian government, which was established in 2014, started a set of economic reforms that included currency depreciation, raising interest rates, and reducing the government expenditure to reduce debt.

In my quantitative analysis of the economic methods which were used by the Egyptian government to restore attractiveness and economic growth, I found that if the Egyptian government did not make any reforms, nor implement economic policies aiming to attract FDI, the outflow of foreign capital would have been much greater than the inflow. This outflow could be either due to the lack of locally produced goods and services, or due to loosing competitiveness on the international market. One of the main reasons behind loosing competitiveness of Egyptian products on the international market was having an overvalued currency, which made the locally produced goods more expensive than those of the competitors'. According to the econometric analysis, I found that the USD/EGP exchange rate to be the only significant variable having an influence on the flow of FDI to the Egyptian market. This entails that a depreciation in the exchange rate of the. EGP would increase the flow of FDI.

The other two-variables used in my quantitative analysis addressed the deposit interest rate and the government final consumption expenditure. Both variables were not

found to be having a statistically significant influence on FDI inflows. The reason behind the insignificance of the two variables might be attributed to having a correlation between the two of them which was detected in the original data set and was eliminated in the transformed data set. Therefore, raising interest rates on deposits in an attempt to increase the demand for local currency, which should result in an increase in the flow of foreign capital, was not found to be a significant variable influencing the inflow of FDI to the market due to it being regulated by tight monetary policies. These policies limited the investors' ability to withdraw their return on investment out of the Egyptian market which decreased investors' interest in the Egyptian market.

When it comes to the insignificant influence of the government expenditure on the inflow of FDI, it might be due to the fact that the main factor, which usually attracts FDI when the government increases expenditure, is the incentives offered to them which, in Egypt, took the form of custom tax discounts. Since Egypt, however, is within multiple free trade zones, (e.g., EU, GAFTA, AfCFTA, among others) reducing custom taxes offers no new incentives for foreign investors coming from markets that has already signed free trade agreements with Egypt granting them zero custom tax on imports.

6 Conclusion.

All in all, Egypt in the past decade has gone through a tumultuous period. The political unrest, in the beginning of the 2010s, created an unfavourable environment for businesses and investors. The political unrest grew out of the previous social and political environment, both of which were in their own right unfavourable for business in the first place. An authoritarian regime and a mainly state-run economy with a large public sector contributed to the economy being inflexible which led to higher levels of unemployment, poverty, and corruption. All of these factors contributed to the reasons which triggered public unrest to begin with, while, subsequently, public unrest contributed to investors' increased avoidance of conducting business in the Egyptian market.

After the uprising and the political instability in Egypt ended, the new administration of Al-Sisi, however, attempted to overturn this vicious cycle and aimed at attracting investors and FDI by liberalizing the economy which included – but was not limited to – floating the currency to restore the competitiveness of the market which was initially recommended by

the IMF as the Egyptian pound was overvalued to begin with and floating it only caused it to lose value on the free market.

In this paper, I investigated the effect of this currency floating – and the devaluation that followed – on the attractiveness of the Egyptian market for foreign investors. In the literature reviewed, many researchers argued for the existence of an affect relationship between currency devaluation and FDI, while many others argued against it. In my research, I have found that currency devaluation has a significant influence on FDI, however, I have also found that it is not the only influence.

Attracting FDI includes having a clear and straight-forward strategy for attracting foreign investors, having a robust tax system, having an effective incentives program, and is not limited to currency floating. The new Egyptian administration has acknowledged these needs, but drafting policies and implementing them to address those needs has taken so long – 4 years – which discouraged and even repelled investors. The main focus of this administration has arguable been mostly aimed at attracting foreign currency through loans, and an increase of investment in the financial sector after floating the currency. Growing the industrial sector, however, which was announced and presumed to be the government's aim, was not largely affected by the currency devaluation. This has arguably shed a light on a gap between the declared aims of the government and the policies which it created.

Affective policies to grow the industrial sector should arguably include tax reforms, and a clear incentives program which is not limited to custom tax discounts, e.g., provide land for new-entry industrial investors. By focusing on the provide custom tax discounts, the Egyptian administration has arguably not offered any new incentives to most prospective foreign investors as most of these investors have enjoyed customs free access to the Egyptian market as the latter is part of many free trade zones to begin with.

In conclusion, it appears that the Egyptian government has had good intentions to liberalize the economy and to grow its industrial sector, however, the slow pace of implementing changes, a focus on floating the local currency, and introducing custom tax discounts, while at the same time being part of many free trade zones, have all been contributing factors to the limited increase in the grow of the Egyptian industrial sector.

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