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## Foreign Direct Investment and Migration to the Persian Gulf

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FOREIGN DIRECT INVESTMENT AND MIGRATION TO THE PERSIAN GULF

by  
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A thesis presented in partial fulfillment of the requirements for completion Of the  
Bachelor of Arts degree in International Studies Croft Institute for International Studies  
Sally McDonnell Barksdale Honors College The University of Mississippi.

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## **Abstract**

This thesis studies the effect of foreign investment policy in the Gulf Cooperation Council member nations on labor migration to the Persian Gulf. The study uses a difference in differences regression to estimate coefficients for financial liberalization, special economic zones, and foreign direct investment on total immigrant stocks. The regression analysis finds a weakly negative association between special economic zones and immigration, and no significant effect of foreign investment.

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## 1. Introduction

The Arab states of the Persian Gulf are among the wealthiest in the world due to high concentrations of natural resources, particularly oil and natural gas, and generally stable governments. These factors as well as Saudi Arabia's efforts to expand its influence in regional competition with Iran have caused the Persian Gulf to take on a high strategic significance to any nation with a vested interest in Middle Eastern politics. However, a variety of elements now threaten the extended stability of the Gulf region.

Because the countries in the Persian Gulf region have very sparse populations relative to resource wealth, they have relied on migrant workers to provide the labor required to extract their resources. The ever-increasing proportion of migrants in the population and international concerns for their rights and well-being often come into conflict with the interests of the native workforce, a workforce which faces high unemployment and demands higher wages than migrants from South Asia (see section 2.2). Tension between these groups could threaten each country's stability from the inside. Meanwhile, Saudi Arabia's participation in the Yemeni Civil War alongside the United Arab Emirates (UAE) and their joint blockade of Qatar, both driven by its rivalry with Iran, threaten these countries' economic stability and international credibility.

This study focuses on the migrant labor aspect of Gulf society. In particular, it uses quantitative methods to study the efficacy of financial policy intended to discourage immigration to the Gulf. It finds that contrary to macroeconomic theory, investment policy intended to grow the active labor force through foreign investment may in fact also encourage immigration.

### **1.1 Research Question**

Because of high international migrant stocks in the Arab states of the Persian Gulf, the Gulf Cooperation Council (GCC) members have sought to introduce policies that discourage immigration and encourage growth and the employment of native workers. Foremost among these policies are broad financial liberalization, and the establishment of special economic zones (SEZs) to promote foreign investment in high-tech and service industries. This study uses difference in differences analysis on the relationship between foreign direct investment (FDI) and migration to find an answer to the question: “do SEZs and increased FDI achieve the GCC’s goal of reducing low-skilled migration?”

### **1.2 Outline**

To answer this question, this paper first surveys the theoretical economic literature for the interaction between investment and labor migration and identifies a predicted substitution effect between FDI and immigration (section 2.1). It then turns to ethnographic and demographic studies of the GCC members to provide an overview the available data, and the situation of migration to the GCC (section 2.2).

In the third section, this paper first identifies the GCC's perceived need for policies to reduce immigration to its member states (section 3.1). Then it looks at the specific steps taken in the financial sector to encourage investment and thereby decrease immigration. In section 3.2, the paper outlines the history of investment policy reforms in the GCC country-by-country in order to demonstrate the trend towards liberalization across the region. Then, in section 3.3, it identifies the specific policies related to SEZs in the GCC, and finds that they all (Except for Saudi Arabia) include a policy allowing foreign investors to own 100% of the stakes in an enterprise conducted within an SEZ. These policies and the years of their introduction are used to identify treatment and control groups which are in turn used to analyze the efficacy of SEZs in reducing the dependence on immigrants.

In section 4.1, the paper explains the reasons for choosing to study GCC members for the effect of SEZs on immigration, and it provides partial justification to the parallel trends assumption. Then in section 4.2, it introduces the data used to examine the effect of SEZ policies. Finally, in section 4.4, it defines the difference-in-differences statistical model used to estimate the impact of the policy and control for FDI. In section 5, the paper reports the results of the estimated model and a series of robustness tests. Lastly, the paper concludes in section 6 with an overview and implications for future research.

### **1.3 Summary of Findings**

The empirical estimates of the regression model generate conflicting results that are not always consistent with the hypothesis that SEZs which allow full foreign ownership of businesses reduce the non-negative migration trends in the Gulf. The main linear model, however, does find a significant reduction in the migration trend following



the introduction of the SEZ policy. Surprisingly, there is no evidence of a substitution effect between migration and FDI. This suggests that the policy may take effect through a different mechanism than the theoretical literature suggests.

## **2. Literature Review**

Existing quantitative studies of labor migration to the Persian Gulf largely center around attempts to construct accurate estimations of the composition of the migrant workforce given very little accessible data published by the governments of the GCC member states. The theoretical and empirical economic literature thoroughly covers the impacts of FDI on wages, employment, and migration. However, there is a gap in the literature regarding empirical analysis of FDI's influence on migrant workers to the GCC states. This gap exists despite the fact that encouraging investment and labor force nationalization are major priorities for the council's members.

### **2.1 Economic Literature**

Trade theory has long examined the relationship between labor and capital, and in particular has sought to identify the conditions that lead to either a substitution effect or complementary effect between capital and labor. Most often, economists use standard models for bilateral trade in goods and bilateral trade's impact on wages and capital rents. Although these models can be used to explore and explain empirical relationships between immigration and FDI, and thus offer useful insight to the situation of the GCC. However, they do not always precisely model the trade-offs the GCC faces, since its members are not typically engaged investment relationships with the same countries from which they receive immigrants. Bilateral theoretical models compare changes in wages

and rents between two economies to describe the effects engaged in international trade. The case of the GCC is more multi-lateral than bilateral.

The Heckscher-Ohlin two-factor model (in this case, the factors being labor and capital) provides the standard framework for explaining the effects of capital inflows on the workforce. The model considers two countries, one abundant in labor, and the other abundant in capital, and concludes via the principle of comparative advantage the countries will specialize in industries intensive in their abundant factor. More relevant to the topic of this paper, under the Stolper-Samuelson (1941) hypothesis derived from this model, capital and labor are considered substitutes, such that a rise in relative rental rates (encouraging investment) would see a corresponding decrease in relative wages (discouraging immigration). Whether or not this substitution effect occurs in the Gulf economies is the core empirical question under consideration in this study.

The Helpman, Melitz and Yeaple (2004) (HMY) model considers the firm-level decision between international investment and trade and finds that inward FDI decreases in relative importance to trade when labor stocks increase. The model establishes an initial case of firms in many countries, each with their own endowments of labor and wages, producing differentiated products in a particular sector  $h$ . Then it gives a firm the opportunity to enter the market subject to country-specific fixed entry costs. After entering, a firm may choose to produce or exit, with production incurring an additional fixed labor cost. Should the firm choose to export it would face additional fixed entry costs per new market. However, if a firm chooses not to export, then it may still access a foreign market through affiliate production (i.e. FDI), which incurs high fixed production costs because of the duplication of industrial facilities, but reduces the marginal costs of

shipping. The activities of exporting or affiliate production are considered mutually exclusive in any given foreign market. Under this model, labor is the primary driver of marginal costs, so a firm's profits increase in direct proportion to productivity of labor. Although the HMY paper does not address immigration directly, it implies a substitution effect in labor-intensive industries, since immigration will increase the productivity of firms with respect to labor and decrease wages in any given economy.

With respect to models featuring immigration, Hubert Jayet and Lea Marchal (2016) extended the H-O model to a three-factor model. One of their primary objectives was to reconcile discrepancies between empirical evidence and the standard two-factor model by introducing the distinction between skilled and unskilled labor, and by analyzing extreme cases of high and low investment. They describe a model featuring a developed economy called "North" and a developing economy called "South," and a global market including a capital-intensive and a non-capital intensive good. Initially, the Northern capitalists hold the world's capital stock, and will choose to invest in the South as long as they can expect higher returns from offshore production in South.

Alternatively, the Northern capitalists can offer higher relative wages that will induce unskilled Southern labor to migrate. The model's equilibria are determined by the costs of migration and the mobility of capital. Under the given initial conditions, Jayet and Marchal find "...that capital and unskilled labor flows are substitutes, and that capital and skilled labor flows are complements (55)." According to this finding, the GGC members should expect a decrease in unskilled immigration as foreign investment boosts their capital stocks, although they might also experience an increase in skilled labor immigration.

Akinori Tomohara (2017) designed a statistical model based on the HMY assumptions but introduced the distinction between skilled and unskilled labor. The empirical estimate of the model implies that FDI decreases in labor-intensive industries as unskilled labor migration increases, as the HMY model would predict. On the other hand, the estimate also implies that FDI increases to capital intensive industries with the arrival of more skilled migrants. However, since unskilled migrants constitute 88% of the migrant stock in Japan, the substitution effect dominates overall. These findings are directly in line with those of the Jayet-Marshall model. Additionally, they offer an identical implication for the Persian Gulf, namely that FDI can reduce dependency on its large unskilled migrant populations, and provide employment opportunities in high-skilled industries for its underemployed workforces.

Despite the above models' macroeconomic and micro-foundational support for the substitutability of capital and unskilled labor, the models do not capture a long run dynamic relationship that may be occurring. Since increased stocks of workers should increase capital's productivity relative to labor, and decrease wages, the models imply a complementary relationship between labor and investment. Firms will be incentivized to invest in the GCC as the fixed costs of FDI decline and a large, relatively inexpensive workforce offers high returns on investment. Over the long run, as capital stocks increase, labor productivity should recover to some extent, and eventually wages may reach a high enough level to encourage new immigration. A study of migration to the United States by Maurice Kugler and Hillel Rapoport (2007) found contemporaneous substitutability between FDI and migration in accordance with the H-O model, but a difference-in-differences regression featuring lagged FDI found a dynamic complementarity over the

long run. The authors explain the complementarity effect as the result of networks between migrants and their home countries and between migrants and their host countries that facilitate FDI, rather than explaining the effect through changes in wages.

Unfortunately, the all of these models are designed to account for effects of FDI and migration between the FDI-sending and FDI-receiving countries, so they may not entirely suffice to explain a substitution effect between FDI and migration when the FDI-sending country is not the same as the one from which migrants are moving, as is the case with the GCC. For example, the network effects cited by Kugler and Rapoport could not explain an increase in United States FDI to Qatar when most migrants to Qatar arrive from South Asia. Neither does the HMY model's firm-level decisions to invest or trade directly correspond to the topic of this paper, even though it offers valuable insights to the relationship between labor and FDI. In order appropriately cover the effects of FDI on immigration to the GCC specifically, this paper will now turn to the literature treating the Gulf's particular situation.

## **2.2 Migrant Workers in the Persian Gulf**

Since 1985, no GCC state has had a labor force ratio of foreign to national workers lower than 50%, e.g., in 2008, Qatar's workforce consisted of 94% foreigners (Baldwin-Edwards 2011). Moreover, only Saudi Arabia and Oman's populations are majority national, and the UAE's foreign born population comprises as much as 80% of the total (Valenta and Jakobsen 2016). Throughout the GCC states, workers of South Asian origin by and large dominate the labor pool, with other Arab immigrants (largely Egyptian) forming a distant second largest block (Shah 2013). In recent decades, the

failure to balance an effective immigration system that maintains security and a low cost labor supply with sufficient respect for workers' rights has generated controversy.<sup>1</sup>

The studies seeking to explore GCC demographics in-depth face a shortage of readily available demographic information from reliable sources such as national statistics agencies, thus academic demographers typically rely on the records of labor-exporting countries to compliment whatever national statistics are available. Some insights into the political obstacles to accurate data collection are provided in Onn Winckler's 2017 book *Arab Political Demography*. The second chapter, "Sources for Demographic Research of the Arab States," gives a country-by-country overview of available statistics and offers likely reasons for each state's obfuscation of their records. Although the book is primarily concerned with the religious composition of the Arab states, it briefly covers which data are collected nationally, including immigration data.

For Saudi Arabia, Winckler finds that in the first three censuses (conducted in 1962, 1974, and 1992) each over-reported the number of citizens and underreported foreign workers, most likely to marginalize the Shi'a minority and allow for higher OPEC oil production quotas. Throughout this period, the annual Statistical Yearbooks did not include a demographics chapter. However, he concludes that the 2004 census most likely produced an accurate assessment of the population size, as its finding fell below what would be expected from growth rates since the 1992 census. Saudi Arabia no longer has incentive to underreport its population size, as a general political liberalization and reduced economic pressure following the US invasion of Iraq lowered incentives to

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<sup>1</sup> See Human Rights Watch's 2010 press release "Middle East: End 'Sponsored' Gateway to Human Trafficking," <https://www.hrw.org/news/2010/06/14/middle-east-end-sponsored-gateway-human-trafficking>

inflate population numbers. Thus official figures since 2004 are most likely accurate, albeit deficient in precise disaggregated data.

Bahrain is the GCC country with the longest history of carrying out censuses, beginning in 1941, and in addition its Civil Registration System has recorded births and deaths of Bahraini citizens since 1980. The Bahraini authorities even publish the population of migrant workers by nationality, although they do not provide a breakdown of the religious composition of those populations. The religious composition data are omitted in order to not empower the Shi'a majority against the ruling Sunni family (Winckler 2017).

Winckler characterizes the Kuwait, Oman, and the UAE as "...countries with nothing to hide, but even so, totally disregard the religious composition (47)." Kuwait has conducted censuses since 1957, and recorded births since 1952, although these data were considered unreliable until 1970 when birth registration became universal. Oman was an insular society until a 1970 coup encouraged more open records-keeping and the publication of development strategies. The first census was still not held until 1993. After that, Oman began to publish up-to-date information, including indigenous population and foreign workers by nationality. The UAE began to conduct censuses in 1968, but did not distinguish between foreign and indigenous population until 1978, and did not publish a census differentiating between foreign nationalities until 2005.

Finally, aside from a total population count, Qatar releases no demographic data differentiating between its citizens or migrants. Winckler posits that Qatar intentionally obscures the number of its citizens because its foreign population is the highest



worldwide, and the Qatari government tries to hide the number of foreigners that it has naturalized.

Martin Baldwin-Edwards (2011) has attempted to construct a number of key immigration and employment statistics up to 2009 from a variety of sources, while tracking demographic evolution over time. He ties immigration patterns to changes in international oil markets over time, and provides a table of the foreign component of GCC populations for the years 1975, 1985, 1997, and 2008, showing an overall increase over time. Later, drawing on data from the International Labor Organization and the World Bank, as well as his own calculations from GCC data, Baldwin-Edwards finds the GCC labor market to be extremely segmented between a public sector dominated by well-paid nationals, and a private sector employing mostly immigrants with weak laws protecting workers. He also uses national datasets to calculate unemployment rates by sector for immigrants and nationals wherever the requisite data are available, noting that the labor market is unable to absorb young nationals entering the workforce, and thereby causing increased unemployment (p. 19). Overall, Baldwin-Edwards's analysis likely provides the most accurate source for a number of key labor statistics in the GCC until 2009, although his calculations fail to cover enough historical years for a trend analysis.

Citing Baldwin-Edwards for much of the historical data on the GCC labor force, Nasra Shah (2013) has compiled a similar study analyzing trends in migration. She further supplements the data by compiling emigration statistics from migrant-sending countries, and adding an immigration/emigration policy analysis for sending and receiving countries. From a 2009 United Nations policy survey, she finds a discrepancy between the preferences of the GCC and the nine largest senders of immigrants to the

GCC. Four of the sending countries reported satisfaction with their emigration levels, while two found them to be too low, and three stated that their policy objective is to increase emigration, while the other half intended to maintain those levels. As for the six members of the GCC, four reported that immigration levels were too high and had set policy goals to reduce immigration, while the other two were satisfied and intended to maintain the then-current levels. In practice these restrictive policies to reduce the number of migrant workers involve imposing and enforcing immigration quotas and deporting irregular workers. Shah also examines the individual policies of the six main labor-sending countries to the GCC and finds that although the strategies for reducing barriers to emigration vary country by country, every country considers the remittances received from migrants a vital asset to their development.

Overall, both the Baldwin-Edwards and Shah studies point to labor migration becoming an increasingly contentious political issue within the Arab Gulf states and internationally, with a conflict of interest between the populations of the Arab states and the populations of the migrant sending countries.

### **3. Historical Context**

A number of unique circumstances characterize the Arab Gulf states, and they merit some consideration prior to a quantitative study of their policy. Since the GCC's founding in 1981, concerns over oil revenue and migrant labor dependency have driven both the international trade and internal development policies of its members.

#### **3.1 Labor Migration**

Perhaps the most notable distinction between the GCC member states and their Arab neighbors, or any other country, is their extreme dependence on foreign workers to sustain their labor intensive industries like oil production or construction. The widespread use of foreign labor has led to high unemployment amongst the native population, and therefore the GCC is attempting to develop human capital in their populations and attract investment in less labor intensive industries so as to provide more employment opportunities for their citizens. In addition to concerns about the native population's well-being, the employment policies of the GCC countries also raise concerns for the health and safety of their ever-increasing population of migrant workers.

Since petroleum production is the primary export industry of the GCC, migration trends have largely followed the development of the oil industry, and subsequently

changes in oil prices. The Arab Persian Gulf oil industry was born with the discovery of oil in Bahrain in 1932, and entered its infancy as reserves were discovered in all six of the GCC countries concluding with Oman in 1967 (Winckler 2009). As the industry grew, even during these early stages before the 1970's oil boom, the foreign-born population would grow to reach between 800,000-1.4 million. The migrant workforce then doubled in size during the oil shocks and boom of the early 1970s and continued to grow at an annual average rate of 7.7 percent for the GCC from 1975-1985. Consequently, by 1985, migrants constituted 65 percent of the workforce in Saudi Arabia --the largest of the GCC countries (Baldwin-Edwards 2011). Since then, although the absolute number of immigrants has increased uniformly from year to year, the proportions of migrants to native-born workers have fallen everywhere but in Qatar and Bahrain as more native workers have entered the labor force.

The GCC members all allow their companies to sponsor the employment of foreign workers under a contract labor system known as *kafala*. These contracts have faced widespread criticism from human rights groups, even to the point of being labeled “slave labor” by a variety of Western media outlets.<sup>2</sup> Despite some changes to the system made in the wake of increased international scrutiny as construction of World Cup 2022 facilities began in 2016, independent auditors still uncovered a number of abuses when they examined ten contractors in 2017. Among those abuses were charging workers recruitment fees, having workers work excessive hours without days off, and withholding passports (Impactt Limited).

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<sup>2</sup> See The Independent, October 3, 2017, “World Cup 2022: Qatar's workers are not workers, they are slaves...,” [www.independent.co.uk](http://www.independent.co.uk) (accessed February 23, 2019). Or the Guardian's “Slavery in Focus” series for representative examples.

All of the GCC states have implemented economic nationalization programs (generally nicknamed according to the model “Saudization,” for Saudi Arabia, or “Emirization,” for the UAE, etc.) out of concern for the detrimental impacts of their foreign labor dependency on the employment rates of the native population. These programs are intended to encourage policies that develop the human capital of the indigenous workforce by expanding educational opportunities and by imposing requirements to hire a minimum fixed percentage of native workers on firms operating within the country’s borders. These programs also include development goals for the country as a whole, which generally consist of policies to attract investment and encourage growth in industries other than natural resource extraction.<sup>3</sup> This study specifically examines the impact of the policies designed to attract FDI on the number of migrants in the GCC countries.

### **3.2 Foreign Ownership Restrictions**

A cursory glance at the history of GCC investment policy reveals a constant trend towards financial liberalization after an initial period of enforcing protectionist measures with the aim of encouraging domestic industry.

Currently, all GCC members impose varying degrees of restrictions on foreign ownership of enterprises within their borders, although these restrictions have been loosened considerably in recent years. These restrictions are limited to certain industries in some countries, and in most countries are now absent in special economic zones. Because this paper’s analysis depends upon changes in investment law to define

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<sup>3</sup> See Saudi Arabia’s “Vision 2030” goals at [vision2030.gov.sa/en](http://vision2030.gov.sa/en) or the UAE’s “Sustainable Development Goals” at <https://www.government.ae/en/about-the-uae/leaving-no-one-behind> for representative examples.

treatment and control groups, what follows is a country by country overview of foreign ownership policy. This overview includes a distinction between the general commercial environment in each of the Gulf states and that of their special economic zones (SEZs).<sup>4</sup>

*Bahrain:* The current law dictating the framework of foreign investment in Bahrain is Royal Decree no. 21 of 2001, issued by the Amir Hamed Al Khalifa. This law repealed the Commercial Companies Law of 1975. Article 65 of the Decree provides the Ministry of Commerce and Industry with the authority to set limits on foreign capital in domestic industries and to block the trade of foreign capital on the Bahraini stock exchange. Part XIV of the Decree (articles 345 - 350) outlines the regulations on foreign owned enterprises, including the requirements that a Bahraini sponsor them, and that copies of all relevant documents be provided in Arabic. However, as of 2016, outside of the range of dates studied here, Bahrain opened many sectors to 100% foreign ownership (US Department of State 2018).

*Kuwait:* In 2013, Kuwait updated its investment law by establishing the Direct Investment Promotion Authority. This authority was granted broad powers over investment policy in Kuwait under the condition that it conduct studies demonstrating its policies' efficacy in attracting investors (and that such studies be shared with investors). The law charges the Authority with setting capital requirements for investment, granting licenses to investment projects, and establishing SEZs. Unlike the rest of the GCC, Kuwait's FDI law does not set upper bounds on foreign investment in any sector, and explicitly protects foreign assets from seizure. So, under the 2013 law, Kuwait's country-

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<sup>4</sup> The investment laws of Bahrain and Kuwait are not available in English translations, and were read in Arabic for this study.

wide investment policy compares closely to SEZs in the rest of the GCC (Law no. 116 of 2013 on Encouraging Direct Investment in Kuwait).

*Saudi Arabia:* The earliest foreign investment law currently in effect in Saudi Arabia is Royal Decree M/1, passed in 2000. It superseded the investment law in place since 1978, and granted companies under whole or partial foreign ownership essentially the same legal rights as Saudi firms. However, the law does provide for the Supreme Economic Council to limit that activities of foreign enterprises at the Council's discretion. A 2004 law left the framework of the 2000 law intact, but allowed for foreigners to buy domestic enterprises and stipulated minimum investments by industry. The updated law reiterated the right of the General Investment Authority to limit the percentage of foreign ownership of companies operating in Saudi Arabia (The Executive Rules of the Foreign Investment Act).

*Oman:* Royal Decree No. 102 of 1994 officially abrogated the investment law of 1974, and banned foreign ownership of shares in businesses operating in Oman exceeding 49% of total shares in the project. However, the law allowed the Minister of Commerce and Industry to raise the limit to 65% upon receiving a recommendation from the Foreign Capital Investment Committee. Furthermore, contingent upon receiving a recommendation from the Minister of Commerce and Industry, the Development Council may remove the limit entirely, provided that the Council determines that the project promotes the national interest in development. The law also exempts new foreign enterprises from taxation for a period of five years, and leaves open the possibility that any restrictions be lifted or imposed by royal decree.

*United Arab Emirates:* Until 2018, the UAE had among the strictest investment laws in the GCC, in that it did not allow generally complete foreign ownership, except for in SEZs. The 2018 Federal Law by Decree No. 19 Regarding Foreign Direct Investment opened most industries to FDI and complete foreign ownership, with the explicit intention of promoting investment and diversifying the nation's industrial base. It also established the Foreign Direct Investment Committee which is charged with stimulating investment in the Emirates. This committee also enjoys the privilege of defining the activities in which complete foreign ownership is or is not permitted.

*Qatar:* The investment law of Qatar, promulgated in 2000, represents one of the more stringent investment policies in the GCC (Law no. 10 of 2000). In general, a foreign entity may not hold more than a 49% stake in any Qatari enterprise unless it both receives the permission of the Minister of Finance (who must decide that the project matches the Development Plan of the State of Qatar) and fits into one of a specified number of types of industries (i.e., agriculture, industry, health, education, tourism, and the development and exploitation of natural resources). Investment in the fields of banking and insurance, and owning real estate are strictly prohibited under the law. Instead, long term projects may only rent land on 50 year leases.

Overall, since the mid-1990's, the GCC has loosened restrictions on foreign ownership in their domestic economy, with nearly all states allowing complete foreign ownership in at least some industries. However, the specifics of the investment laws are always left out of the legal framework. For example, they are determined by executive committees or royal decree, leaving some degree of arbitrary uncertainty around the details of the laws and their long-term enforcement. Despite this trend of liberalizing



investment policy, many restrictions on foreign ownership of enterprises operating inside national borders remain in place throughout the GCC. These restrictions are usually lifted in SEZs.

### 3.3 Special Economic Zones

One of the first steps towards financial market liberalization that all GCC countries have taken since 1985 is to establish SEZs in major cities or at ports. This analysis is particularly concerned with which countries allow complete foreign ownership of enterprises operating within their SEZs, and when they first introduced a policy allowing such ownership. Unfortunately, since the specific details of GCC investment policies are all set through executive committees rather than through legislative processes, the SEZ policies in most Gulf states are not recorded in the legal code (Kuwait in an exception in this regard, having passed a law. See below). Therefore, this paper relies on government websites and the financial consulting firm websites to construct the following country-by-country overview of SEZs in the GCC.

*Bahrain:* Bahrain established its first SEZ, the Bahrain Logistics Zone, near the Khalifa bin Salman port in 2001. It has since established two others: one at the Bahrain International Airport, and the one called the Bahrain International Investment Park. All three offer 100% foreign ownership, ten-year corporate tax exemptions, and five year exemptions from employment restrictions to investors. In addition, they eliminate import duties, which allows duty-free access to the rest of the GCC (Meed Consultants 2013).

*Kuwait:* Kuwait established its first free trade zone (the Kuwait Free Trade Zone) in 1995 via Decree-Law no. 26 of 1995 Concerning Free Trade Zones. It is the only SEZ

in the GCC established by law and not through a planning committee. This SEZ offers 100% foreign ownership to investors as well as permanent tax exemptions.

*Saudi Arabia:* Saudi Arabia has proposed four SEZs, referred to as economic cities, which have not commenced operations at the time of this writing. These are expected to offer benefits similar to those of other countries SEZs, like relaxed employment restrictions and full foreign ownership of enterprises (although possibly not of land) (Daher 2011). Because these SEZs are not yet operating, Saudi Arabia is considered the control group in this study.

*Oman:* The four SEZs currently operating in Oman have been established pursuant to the Omani Vision 2020 plan, first presented in 1995. The initial zone, Al Mazunah, began operation in 1995. All four zones offer 100% foreign ownership, reduced hiring requirements, and tax holidays that can be extended indefinitely by increasing the share of Omani workers employed (Chekarov).

*United Arab Emirates:* The UAE established the first SEZ in the GCC, the Jebel Ali Free Zone, in 1985. The free zone offers 100% foreign ownership, a 50-year tax exemption, and no import tariffs (Europe Emirates Group). The UAE has since opened as many as 45 different SEZs.

*Qatar:* In preparation for hosting the 2022 World Cup, Qatar established its first system of SEZs, called Manateq (Arabic for 'areas') in 2011. Among the benefits to investors are 100% foreign ownership, relaxed taxes, and a wide variety of logistical support services.

## **4. Methodology**

In order to explore the impact of FDI on labor migration to the Arab Gulf states, and consequently whether or not more lenient investment policies contribute to the stated goal of workforce indigenization held by each GCC member, this study uses a difference-in-differences multiple regression model. Migrant stocks serve as the dependent variable, while FDI, two dummy variables representing the introduction of policies that allow total foreign ownership of domestic enterprises (one representing the counterfactual and the other the treatment effect), and a trend variable serve as the independent variables. Data for net FDI Inflows (balance of payments, current USD) and total migrant stocks were collected from the World Bank's World Development Indicators database. If the estimated model returns positive coefficients on the effects of FDI and foreign ownership, this would imply that the policies are not having their intended effects, and that increased foreign investment causes migration to exceed its trend. Negative coefficients would imply a substitution between FDI and immigrant labor, and therefore support financial liberalization as a means of developing the domestic workforce and discouraging immigration.

### **4.1 Target Population**

This paper focuses on the Gulf Cooperation Council member nations, because of their high degree of similarity relative to each other, and their unique character relative to the rest of the world. All six members are oil exporting economies, and four, Saudi Arabia, Kuwait, the United Arab Emirates, and Qatar, have all been OPEC members since the late 1960's (although Qatar terminated its membership in January, 2019) (OPEC). The other two GCC states, Oman and Bahrain, receive between 68-85% and 85% of their government revenues from petroleum exports respectively (CIA World Factbook).

In addition to petroleum exports dependency, the GCC countries are also all heavily reliant upon foreign workers. Saudi Arabia has the smallest concentration of foreign migrants in its population at 32% as of 2015, and the UAE had the highest concentration at 88% (World Bank). Due to these high levels of immigration and coincident with high unemployment rates amongst native populations, all of the members have instituted official nationalization programs (as discussed above). This study addresses in part the effectiveness of the financial liberalization portion of these programs.

The GCC member states also share a number of general cultural and political similarities that will help to control for the effects of institutional variations on people's decisions to migrate to the Gulf. In fact, the GCC charter opens with an explicit recognition of the institutional similarities and common goals of the member countries:

“Being fully aware of the ties of special relations, common characteristics and similar systems founded on the creed of Islam which bind them; and Desiring to effect coordination, cooperation and integration between them in all fields; and, Having the conviction that coordination, cooperation, and integration between them serve the sublime objectives of the Arab Nation ...”

All of the members are Arabic-speaking monarchies that recognize Islam as their official state religion, and Sharia as the source of legislation in their constitutions.<sup>5</sup> In short, for economic, social, and political reasons, the GCC members are easy to compare statistically regarding the impacts of specific policies.

## 4.2 Data

This study draws its quantitative data from the World Bank's World Development Indicators (WDI) database. This database hosts the most detailed set of immigration and investment estimates for the target countries, going back to 1970 and ending in 2015. However, even this dataset is incomplete, so the temporal scope of this study is limited by data availability. The WDI database has only posted estimates of international migrant stocks (IMS) residing in each GCC country every five years starting from 1970. Estimates for net FDI inflows (henceforth denoted FDI) are in current USD and presented annually, but only extend back to 1970 (1971 for Bahrain). Table 3 gives summary statistics for both FDI in millions of dollars, and IMS by country. The regression estimate of IMS on FDI and the foreign ownership policy lags FDI one year behind IMS. In this case, IMS for 1970 cannot be included, since FDI estimates do not precede 1970. Therefore, the analysis begins with  $FDI_{1974}$  and  $IMS_{1975}$ , and each country will have nine observations, for a total sample size of 54 observations.

## 4.3 Foreign Ownership

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<sup>5</sup> See their respective constitutions at [constitute project.org](http://constituteproject.org)

To specifically account for the effects of liberalizing investment policy, this study will define treatment and control groups by introducing a dummy variable representing the year that each country first allowed 100% foreign ownership of enterprises operating out of its special economic zones. The financial liberalization variable is denoted according to the form POST and takes either the value 0 (years prior to allowing full foreign ownership in an SEZ) or 1 (years post-policy enactment). In 1985, the UAE became the first country to introduce a free trade zone permitting full foreign ownership and the remaining GCC states have each introduced similar zones and policies in the intervening years (Table 2).

**Table 1: Summary Statistics by Country**

Country	Variable*	Mean	Std dev	Median	Min	Max
<b>Bahrain</b>	FDI	157	397	83.1	-418	1,050
	IMS	272,311	238,104	189,595	37,946	704,137
<b>Oman</b>	FDI	125	975	102	-2,170	154
	IMS	536,103	529,464	421,821	62,804	1,844,978
<b>Qatar</b>	FDI	862	1,560	52.2	4.88	4,670
	IMS	545,605	566,824	334,725	68,339	1,687,640
<b>UAE</b>	FDI	2,790	4,620	56.8	-506	10,900
	IMS	2,637,468	2,846,466	1,565,346	65,827	8,095,126
<b>Saudi Arabia</b>	FDI	4,680	9,850	1,180	-3,190	29,200
	IMS	4,710,958	3,168,161	5,060,574	356,996	1.02*10 <sup>7</sup>
<b>Kuwait</b>	FDI	189	406	11.8	0.250	1,300
	IMS	1,252,965	683,214	1,101,016	463,366	2,866,136
	n	60	60	60	60	60

\*FDI is in millions of USD

**Table 2: Financial Liberalization Variable POST by Year**

Year	Bahrain	Oman	Qatar	UAE	Saudi Arabia	Kuwait
1970	0	0	0	0	0	0
1975	0	0	0	0	0	0
1980	0	0	0	0	0	0
1985	0	0	0	1	0	0
1990	0	0	0	1	0	0
1995	0	0	0	1	0	1
2000	0	1	0	1	1	1
2005	1	1	0	1	1	1
2010	1	1	0	1	1	1
2015	1	1	1	1	1	1

Saudi Arabia's values in POST represent a counterfactual case in which it introduced an SEZ with 100% foreign ownership in 2000. Saudi Arabia updated its FDI law at that time, but neither included as strong of incentives to investors as the other GCC countries have in their respective FDI laws, nor introduced any SEZs. Because Saudi Arabia does not permit total foreign ownership and its SEZs have yet to commence operations, it will serve as a control for the period of the study. This will be represented by a treatment group dummy variable (TREAT), that is valued at 1 for every country except for Saudi Arabia. Saudi Arabia's values of TREAT are 0 for every year.

#### **4.4 The Regression Model**

A difference-in-differences model is used to measure the impact of FDI on total migrant stocks in each GCC country after the introduction of a policy permitting full foreign ownership in special economic zones. Since all countries have at least three



observations prior to the adoption such a policy, the model should include sufficient observations to compare the policy effects to a counterfactual without its adoption. Additionally, the countries are similar enough in their political and economic structures to allow for cross-sectional comparison between the countries that needs not account for other external factors. The model is given by:

$$IMS_{country,t} = \alpha + \alpha_{country} + \beta_1 FDI_{country,t-1} + \beta_2 POST_{country,t} + \delta POST * TREAT + \gamma t + \varepsilon_{country}$$

In this equation,  $\alpha$  represents the constant error term for the dependent variables, and  $\alpha_{country}$  is the fixed-effect capturing country-specific variation. The term “ $\beta_1 POST$ ” represents the policy effect with respect to the counterfactual observations of Saudi Arabia.  $\delta POST * TREAT$  is the interaction term representing the true case in which Saudi Arabia serves as the control to determine the differential effect of foreign ownership policies on migration. The final term, “ $\gamma t$ ” captures the effect of the trend variable “ $t$ ,” or the passing of time from 1975 to 2015 on IMS.

The estimated coefficients for net FDI and the interaction variable for foreign ownership policy measure the impact of immigration to the GCC. These results offer some preliminary insights to the efficacy of liberalization as a component of the council’s labor nationalization campaigns. The specific null hypothesis of interest is  $H_0: \delta = 0$ . A coefficient less than 0 would imply that the policy effectively discourages immigration to the GCC countries. A second null hypothesis,  $H_0: \beta_0 = 0$  with  $\beta_0$  less than 0 would imply a substitution effect between FDI and IMS.

## 5. Results

### 5.1 Policy Effects

First, the regression was estimated without the FDI variable in order to analyze the policy impact before controlling for FDI. This regression of IMS on POST, the interaction term, and the trend term without controlling for FDI found a significant interaction effect in the negative direction (Table 3). It also estimated a highly significant trend coefficient ( $p = .000$ ) implying that another phenomenon likely plays a role in the growth of migrant populations.

To estimate the role of FDI in the policy's effect, the complete model (given in section 4.4) was estimated twice. First with the natural logs of IMS and net FDI to estimate the elasticity of IMS to changes in net FDI, and second with the raw number of immigrants and net FDI in hundreds of millions of dollars (see Table 4). The log-linear model estimation did not find significant results for either the interaction term or FDI, and both of those estimated coefficients were positive. The linear model, on the other hand, did find an inverse correlation between the policy that was significant at the  $p = .01$  level. The estimate of the linear model did not, however, find an inverse correlation

between IMS and net FDI. Instead, it found a nearly significant ( $p = .062$ ) direct correlation.

**Table 3: Regression of IMS on Policy**

Variable	Coefficient (Std Dev)	Test Statistic* (p-value)
Constant	$-1.73 \times 10^8$ ( $3.33 \times 10^7$ )	-5.21 (.000)
POST	2609722 (847551.2)	3.08 (.003)
POST*TREAT	-3550286 (820124.1)	-4.33 (.000)
t	87899.09 (16777.16)	5.24 (.000)
R <sup>2</sup> Overall	.5094	27.40 (.000)
R <sup>2</sup> Within Country	.6171	
R <sup>2</sup> Between Countries	.4830	
n	60	60

\*t statistic for coefficients, and F statistic for R<sup>2</sup>

**Table 4: Regression of IMS on FDI**

Variable	Log-Linear Model		Linear Model	
	Coefficient (Std. Dev.)	Test Statistic* (p-value)	Coefficient (Std. Dev.)	Test Statistic* (p-value)
Constant	-115.7215 (10.27824)	-11.26 (.000)	-1.82*10 <sup>8</sup> (3.86*10 <sup>7</sup> )	-4.73 (.000)
FDI	.1572073 (.1860937)	0.84 (.403)	6288.459 (3277.334)	1.92 (.062)
POST	-.5185374 (.2373157)	-2.19 (.034)	1555214 (862067)	1.80 (.078)
POST*TREAT	.3302676 (.2420184)	1.36 (.179)	-2589795 (870319.7)	-2.98 (.005)
t	.0630792 (.0057257)	11.02 (.000)	92373.8 (19437.08)	4.75 (.000)
R <sup>2</sup> Overall	.2744	83.97 (.000)	.4916	20.11 (.000)
R <sup>2</sup> Within Country	.8842		.6464	
R <sup>2</sup> Between Countries	.7729		.4689	
n	54	54	54	54

\*t statistic for coefficients, and F statistic for R<sup>2</sup>

## 5.2 Robustness Checks

To check for endogeneity of FDI in the interaction term, a nearly identical model is estimated with net FDI taking the place of the independent variable and IMS as a dependent variable. This estimation employs all 60 observations. Since IMS lags FDI by one year and net FDI values are available for all countries from 1971 to 2016, all IMS observation can be included from 1970 to 2015. The estimation of both log-linear and linear variants of this model found significant inverse correlations between net FDI and the interaction term. These results indicate both that FDI is endogenous to the policy and that the introduction of the policy corresponds with lower net FDI than might otherwise be expected.

A final robustness check replaced net FDI with the Penn World Table's estimates of total capital stocks (in ppp 2011 USD) in the estimated log-linear model. This estimation found no correlation between the interaction term and IMS, although this might be explained by the endogeneity of capital to the policy (Table 6). It did, however, find a positive correlation between capital and labor. This result agrees with the estimates in Table 4, but again contradicts macroeconomic theory predicting an inverse relationship.

**Table 5: Regression of FDI on IMS**

Variable	Log-Linear Model		Linear Model	
	Coefficient (Std Dev)	Test Statistic* (p-value)	Coefficient (Std Dev)	Test Statistic* (p-value)
Constant	14.42603 (9.950548)	1.45 (.153)	-511.7651 (1012.878)	-0.51 (.616)
IMS	.0372178 (.064804)	0.57 (.568)	$7.21 \times 10^{-6}$ ( $3.44 \times 10^{-6}$ )	2.09 (.041)
POST	.416551 (.1414319)	2.95 (.005)	-53.69353 (23.59107)	-2.28 (.027)
TREAT*POST	-.4498511 (.1344739)	-3.35 (.002)	-53.69353 (23.59107)	-2.28 (.027)
t	.0041165 (.005376)	0.77 (.447)	.2573609 (.5118475)	0.50 (.617)
R <sup>2</sup> Overall	.4530	8.37 (.000)	.5268	9.98 (.000)
R <sup>2</sup> Within Country	.4012		.4440	
R <sup>2</sup> Between Countries	.7022		.8921	
n	60	60	60	60

\*t statistic for coefficients, and F statistic for R<sup>2</sup>

**Table 6: Regression of Capital Stocks on IMS**

Variable	Coefficient (St. Deviation)	Test Statistic* (p-value)
Constant	-80.41157 (14.02125)	-5.73 (.000)
Capital Stocks	.3128608 (.0923383)	3.39 (.001)
POST	-.3183128 (.2141271)	-1.49 (.144)
TEAT*POST	-.0002619 (.2158155)	-0.00 (.999)
t	.0453141 (.0074727)	6.06 (.000)
R <sup>2</sup> Overall	.7761	106.83 (.000)
R <sup>2</sup> Within Country	.9066	
R <sup>2</sup> Between Countries	.9646	
n	54	54

\*t statistic for coefficients, and F statistic for R<sup>2</sup>

## 6. Conclusion

Overall, this study produced several contradictory results, but generally indicates that SEZs and liberal investment policies have either contributed to or coincided with a negative deviation from the immigration trend. The proposed mechanism, a substitution effect between migrant labor and invest, however, cannot explain the effect of these policies. These findings open many possibilities for further research.

### 6.1 Empirical Results

The preliminary regression, without net FDI, strongly implied that SEZs with full foreign ownership contributed to reduced immigration. The results of the complete model, on the other hand, found an insignificant but positive effect in the log-linear model and a significant negative effect in the linear model. Since the log-linear model fails to corroborate the implication of the linear model, the finding that financial liberalization decreases the trend in migration is not very robust.

The endogeneity test found a significant inverse correlation between FDI and the SEZ policy. This might help to explain why other tests indicate a direct relationship between IMS and investment, but it also implies that the policy does not actually attract FDI. Since the FDI values used in this are net, it could also indicate that the policy or another contemporaneous policy encourages more investment abroad than it attracts.



The most surprising result of this study is the estimated complementary effect between investment and migration. Whether investment is measured by net FDI or total capital stocks, the estimated models always return positive coefficients for the investment term. Of course, since the trend coefficient is small but significant in the IMS on FDI estimations, the FDI coefficient may reflect an unobserved confounding variable that more properly belongs to the trend effect.

## **6.2 Implications for Further Research**

This study attempted to justify the parallel trends assumption necessary for a difference-in-differences analysis with a qualitative comparison of GCC economies and governing institutions. Future research might justify this with a more rigorous analysis of trends prior to the policies introduction. Unfortunately, any study of the Gulf economies is limited by the availability of data, and it may be difficult to find significant results with few observations.

Additionally, the unexpected complementarity of immigration and invest in the GCC case require further research. First, a separate study on their relationship should be conducted to confirm my findings. Such a study would ideally distinguish between skilled and unskilled workers, since the lack of this distinction may have confounded my results. Then, should their complementarity be replicated for unskilled workers, this would need a new theoretical justification. Otherwise, a study with more controls for relevant macro variables like oil prices or natural resource rents may find the predicted substitution effect.

Of course, GCC policy does not only affect the GCC member, and the effects of policy discouraging immigration on the sending countries is also warranted. Since these countries have a vested interest in receiving remittances, their policies may encourage emigration and their responses to GCC policy may be confounding the estimated correlation between IMS and FDI.

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