

ECONOMIC  
RESEARCH  
FORUM



منتدى  
البحوث  
الاقتصادية

2018

# working paper series

LABOR MARKET POLICIES AND  
FDI FLOWS TO GCC COUNTRIES

Wasseem Mina

Working Paper No. 1201

# **LABOR MARKET POLICIES AND FDI FLOWS TO GCC COUNTRIES**

Wasseem Mina<sup>1,2,3</sup>

**Working Paper 1201**

**May 2018**

**Send correspondence to:**

Wasseem Mina  
United Arab Emirates University  
[wmina@uaeu.ac.ae](mailto:wmina@uaeu.ac.ae)

---

<sup>1</sup> Department of Economics and Finance, College of Business and Economics, United Arab Emirates University, PO Box 15551, Al Ain, UAE. Research Fellow, Economic Research Forum. *Email:* [wmina@uaeu.ac.ae](mailto:wmina@uaeu.ac.ae); [wmina2004@aol.com](mailto:wmina2004@aol.com). Tel: +971503383120

<sup>2</sup> I wish to thank Louis Jaeck for his contribution to the literature review section in an earlier version of this paper.

<sup>3</sup> The author declares complete independence and has no competing interests, financial or non-financial.

First published in 2018 by  
The Economic Research Forum (ERF)  
21 Al-Sad Al-Aaly Street  
Dokki, Giza  
Egypt  
[www.erf.org.eg](http://www.erf.org.eg)

Copyright © The Economic Research Forum, 2018

All rights reserved. No part of this publication may be reproduced in any form or by any electronic or mechanical means, including information storage and retrieval systems, without permission in writing from the publisher.

The findings, interpretations and conclusions expressed in this publication are entirely those of the author(s) and should not be attributed to the Economic Research Forum, members of its Board of Trustees, or its donors.

## Abstract

The six oil-rich Gulf Cooperation Council (GCC) countries adopted interventionist labor policies in the early 1990s to increase employment of nationals and control expatriate labor mobility. In the second half of the 2000s the GCC countries switched to market-oriented, flexible labor policies, intended to equate the cost of national and expatriate labor and enhance expatriate labor mobility. After the 2011 Arab Spring, the GCC labor policy responses had differed.

In this paper we empirically examine the impact of market-oriented labor policies on FDI flows to the GCC countries for the period 2007-2015. Using panel data model and accounting for unobservable country effects, results show that cooperative labor employer relations, flexible hiring and firing practices, linking pay to productivity, and reliance on professional management encourage FDI flows to the GCC countries. Robustness checks show a positive influence of at least one dimension of labor market flexibility on FDI flows. This evidence lends support to the influence that flexible labor market policies have on FDI flows. The latter is perceived as key to income diversification in the GCC countries.

**JEL Classifications:** J4, J3, J5, J6, F2

**Keywords:** Labor market policies, labor market institutions, FDI, GCC, panel data models.

## ملخص

اعتمدت دول مجلس التعاون الخليجي الست الغنية بالنفط سياسات التدخل في أوائل التسعينيات من أجل زيادة توظيف المواطنين وضبط حركة العمالة الوافدة. لكن في النصف الثاني من العقد الأول من القرن الحالي، تحولت دول مجلس التعاون الخليجي إلى سياسات عمل مرنة موجهة نحو السوق، تهدف إلى مساواة تكلفة العمالة الوطنية والمغتربين وتعزيز حركة العمالة الوافدة. ولكن بعد الربيع العربي عام 2011، اختلفت استجابات سياسة العمل في دول مجلس التعاون الخليجي. في هذه الورقة، ندرس بشكل عملي تأثير سياسات العمل الموجهة نحو السوق على تدفقات الاستثمار الأجنبي المباشر إلى دول مجلس التعاون الخليجي للفترة 2007-2015. وباستخدام نموذج بيانات الفريق وتعليل الآثار القطرية غير القابلة للملاحظة، تبين النتائج أن علاقات التعاون بين أرباب العمل والعمالة، وممارسات التوظيف والاستغناء عن العاملين، وربط الأجر بالإنتاجية، والاعتماد على الإدارة المهنية تشجع تدفقات الاستثمار الأجنبي المباشر إلى دول مجلس التعاون الخليجي. كما تظهر عمليات التحقق من الصلابة تأثيراً إيجابياً على بعد واحد على الأقل من أبعاد مرونة سوق العمل والذي يتمثل في تدفقات الاستثمار الأجنبي المباشر. ويدعم هذا الدليل تأثير سياسات سوق العمل المرنة على تدفقات الاستثمار الأجنبي المباشر والتي ينظر إليها على أنها مفتاح تنويع الدخل في دول مجلس التعاون الخليجي.

## 1. Introduction

Reliance on oil has exposed the six oil-rich Gulf Cooperation Council (GCC) countries – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE - to the perils of world oil price volatility and the global business cycle. In addition, it has segmented the labor markets into two. One segment is for the government and public sector jobs, while the other is for the private sector jobs (Cammett and Posusney 2010; Forstenlechner and Rutledge 2010; Hertog 2014).

In the first segment, demand is mostly for national labor and wages are high, thanks to oil revenues.<sup>4</sup> In addition to high wages, job security and generous retirement plans are provided.<sup>5</sup> In the second segment, labor originates mostly in the labor abundant Arab and Asian countries, providing a highly elastic labor supply. Demand for labor originates from private firms owned by nationals but managed by expatriates. The interaction of demand and supply in this market segment results not only in low wages but also in unprotected employment. Oil price booms of the early 1970s and the small GCC countries population size have contributed to the increased employment of expatriates in the private labor market segment and of both nationals and expatriates in the government/public labor market segment (Cammett and Posusney 2010).

Labor market segmentation and education quality have generated massive national youth unemployment. ILO estimates show that the GCC average share of youth unemployment in total unemployment is higher than that for lower and upper middle income countries. In GCC countries, it amounts to 44.3 percent compared to 39.8 percent for lower and upper middle income countries.<sup>6</sup>

Aiming at reducing the socially destabilizing unemployment problem, the GCC countries have adopted labor market policies, which aim to encourage the employment of nationals in private sector. Between the early 1990s and mid-2000s, the GCC labor authorities adopted first-generation, interventionist labor policies. These policies mandated that in each sector certain quotas be filled by nationals (Forstenlechner and Rutledge 2010; Hertog 2014). Quotas had a limited success though and led to an uneven distribution of cost across businesses, quota evasion and in some cases corruption between businesses and labour administration (Hertog 2011). First-generation labor policies also impacted expatriate labor. They restricted expatriate labor mobility through the sponsorship system. Sponsorship system attaches expatriate labor to an “importing” employer.<sup>7</sup> First generation policies have been criticized for reducing the efficient allocation of labor in the GCC economies (Hertog 2014).

Starting mid-2000s, the GCC countries have adopted second-generation, market-based policies. These policies impose fees on private sector employers for the recruitment of expatriate labor. Fees are then used to subsidize wages of nationals employed in private sector. The underlying rationale of these policies is to reflect the true economic cost of expatriate labor and reduce the hiring cost gap between national and expatriate labor. Also the sponsorship system is amended to allow expatriate labor mobility and enhance labor market competition.

Besides reforming labor market policies to address the unemployment problem, GCC countries have also relied on attracting FDI to create job opportunities and reduce unemployment. FDI potential employment benefit has been supported in a number of regions. In Latin America, Vacaflores (2011) finds that inward FDI has a positive and significant effect on employment

---

<sup>4</sup> For wage determination in the UAE, for example, see Abdalla et al. (2010).

<sup>5</sup> The GCC welfare systems are considered among the most generous in the world (Forstenlechner and Rutledge 2010). Nationals also benefit from free education and health care, in addition to family, housing and transportation allowances (Cammett and Posusney 2010). These positive incentives act as the primary transmission mechanism of a social contract in the oil-rich monarchies. The social contract refers to the distribution of hydro-carbon wealth to GCC citizens (Forstenlechner and Rutledge 2010).

<sup>6</sup> ILO estimates the share of youth unemployment in total unemployment in 2014 at 31.7 percent in Bahrain, 63.9 percent in Kuwait, 50.7 percent in Oman, 47.4 percent in Qatar, 41.8 percent in Saudi Arabia, and 30.4 percent in UAE.

<sup>7</sup> More discussion of the sponsorship (kafala) system can be found in Cammett and Posusney (2010), Longva (1999), and Sassanpour et al. (1997).

generation, mainly due to the effect on male labor force. The positive effect is particularly important in countries with high levels of informality and low average FDI inflows. In Central Europe, FDI has contributed to the restructuring of Central European economies and to employment preservation and generation (Radosevic et al 2003). In the Czech Republic, Dinga and Munich (2010) find that FDI reduces the unemployment rate by 1.7 percentage points. In Fiji, Jayaraman and Singh (2007) find that FDI contributes to employment creation and economic growth.

Realizing FDI employment benefits, GCC countries have worked on attracting inward FDI. FDI net inflows to GCC countries reached a peak of US\$ 53 billion in 2008 from US\$1.5 billion in 2001. However, they declined to US\$14 billion in 2015.

Two logical issues arise from the above discussion. The first is the impact of FDI on employment generation in GCC countries. An empirical examination of this issue would shed the light on the contribution of FDI flows to reducing the socially destabilizing unemployment problem. However, due to paucity of employment data across the GCC countries, undertaking such analysis empirically becomes infeasible.

The second logical issue is whether labor policies have contributed to attracting inward FDI to GCC countries. Addressing this question empirically is feasible due to data availability on (aggregate) FDI flows and performance of labor market institutions (LMIs). Labor market policies carve the latter. Available LMI data cover cooperation in labor-employer relation, flexibility of hiring and firing practices, wage determination flexibility, linking pay to productivity, the costs of laying off labor, and reliance on professional management.

This paper empirically examines whether market-oriented labor policies have attracted inward FDI flows. We use panel data for the period 2007-2016, an empirical model that explains FDI flows in terms of host country location advantages, and an estimation methodology that accounts for unobservable country effects. Results show that second-generation, market-oriented labor policies, as measured by the degree of cooperation in labor-employer relations, flexibility of hiring and firing practices, linking pay to productivity, and reliance on professional management, have a positive impact on inward FDI flows.

The paper extends our knowledge about GCC labor markets and the LMI-FDI nexus in two main respects. First, it adds to our knowledge about labor market segmentation in GCC countries by assessing the contribution of private sector to employment of nationals. It also highlights the different GCC labor policy responses to the post Arab Spring period in order to fend off social unrests. Second, it empirically examines the influence of labor policies on inward FDI flows in GCC countries. To the best of our knowledge, no study has empirically examined this relationship in the resource-rich GCC countries before.

The paper is organized as follows. Section 2 elaborates on labor market segmentation and policy reforms in specific GCC countries over time. Section 3 briefly surveys the literature on the relationship between LMIs and FDI. Section 4 specifies the empirical model building on the location advantage hypothesis of Dunning (1981) and the data sources used. Section 5 raises the empirical issues and the consequent estimation methodology. Sections 6 and 7 present the empirical results and robustness checks, while section 8 concludes.

## **2. Labor Market Segmentation and Policy Reforms**

### **2.1 First generation labor policies**

Between the early 1990s and mid-2000s, the GCC labor authorities adopted first-generation, interventionist labor policies, which included the imposition of employment quotas for nationals in private sector and the adoption of an expatriates sponsorship system (Forstenlechner and Rutledge 2010; Forstenlechner et al. 2012; Hertog 2014).

Under the quota system, private employers employ nationals according to percentages specified by national labor authorities. These percentages differed by business sectors. Businesses adhering to these quotas have complained that high wages and low productivity of nationals reduce profits.<sup>8</sup> Other businesses have evaded these quotas through illegal phantom employment (Hertog 2014).

The labor sponsorship (Kafala) system attaches expatriate labor to an “importing” employer or labor agency and restricts its mobility in labor market. Restricting labor mobility reduces the opportunity of expatriate labor to improve skills and productivity and obtain higher wages in other jobs.<sup>9</sup> In addition, the sponsorship system has created a black market for foreign labor through which “nominal sponsors” can procure and release labor as “self-employed” in the informal sector in return for rents to sponsors (Hertog 2014).

Both the quota and sponsorship systems have been viewed as exploitative and discriminatory against expatriate labor. Both are viewed to have fostered wage inequality in the labor market. Expatriates are paid low wages due to the highly elastic labor supply in Arab and Asian labor markets, while nationals are paid high wages based on social as opposed to economic factors (Abdalla et al. 2010).

## **2.2 Second generation labor policies**

Labor market distortions have induced labor authorities to consider second generation, market-oriented policies.<sup>10</sup> Bahrain and Oman, for example, have taken steps to reform their labor policies.<sup>11</sup> These reforms aim to reduce quotas and eliminate the sponsorship system.

Bahrain had imposed a quota system on the private sector before its 2007 labor market reform, where newly established companies had to first employ 20 percent of its labor as nationals. Companies had to gradually increase the quota to 50 percent. In 2007, Bahrain embarked on labor policy reforms aiming at ending labor market segmentation through ending quotas, eliminating cost differentials between national and expatriate labor, and giving equal rights and choices to both.<sup>12</sup> To increase the relative attractiveness of national labor and eliminate the cost differential between national and expatriate labor, a two-year work visa fee as well as a monthly fee have been imposed on private sector firms. Proceeds are used to provide training to Bahrainis in order to upgrade their skills and enhance productivity. The sponsorship system was abolished in the summer of 2008 allowing mobility of expatriate labor to new employers, resulting in expatriate labor wage increase, and the improvement of national labor competitiveness.

Similar to Bahrain, Oman has abolished the sponsorship system since late 2006. In addition, the government has adopted a two-tier policy, which aims at improving the competitiveness of national labor. First, it has imposed a 7-percent tax on wages, the proceeds of which are used to finance training of nationals. Second, it has subsidized on-job training for nationals conditional on their subsequent employment in private firms.

---

<sup>8</sup> Marchon and Toledo (2014) and Barnett et al. (2015) examine theoretically the impact of binding quotas on production in the UAE. They show that a binding quota is equivalent to a labor tax, increasing labor and production costs and output prices, and decreasing production. An increase in labor cost and a reduction in production reduce the demand for national labor. Naidu et al. (2016) examine the impact of the 2011 UAE reform of one aspect of the sponsorship system, which is allowing any employer to renew the expatriate labor's visa upon contract expiration without the written consent of the initial employer. The reform reduces firms' monopsony power, the demand for and earnings of *new* expatriate labor.

<sup>9</sup> With the decline in labor productivity, the sponsorship system may have contributed to lower levels of private investment.

<sup>10</sup> A comprehensive review of GCC labor policy reforms is beyond the scope of this paper. See Hertog (2014) for a review of country specific labor policy revisions.

<sup>11</sup> Both countries have the highest private sector employment share in total employment among GCC countries, as discussed below.

<sup>12</sup> Hertog (2014) points out that quota was reduced but not entirely abolished.

The switch to market-oriented labor policies may have contributed to attracting inward FDI flows to GCC countries. The empirical evidence of sections 6 and 7 supports the positive impact these policies have in 2007-2015.

### 2.3 Labor market segmentation and employment of nationals

Labor market segmentation in the GCC countries has deleteriously affected the government ability to increase employment of nationals in the private sector. Due to the high (social) wage rates paid to nationals in the government and public sector, nationals have developed high reservation wages resulting in reduced labor force participation and employment in private sector.

Labor market statistics show that the average wage rate for a national is a multiple of that of an expatriate. For example, in Bahrain the average monthly wage for a national in the private sector was threefold that of an expatriate (BD614 compared to BD207) in 2011. In Saudi Arabia, the average monthly wage for a national in 2015 amounted to more than a fourfold of an expatriate (SR4,967 compared to SR1,194).<sup>13</sup>

The high wage rate of nationals have reduced their share in private sector employment (Table 1). In Bahrain, nationals amount to 18 percent of private sector employment, on average. In Oman and Saudi Arabia, the percentage drops to 13 percent, while in Kuwait it amounts to 6.5 percent. In Qatar, only 1.8 percent of private sector employment is accounted for by nationals.

**Table 1**  
**Employment of Nationals and the Share of Private Sector Employment**

	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia
<b>Employment of Nationals (% private sector employment)</b>					
	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia
2008	19.0	.	.	.	.
2009	18.1	.	15.3	.	9.9
2010	17.8	6.5	15.7	1.9	10.4
2011	17.4	6.7	13.5	.	10.9
2012	.	6.6	11.6	.	13.4
2013	.	6.8	11.0	.	15.2
2014	.	6.3	11.6	.	15.5
2015	.	6.3	.	1.8	16.4
<b>Private Sector Employment (% total employment)</b>					
2008	91.5	.	.	.	.
2009	91.6	.	86.6	.	.
2010	92.0	52.60	87.4	.	.
2011	92.1	53.60	87.5	.	.
2012	.	54.70	88.5	.	.
2013	.	55.50	88.7	.	.
2014	.	56.80	88.0	.	.
2015	.	57.60	.	.	.

Sources: Bahrain: Central Bank of Bahrain's Statistical Indicators; Kuwait: Central Bank of Kuwait Economic Report; Oman: Central Bank of Oman's Annual Report; Qatar: Ministry of Development Planning and Statistics' Census; Saudi Arabia: Ministry of Labor's Annual Statistical Yearbook. "." indicates data unavailability. No public data is available for the UAE.

<sup>13</sup> Using the current nominal exchange rate of BD1=US\$2.65, this amounts to US\$1,625 compared to US\$549. Similarly, for Saudi Arabia, using the current exchange rate of SR1=US\$0.27, this amounts to US\$1,341 compared to US\$322.

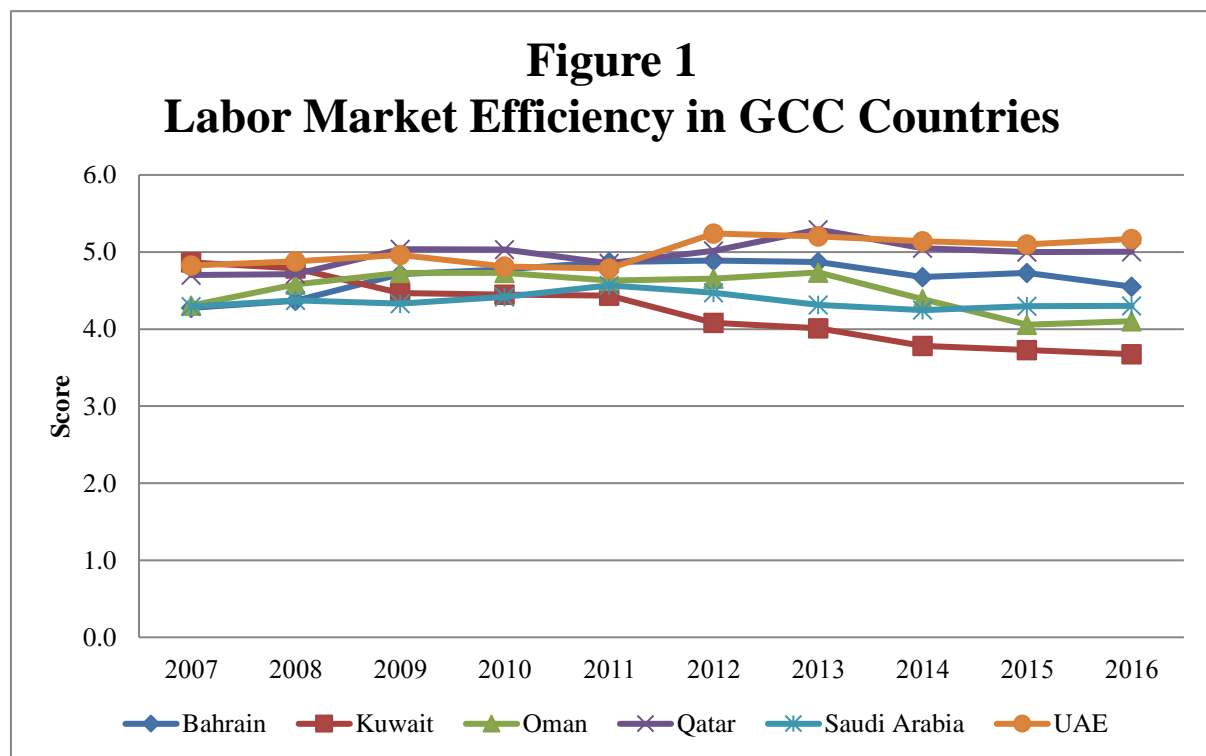


Statistics also show variation in importance of private sector employment across GCC countries. In Bahrain and Oman, private sector employment has accounted on average for about 92 and 88 percent of total employment, respectively, as table 1 shows. In Kuwait, private sector employment has accounted for more than half of total employment (55 percent).

The above statistics highlight one important labor market observation. The share of nationals in private sector employment is low and declining, despite the importance of private sector employment in Bahrain, Oman and Kuwait. In the case of Saudi Arabia, however, the share of Saudi nationals in private sector employment has been on the rise from about 10 percent in 2009 to slightly above 16 percent in 2015, as table 1 shows.

#### 2.4 GCC labor policy responses to the Arab Spring

The uprisings that swept many Arab countries in late 2010 and 2011 have spurred GCC labor market policy responses. As the World Economic Forum’s Global Competitiveness Index data on labor market efficiency shows (Figure 1), market efficiency has increased in some countries but declined in others. For example, in Bahrain, Qatar and the UAE the post-2011 average performance was higher than the pre-2011 average performance, while in Kuwait, Oman and Saudi Arabia the opposite was observed. Clearly, in fending off social unrest, GCC countries have considered labor market reforms.



A detailed look at the labor market efficiency index components reveal time variation across the GCC countries (Table 2). The labor-employer relations have become more cooperative and less confrontational in the post uprising period in Bahrain, Qatar and UAE. Wage determination has become more at the company level in Oman, Saudi Arabia and the UAE. In Bahrain, Qatar, Saudi Arabia and the UAE improvements have been made regarding hiring and firing procedures, linking pay to productivity, and selecting professional management based objectively based on merits. Hiring and firing procedures have become more flexibly determined by employers as opposed to regulations. Pay has been more linked to labor productivity compared to the pre-2011 period. Management of firms has become more selected based on its qualifications and merits as opposed to kinship and friendship. With the exception

of Bahrain and Oman, the cost of advance notice requirements, severance payments, and penalties due when terminating a redundant worker has been significantly cut. The detailed inspection of these individual components suggests an improvement in Saudi labor market policies the overall labor market efficiency index does not convey.

**Table 2**  
**GCC Labor Market Performance in the Pre- and Post-Arab Uprising Periods**  
**(Period Average)**

	2007-2010	2012-2016	Change
<b>Labor Market Efficiency</b>			
Bahrain	4.5	4.7	+
Kuwait	4.6	3.9	
Oman	4.6	4.4	
Qatar	4.9	5.1	+
Saudi Arabia	4.4	4.3	
UAE	4.9	5.2	+
<b>Cooperation in labor-employer relations, 1-7 (best)</b>			
Bahrain	4.4	5.1	+
Kuwait	4.8	4.5	
Oman	5.0	4.9	
Qatar	5.0	5.5	+
Saudi Arabia	4.8	4.7	
UAE	5.2	5.4	+
<b>Flexibility of wage determination, 1-7 (best)</b>			
Bahrain	5.9	5.8	
Kuwait	5.8	5.4	
Oman	5.2	5.4	+
Qatar	6.1	6.0	
Saudi Arabia	5.5	5.8	+
UAE	6.0	6.1	+
<b>Hiring and firing practices, 1-7 (best)</b>			
Bahrain	3.5	4.3	+
Kuwait	4.1	3.8	
Oman	4.1	3.5	
Qatar	4.5	5.2	+
Saudi Arabia	4.2	4.4	+
UAE	4.8	5.0	+
<b>Pay and productivity, 1-7 (best)</b>			
Bahrain	4.4	4.6	+
Kuwait	4.3	3.6	
Oman	4.6	4.0	
Qatar	4.9	5.3	+
Saudi Arabia	4.5	4.6	+
UAE	4.9	5.1	+
<b>Redundancy costs, weeks of salary</b>			
Bahrain	4.0	4.3	+

	2007-2010	2012-2016	Change
Kuwait	69.2	28.1	
Oman	4.1	4.3	+
Qatar	69.0	23.2	
Saudi Arabia	80.0	19.5	
UAE	83.9	4.3	
<b>Reliance on professional management, 1-7 (best)</b>			
Bahrain	4.6	4.7	+
Kuwait	4.0	3.6	
Oman	4.9	4.8	
Qatar	5.3	5.5	+
Saudi Arabia	4.5	4.7	+
UAE	5.0	5.4	+

Notes: + indicates improvement except for redundancy costs where it indicates an increase in weeks of salary

### 3. Literature Review

In analyzing the impact of labor market characteristics on FDI flows, the early academic literature has focused on the impact of labor cost as part of the firm's production cost. The conventional assumption is that foreign investors are rational agents seeking to minimize production costs. Studies have mainly used the average wage rate and unit labor cost as measures of labor cost. For instance, Culem (1988) analyzed bilateral flows of direct investments among six industrialized countries (US, Germany, France, UK, Netherlands and Belgium) and showed that unit labor cost of the host country is a deterrent to FDI, a result Cheng and Kwan (2000) reached in estimating the determinants of FDI in 29 Chinese regions.

Although wage cost is a direct component of labor cost, other indirect components are influenced by LMIs. LMIs refer to the rules and regulations that govern the functioning of labor markets, including employment protection legislation (EPL), trade union activities, and minimum wage legislations. EPL includes the flexibility of dismissal and notice and severance payment. LMIs are considered flexible when labor market outcomes are the result of free market mechanism, without any regulation imposed by the governments or trade unions (Whyman and Baimbridge 2006). They affect both wage and non-wage costs. Specifically, the more protective EPL, the higher the non-wage labor costs are.

Many studies have analyzed the relationship between LMIs and FDI flows, hypothesizing that rigid institutions would be detrimental to inward FDI flows through their effects on increased non-wage cost. Using firm-level data in 14 Western and 5 Central and Eastern European countries, Javorcik and Spatareanu (2005) investigate the influence of the degree of labor market flexibility and the difference in such flexibility in host and home countries on the location of foreign subsidiaries and aggregate firm-level FDI flows, respectively. They find a positive relationship between labor market flexibility, whether absolute or in country difference terms, on the one hand and the probability of locating FDI in the host country and FDI inflows on the other. Using panel data on bilateral FDI stocks and employment protection indices for OECD countries, Dewit et al. (2009) find that for a given level of employment protection in the home country, a higher level of employment protection in the host country discourages home country firms from investing abroad. The absolute level of employment protection in the home country is also negatively correlated with outward FDI, exhibiting an "anchorage effect." In addition, a strong union density has a negative impact on inward FDI. Similar to Javorcik and Spatareanu (2005), Olney (2011) examines the influence of EPL on U.S. outward investment in 26 OECD countries, and finds that a reduction in EPL increases FDI. Delbecque et al. (2014) analyze French firms' expansion strategies in 77 countries during 1992-2001 and

find that stringent EPL and a generous unemployment benefit system in the host country negatively impact firms' location decisions. The effect of EPL is modest however compared to the impact of market potential. Analyzing FDI flows from Japan to 29 OECD countries using annual data for the period 1989-2000, Lee (2003) finds that EPL has a negative impact on Japanese FDI shares in host countries. Surprisingly, his study demonstrated that countries exhibiting a centralized bargaining structure attract more Japanese FDI than countries with a more decentralized one. Walsh and Yu (2010) find that flexible LMI have a positive effect on FDI flows to secondary sectors in a sample of 26 middle and high income economies over the period 1985-2008 using datasets from UNCTAD's Global Investment Reports and World Bank's WDI.

While the above studies find a negative relationship between rigid LMIs and FDI, other studies fail to reach a similar conclusion on the basis that rigid institutions increase labor productivity or are less important to foreign investor's objective of overcoming trade barriers. Using International Labor Organization labor market standards and World Bank's labor market regulatory indicators, Parcon (2008) analyzes FDI flows to 195 countries during 1990-2005 and finds evidence that labor market standards exert negative and positive impact on FDI flows. Labor market standards increase firms' total variable costs and thus decrease FDI inflows – a cost channel. On the other hand, they decrease firm's marginal costs and increase productivity – a productivity channel. She also finds that some labor market standards promote human capital development reinforcing the productivity channel and enhance political and social stability. Both effects encourage FDI inflows.

More recently, Mogab et al. (2013) examine the effects of labor market rigidities on FDI flows using firm-level data for European Multinational Enterprises investment in 41 European countries during 2005-2008. They focus on the influence of three labor market indicators: the rigidity of hours' index, the firing costs, and the difficulty of hiring index. They find that the rigidity of working hours indicator is negatively correlated to FDI inflows for all countries taken together. However, when controlling for country classification, they find that the indicator of rigidity in firing is unexpectedly positively related to FDI inflows in non-transition economies for three of the four years studied. Interestingly, when taking all European countries together, they find that increased rigidity in the labor market hiring indicator increased the probability of FDI investment. These results suggest that foreign investors may have different objectives for investing in host countries, such as avoiding trade barriers or reducing production costs compared to the home country, and that flexible LMIs may not necessarily attract more FDI.

#### **4. Empirical Model and Data**

The empirical model adopted in this paper builds conceptually on the FDI location advantage hypothesis of Dunning's (1981) ownership-location-internalization (OLI) paradigm. According to the OLI paradigm, a firm produces abroad building on three types of advantages: ownership (O), location (L), and internalization (I). A firm's ownership advantages arise from its possession of intangible assets, such as technology, patents, and skilled management. The firm itself does not possess location advantages but rather the host economy it invests in. For example, the host economy may enjoy attractive macroeconomic factors (large market size and potential, openness to trade and capital flows, developed financial markets and infrastructure) as well as microeconomic factors (cheap skilled labor, friendly business environment and LMIs). The internalization advantage emanates from the firm's own engagement in production abroad rather than relying on the market, in the form of licensing or subcontracting for example, because of the higher transaction costs of the latter.

Accordingly, the empirical model is expressed as:

$$FDI_{i,t} = \beta_0 + \beta_1 GROWTH_{i,t} + \beta_2 FINANCE_{i,t} + \beta_3 INFRASTRUCTURE_{i,t} + \beta_4 LABOR_{i,t} + \beta_5 INSTITUTIONS_{i,t} + \beta_6 OIL_{i,t} + \varepsilon_{i,t} \quad (1)$$

where *FDI* is FDI inflows (log). FDI (aggregate) flows data are used for three purposes. First, compared to stocks, FDI flows would tend to be relatively closer to bilateral or sectorial FDI data, and therefore may better reflect the influence of LMIs on them. Second, flows are used to reduce the problem of non-stationarity associated with FDI stock data, which can result in spurious correlation. Third, expressing FDI flows in log form helps policy makers understand the consequent impact of the variables in percentage change. This is more straightforward to grasp compared to discussing the impact on FDI flows relative to GDP.

*Growth* is market potential as measured by real GDP growth rate. Rapidly growing economies provide foreign investors with better opportunities for making profit compared to slow growth economies (Chakrabarti 2001). Chakrabarti (2001) reports positive growth influence on FDI flows in Bandera and White (1968), Lunn (1980), Schneider and Frey (1985), Culem (1988), Billington (1999), and Choe (2003). *Growth* is therefore expected to have a positive influence on FDI flows.

*Finance* is the degree of financial development as measured by total value of stocks traded as a percentage of GDP. Ang (2008; 2009a), Al Nasser and Gomez (2009), and Agbloyor et al. (2013) find a positive relationship between the degree of financial development and FDI in Malaysia and Thailand. While not examining the effect of financial development on FDI, Alfaro et al. (2004; 2009; 2010) find that well-developed financial markets enhance the efficiency of FDI and boost economic growth, a result that Durham (2004), Choong et al. (2005), Ang (2009b), Lee and Chang (2009), Wang and Wong (2009) and Choong (2012) also obtain. We expect to have a positive *Finance* coefficient.

*Infrastructure* is the degree of infrastructure development as measured by the number of fixed telephone subscriptions (log). This reflects the degree of development of telecommunications infrastructure. The positive relationship between infrastructure development and FDI is found in Cheng and Kwan (2000), Urata and Kawai (2000), Zhang (2001), Asiedu (2002), Roberto (2004), Dupasquier and Osakwe (2006), Mollick et al. (2006), Majocchi and Strange (2007), Demekas et al. (2007), Kang and Lee (2007), Mina (2007), Ang (2008), Pantelidis and Nikolopoulos (2008), Bellak et al. (2008), Kinda (2010), and Jimenez (2011). We expect a positive relationship between infrastructure development and FDI.

*Labor* is the degree of flexibility of LMIs. Flexibility is measured by the cooperation in labor-employer relations (log), which is one pillar of labor market efficiency of the World Economic Forum's Global Competitiveness Index (GCI). The cooperation in labor-employer relations refers to the nature of relation between the two whether it is cooperative or confrontational. The highest score is 7 for a cooperative relation, while the lowest score is 1 for a confrontational relation. This indicator can reflect the development of labor market policies from first- to second-generation labor policies. A confrontational relation may arise from imposition of quotas on private sector employers and a restricting sponsorship system.

We will also use hiring and firing procedures as an alternative measure of flexibility (log). Hiring and firing procedures refer to whether these procedures are flexibly determined by employers or by regulations. The highest score is 7 for employer-determined procedures and the lowest score is 1 for regulations-determined procedures. We should note that cooperation and hiring and firing procedures are highly correlated to each other with a correlation coefficient of 0.8.

The sign of *Labor* coefficient is difficult to predict *a priori*. A number of studies have highlighted a positive relationship between efficiency of LMIs in European and middle income

countries (Javorcik and Spatareanu 2005; Delbecque et al. 2014; Walsh and Yu 2010). These results were driven by the high non-wage costs, associated with labor market rigidities, which in turn discourage FDI flows. By adding extra costs to foreign investors, GCC first-generation, labor nationalization policies would similarly discourage FDI flows. Therefore we would expect a negative relationship between LMIs and FDI flows. However, having a positive relationship between LMIs and FDI flows is also a possibility. The GCC second-generation, market-oriented labor policies tend to reduce labor costs, increase profit, and enhance FDI inflows. Thus we cannot predict the sign of the *Labor* coefficient *a priori*.

*Institutions* is the quality of domestic institutions as measured by International Country Risk Guide (ICRG)'s corruption (log). Corruption assesses the degree of corruption within the political system. The highest score, which indicates least corruption, is 6. In the FDI literature it is found that better domestic institutional functions, including less corruption, encourage FDI (Wei 2000; Habib and Zurawicki 2002; Voyer and Beamish 2004; Asiedu 2006; Egger and Winner 2006; Benassy-Quere et al. 2007; Busse and Hefeker 2007; Daude and Stein 2007; Naudé and Krugell 2007; Mina 2007, 2009 and 2011; Mishra and Daly 2007; Du et al. 2008; Yerrabati and Hawkes 2016). On the other hand, Egger and Winner (2005) finds that corruption provides incentive to FDI. Similarly, Jalil et al. (2016) finds a positive effect of corruption on FDI in Africa and Asia but not in Latin America. We expect a positive relationship between (less) corruption and FDI flows.

*Oil* is oil production measured by total production of oil and other liquids in thousands of barrels per day (log).<sup>14</sup> Asiedu (2006) finds that natural resources, measured by the share of fuel and minerals in exports, has a positive impact on FDI in Africa. Examining outward FDI, Buckley et al. (2007), Kolstad and Wiig (2012), and Ramasamy et al. (2012) find that natural resource endowments is an important factor in driving China's outward FDI. In the case of GCC countries, Mina (2007) finds that oil production and reserves have a negative influence on inward FDI flows to GCC countries. Aleksynska and Havrylchyk (2013) find that natural resources reduce the negative effect of institutional distance on FDI inflows. Despite the positive effect of natural resources on FDI flows, the negative empirical evidence of Mina (2007) for the GCC countries seem to be more relevant in this research. Accordingly, it is more likely to observe a negative coefficient of *Oil a priori*.

Data on FDI inflows, market potential, the degrees of financial and infrastructure development are obtained from the World Bank's WDI. Data on LMI are obtained from the World Economic Forum's Global Competitiveness Index. Data on institutions are obtained from the International Country Risk Guide. Data on oil production are obtained from the Energy Information Administration.

## **5. Empirical Issues and Estimation Methodology**

Unobserved country specific effects are a source of endogeneity, which results in inconsistent OLS estimates. These effects are controlled for using a fixed effects model for GCC countries, subject to confirmation of Hausman specification test. Another source of endogeneity in the empirical model is reverse causality between FDI flows and the explanatory variables. It is possible that foreign investors lobby GCC governments for elimination of quotas or that expatriates lobby for enhanced labor mobility across jobs. To detect potential reverse causality, we use a Granger-causality test. This test is for detection of limited causality. Test results do not reject the null hypothesis that FDI inflows do not cause *Labor* variables, as shown in table 3. Neither do they reject the null for the other explanatory variables. Accordingly, we focus on endogeneity arising from the presence of unobserved country effects and use fixed effects model.

---

<sup>14</sup> We should note that oil production and trade openness (as measured by the sum of exports and imports relative to GDP) are strongly correlated to each other with a correlation coefficient of -0.4.

**Table 3**  
**Granger Causality Test Results**

	Obs.	F-Statistic	Prob.
<i>Growth</i>	42	0.470	0.629
<i>Finance</i>	36	1.285	0.291
<i>Infrastructure</i>			
Fixed telephone subscriptions	42	0.220	0.803
Fixed broadband subscriptions	42	0.129	0.880
<i>Labor</i>			
Cooperation in labor-employer cooperation	42	2.287	0.116
Hiring and firing practices	42	0.030	0.970
<i>Institutions</i>	42	0.593	0.558
<i>Oil</i>	42	0.244	0.785

Notes:  $H_0$ : Dependent variable does not Granger cause the explanatory variable. Eviews is used to undertake a stacked (common coefficients) panel causality test with a lag length of 2 periods.

For robustness, we will use alternative estimation methodology - feasible generalized least squares estimation (FGLS) methodology - to account for heteroskedasticity and autocorrelation in the error term. Second, we will check robustness of model specification using an alternative dependent variable (FDI flows as a percent of world total) and alternative LMI measures. In addition, we allow for regional political instability arising from the Arab Spring and GCC trade openness.

## 6. Empirical Results

An examination of inward FDI flows over the sample period shows that Saudi Arabia and the UAE have the highest levels of net FDI inflows with averages of more than US\$20 billion and US\$8 billion, respectively (Table 4). Relating the figures to GDP still confirms Saudi Arabia's leading position with an average of 3.9 percent of GDP. Bahrain and Qatar have higher FDI shares than the UAE, Oman and Kuwait.

**Table 4**  
**FDI Performance across GCC Countries**

Country	Obs.	Mean	Std. Dev.	Min	Max
(Net FDI inflows in US\$ billion)					
Bahrain	9	0.680	0.979	-1.463	1.794
Kuwait	9	1.207	1.178	-0.006	3.259
Oman	9	1.381	1.696	-2.692	3.332
Qatar	9	2.653	2.846	-0.840	8.125
Saudi Arabia	9	20.332	12.427	8.012	39.456
UAE	9	8.251	3.645	1.134	14.187
Total	54	5.751	8.788	-2.692	39.456
(Net FDI inflows % GDP)					
Bahrain	9	2.623	3.692	-4.700	8.082
Kuwait	9	0.824	0.735	-0.004	2.116
Oman	9	2.464	3.099	-3.854	7.918
Qatar	9	2.524	3.007	-0.423	8.308
Saudi Arabia	9	3.900	2.975	1.063	8.496
UAE	9	2.506	1.352	0.447	5.500

Total	54	2.473	2.716	-4.700	8.496
-------	----	-------	-------	--------	-------

Table 5 shows the OLS, FGLS and FE estimation results, though our focus is on the FE results.<sup>15</sup> *Growth* coefficient suggests the presence of a positive relationship between market potential and inward FDI flows as expected. A one percentage point increase in the growth rate is associated with an increase in FDI flows by 0.1 percent, as columns 3 and 6 show.

**Table 5**  
**Estimation Results - Dependent variable: FDI Flows (log)**

	OLS	FGLS	FE	OLS	FGLS	FE
<i>Growth</i>	<b>0.091a</b>	<b>0.077a</b>	<b>0.102c</b>	<b>0.084a</b>	<b>0.071a</b>	<b>0.103c</b>
	(0.025)	(0.019)	(0.043)	(0.025)	(0.020)	(0.040)
<i>Finance</i>	0.004	0.002	<b>0.009b</b>	0.003	0.002	<b>0.011b</b>
	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)
<i>Infrastructure</i>	<b>0.929a</b>	<b>0.828a</b>	0.348	<b>0.856a</b>	<b>0.697a</b>	0.509
	(0.176)	(0.183)	(0.599)	(0.183)	(0.201)	(0.420)
<i>Labor - Cooperation</i>	<b>3.081c</b>	<b>3.471b</b>	<b>5.676b</b>			
	(1.762)	(1.496)	(1.730)			
<i>Labor - Hiring</i>				1.141	<b>1.854b</b>	<b>2.981b</b>
				(1.055)	(0.791)	(0.911)
<i>Institutions</i>	<b>-1.448b</b>	<b>-1.320b</b>	-0.551	-1.142	<b>-1.068c</b>	-0.410
	(0.662)	(0.642)	(0.761)	(0.683)	(0.649)	(0.702)
<i>Oil</i>	0.055	0.130	-2.321	0.074	0.154	-1.948
	(0.101)	(0.110)	(1.693)	(0.100)	(0.107)	(1.431)
Constant	-15.944a	-15.681a	3.726	-12.077a	-11.392a	3.433
	(3.432)	(2.568)	(11.051)	(1.942)	(1.852)	(7.130)
Observations	48	48	48	48	48	48
R-squared	0.774		0.455	0.763		0.433
Number of Countries		6	6		6	6
<i>F</i> test	<b>33.14a</b>		<b>5.02a</b>	<b>24.90a</b>		<b>4.59a</b>
Wald test		<b>112.07a</b>			<b>89.18a</b>	

Notes: Robust standard errors in parentheses. "a", "b", and "c" indicates statistical significance at the 1, 5, and 10 percent levels, respectively. *F* test statistics are provided for the non-robust estimates.

The degree of financial development, *Finance*, is also positively associated with FDI flows as expected. Although the coefficient is statistically significant at the 5 percent level, its economic significance is small. The coefficient amounts to about one hundredth of a percentage point. *Labor*, the variable of interest in this paper, shows a positive and significant coefficients, both statistically and economically, whether for cooperation in labor-employer relation or for hiring and firing practices. As column 3 shows, an increase in the degree of cooperation by 1 percent increases FDI flows by more than 5.5 percent. Similarly, an increase in the degree of hiring and firing flexibility by 1 percent increases inward FDI flows by nearly 3 percent, as column 6 shows. The results are consistent with Javorcik and Spatareanu (2005), Delbecque et al. (2014), and Walsh and Yu (2010).

*Institutions*, which as a variable measures the quality of domestic institutions, shows a negative relationship with FDI flows. In particular, FDI nourishes on corruption – the greasing hand argument. However, FE estimates show statistically insignificant coefficients. OLS and FGLS

<sup>15</sup> Hausman specification test confirm the adoption of fixed as opposed to random effects model.



methodologies, which do not account for the unobserved country effects, in contrast yield statistically significant coefficients in three of the four regressions.

Finally the FE estimate of oil production, *Oil*, shows a negative but statistically insignificant coefficient. This is similar to the negative relationship that Mina (2007) finds though our estimates are statistically insignificant. OLS and FGLS estimates, in contrast, show a positive yet insignificant coefficients similar to the FE estimate.

## 7. Robustness Checks

Our strategy for robustness checks focuses on model specification whether for the dependent or explanatory variables. Our first check expresses FDI flows as a share of world total to control for world FDI competition. The second check uses alternative LMI measures. The third and fourth account for political instability arising from the 2011 Arab Spring and GCC trade openness, respectively.

Table 6 shows the estimation results when FDI flows are expressed as *percentage of world FDI flows*. Data on this variable are obtained from UNCTAD. Changing model specification in this manner allows us to control for global FDI competition. Compared to the results of table 5, having more flexibility in hiring and firing practices allows the GCC countries to attract a higher world share. The coefficient in column 6 suggests that an increase in flexibility by 1 percent increases world FDI share by half a percentage point. In contrast the cooperation in labor-employer relation does not have a statistically significant influence.

**Table 6**

**Robustness Check – Dependent variable: FDI flows (% World total)**

	OLS	FGLS	FE	OLS	FGLS	FE
<i>Growth</i>	<b>0.019a</b>	<b>0.013b</b>	<b>0.017b</b>	<b>0.017a</b>	<b>0.013a</b>	<b>0.018b</b>
	(0.005)	(0.006)	(0.006)	(0.005)	(0.004)	(0.006)
<i>Finance</i>	<b>-0.004c</b>	-0.002	<b>0.002c</b>	<b>-0.004c</b>	-0.001	<b>0.003a</b>
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)
<i>Infrastructure</i>	<b>0.169a</b>	<b>0.137a</b>	-0.064	<b>0.148a</b>	<b>0.096b</b>	-0.038
	(0.049)	(0.052)	(0.106)	(0.051)	(0.046)	(0.042)
<i>Labor - Cooperation</i>	<b>0.839c</b>	0.411	0.560			
	(0.462)	(0.315)	(0.345)			
<i>Labor - Hiring</i>				<b>0.497c</b>	<b>0.544a</b>	<b>0.560b</b>
				(0.257)	(0.130)	(0.193)
<i>Institutions</i>	-0.098	-0.112	0.079	-0.075	-0.114	0.075
	(0.241)	(0.151)	(0.089)	(0.238)	(0.149)	(0.072)
<i>Oil</i>	-0.014	0.002	-0.218	-0.013	0.001	-0.237
	(0.025)	(0.020)	(0.271)	(0.022)	(0.019)	(0.209)
Constant	-3.245a	-2.231a	1.532	-2.353a	-1.813a	1.379
	(0.855)	(0.784)	(1.599)	(0.546)	(0.515)	(0.899)
Observations	50	50	50	50	50	50
R-squared	0.381		0.294	0.392		0.358
Number of countries		6	6		6	6
<i>F</i> test	<b>5.77a</b>		<b>2.64b</b>	<b>5.52a</b>		<b>3.52a</b>
Wald test		<b>24.63a</b>			<b>38.22a</b>	

Notes: Robust standard errors in parentheses. “a”, “b”, and “c” indicates statistical significance at the 1, 5, and 10 percent levels, respectively. *F* test statistics are provided for the non-robust estimates.

Table 7 provides the fixed effects estimation results using alternative measures of LMI flexibility. The estimation results for linking pay to productivity and reliance on professional management suggest a positive relationship to FDI flows, though marginally statistically significant. Coefficients suggest an increase in each of these two measures by 1 percent increases FDI inflows by about 3.5 percent and 4.5 percent, respectively. Therefore, cooperation in labor-employer relations, flexibility in hiring and firing practices, linking pay to productivity, and reliance on professional management have positive influence on FDI flows.

**Table 7**  
**Fixed Effects Estimation Results - Dependent variable: FDI Flows (log)**

	<b>Flexibility</b>	<b>Wage Determination</b>	<b>Redundancy Costs</b>	<b>Pay and Productivity</b>	<b>Professional Management</b>
<i>Growth</i>	<b>0.089c</b>	<b>0.093c</b>	<b>0.091c</b>	<b>0.098b</b>	<b>0.082c</b>
	(0.039)	(0.040)	(0.039)	(0.036)	(0.039)
<i>Finance</i>	<b>0.008c</b>	0.007	<b>0.009c</b>	<b>0.011b</b>	<b>0.013c</b>
	(0.003)	(0.004)	(0.004)	(0.003)	(0.005)
<i>Infrastructure</i>	0.062	0.078	0.327	0.044	-0.201
	(1.143)	(1.287)	(1.534)	(0.906)	(1.267)
<i>Labor</i>	1.552	-2.590	0.036	<b>3.359c</b>	<b>4.369c</b>
	(3.479)	(3.341)	(0.283)	(1.602)	(2.036)
<i>Institutions</i>	-0.091	-0.058	0.320	-0.374	-0.108
	(0.930)	(0.939)	(0.974)	(0.804)	(1.057)
<i>OIL</i>	-1.185	-0.895	-1.464	-0.667	-1.423
	(1.944)	(1.676)	(2.302)	(1.448)	(2.061)
Constant	5.759	10.366	6.301	-0.272	6.445
	(12.577)	(11.050)	(25.943)	(6.946)	(12.727)
Observations	48	48	44	48	48
R-squared	0.329	0.337	0.248	0.378	0.423
Number of countries	6	6	6	6	6
<i>F</i> test	<b>2.94b</b>	<b>3.04b</b>	1.75	<b>3.65a</b>	<b>4.4a</b>

Notes: Robust standard errors in parentheses. “a”, “b”, and “c” indicates statistical significance at the 1, 5, and 10 percent levels, respectively. *F* test statistics are provided for the non-robust estimates.

Two additional robustness checks are undertaken. The first check accounts for the political instability arising from the Arab uprisings of 2011, as discussed in section 2.4. The empirical model includes a dummy variable for the Arab Spring, which takes a value of 1 in 2011, and an interaction term with the alternative LMI measures. Fixed effects estimation results, presented in table 8, show a positive influence on FDI inflows of cooperation in labor-employer relations, hiring and firing practices, linking pay to productivity, and reliance on professional management. Interestingly the positive coefficient of the Arab Spring dummy in all but the first specification suggests that political instability in Arab Spring countries has been beneficial to GCC countries in terms of FDI inflows. This positive influence is statistically significant in specifications including flexibility in hiring and firing practices and laying off costs.

**Table 8**  
**Robustness Check: Inclusion of Arab Spring dummy and an interaction term with LMI**  
**Fixed Effects Estimation Results - Dependent variable: FDI Flows (log)**

	<b>Cooperation</b>	<b>Hiring and Firing Practices</b>	<b>Flexibility</b>	<b>Wage Determination</b>	<b>Redundancy Costs</b>	<b>Pay and Productivity</b>	<b>Professional Management</b>
<i>Growth</i>	<b>0.104c</b>	<b>0.115b</b>	<b>0.089c</b>	<b>0.103b</b>	<b>0.134b</b>	<b>0.103b</b>	0.083
	(0.050)	(0.040)	(0.042)	(0.033)	(0.045)	(0.034)	(0.042)
<i>Finance</i>	<b>0.008b</b>	<b>0.010b</b>	<b>0.008c</b>	0.007	<b>0.009c</b>	<b>0.009b</b>	<b>0.012c</b>
	(0.002)	(0.003)	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)
<i>Infrastructure</i>	0.390	0.662	0.123	0.579	0.954	0.252	-0.202
	(0.749)	(0.654)	(1.156)	(0.994)	(1.627)	(1.076)	(1.357)
<i>Labor</i>	<b>5.977b</b>	<b>3.222b</b>	1.413	-2.560	0.266	<b>3.425c</b>	<b>4.505c</b>
	(2.254)	(0.818)	(3.386)	(3.345)	(0.360)	(1.600)	(2.092)
<i>Arab Spring</i>	-1.135	<b>4.335c</b>	6.214	16.665	<b>1.682a</b>	4.894	2.604
	(4.251)	(1.919)	(6.604)	(8.859)	(0.300)	(5.290)	(3.339)
<i>Labor*Arab Spring</i>	0.554	<b>-3.078c</b>	-4.083	-9.489	<b>-0.601b</b>	-3.291	-1.752
	(2.485)	(1.223)	(4.254)	(5.143)	(0.170)	(3.436)	(2.086)
<i>Institutions</i>	-0.556	-0.488	-0.131	-0.165	0.744	-0.503	-0.198
	(0.826)	(0.855)	(0.918)	(0.820)	(0.817)	(0.955)	(1.126)
<i>Oil</i>	-2.469	-2.002	-1.227	-1.332	-1.219	-0.763	-1.383
	(1.528)	(1.545)	(1.809)	(1.551)	(2.595)	(1.471)	(1.830)
Constant	3.797	1.478	5.515	6.769	-5.204	-2.349	6.079
	(12.204)	(6.849)	(12.875)	(7.987)	(29.131)	(8.122)	(13.827)
Observations	48	48	48	48	44	48	48
R-squared	0.466	0.461	0.336	0.365	0.355	0.392	0.436
Number of countries	6	6	6	6	6	6	6
<i>F</i> test	<b>3.71a</b>	<b>3.63a</b>	<b>2.15c</b>	<b>2.45b</b>	<b>2.06c</b>	<b>2.74b</b>	<b>3.28a</b>

Notes: Robust standard errors in parentheses. “a”, “b”, and “c” indicates statistical significance at the 1, 5, and 10 percent levels, respectively. *F* test statistics are provided for the non-robust estimates

The second check accounts for GCC trade openness, as measured by the sum of exports and imports of goods and services as a percent of GDP. The inclusion of trade openness reduces the influence of LMI to only two measures - flexibility of hiring and firing practices and linking pay to productivity – compared to the results of table 8 (Table 9). An examination of the correlation between trade openness and cooperation in labor and employer relations and reliance on professional management may explain why the latter two measures lost their statistical significance. The correlation coefficient for these variables are 0.36 and 0.27, respectively. It is possible because of multicollinearity that the inclusion of trade openness has reduced the statistical significance of these LMI measures.

**Table 9**  
**Robustness Check: Inclusion of trade openness**  
**Fixed Effects Estimation Results - Dependent variable: FDI Flows (log)**

	Cooperation	Hiring and Firing Practices	Flexibility	Wage Determination	Redundancy Costs	Pay and Productivity	Professional Management
<i>Growth</i>	0.085	<b>0.091c</b>	0.066	<b>0.082b</b>	<b>0.105c</b>	<b>0.082b</b>	0.064
	(0.044)	(0.038)	(0.035)	(0.031)	(0.050)	(0.027)	(0.038)
<i>Finance</i>	0.002	0.004	-0.000	-0.000	0.002	0.002	0.004
	(0.003)	(0.005)	(0.004)	(0.004)	(0.006)	(0.004)	(0.006)
<i>Infrastructure</i>	-0.492	-0.318	-0.816	-0.520	-0.395	-0.943	-1.078
	(0.785)	(0.838)	(0.696)	(0.971)	(1.302)	(0.860)	(0.868)
<i>Labor</i>	4.887	<b>2.741c</b>	-0.501	-2.908	0.189	<b>4.318c</b>	3.531
	(2.783)	(1.238)	(4.146)	(3.260)	(0.244)	(1.741)	(2.181)
<i>Arab Spring</i>	-1.126	2.031	<b>13.123b</b>	<b>14.521c</b>	0.643	4.517	4.377
	(3.259)	(1.059)	(3.800)	(6.618)	(0.654)	(2.574)	(2.884)
<i>Labor*Arab Spring</i>	0.471	<b>-1.608c</b>	<b>-8.644b</b>	<b>-8.375c</b>	-0.336	-3.178	-2.957
	(1.890)	(0.673)	(2.441)	(3.812)	(0.222)	(1.698)	(1.824)
<i>Institutions</i>	-0.973	-0.928	-0.823	-0.773	0.164	-1.281	-0.835
	(0.881)	(0.903)	(1.023)	(0.941)	(1.163)	(0.905)	(1.221)
<i>Oil</i>	-3.008	-2.706	-2.190	-2.191	-2.939	-1.690	-2.105
	(1.643)	(1.527)	(1.678)	(1.503)	(2.866)	(1.363)	(1.898)
<i>Trade</i>	0.021	0.021	0.027	0.025	<b>0.026c</b>	<b>0.028b</b>	0.023
	(0.011)	(0.011)	(0.014)	(0.013)	(0.011)	(0.010)	(0.012)
Constant	19.485	18.588c	25.790c	26.223c	23.643	16.725b	22.746b
	(12.494)	(7.943)	(12.462)	(11.790)	(25.131)	(4.690)	(8.298)
Observations	48	48	48	48	44	48	48
R-squared	0.554	0.553	0.484	0.502	0.487	0.561	0.545
Number of countries	6	6	6	6	6	6	6
<i>F</i> test	<b>4.55a</b>	<b>4.53a</b>	<b>3.44a</b>	<b>3.7a</b>	<b>3.06a</b>	<b>4.69a</b>	<b>4.39a</b>

Notes: Robust standard errors in parentheses. "a", "b", and "c" indicates statistical significance at the 1, 5, and 10 percent levels, respectively. *F* test statistics are provided for the non-robust estimate.

## **8. Conclusion**

In this paper we have discussed the evolution of labor market policies in GCC countries over time. GCC countries switched from first-generation interventionist labor policies to market-oriented policies. Realizing the role of FDI in job creation as supported by a number of studies on different regions and countries, the paper examines empirically the contribution of LMI shaped by labor policies to FDI flows in the GCC countries. Empirical evidence shows that cooperative labor employer relations, flexible hiring and firing practices, linking pay to productivity, and reliance on professional management encourage FDI inflows. These results lend support to the adoption of market-oriented policies; the switch to market mechanism has paid off in terms of attracting FDI.

This paper empirically examines whether market-oriented labor policies have attracted inward FDI flows. We use panel data for the period 2007-2016, an empirical model that explains FDI flows in terms of host country location advantages, and an estimation methodology that accounts for unobservable country effects. Results show that the second-generation, market-oriented labor policies, as measured by the degree of cooperation in labor-employer relations, flexibility of hiring and firing practices, linking pay to productivity, and reliance on professional management, have a positive impact on inward FDI flows.

This paper contributes to our knowledge about GCC labor markets and the LMI-FDI nexus in the context of resource-rich, labor market-segmented countries. The fundamental question about the influence of FDI on employment is yet to be addressed. It is left for future research.

## References

- Abdalla, I. M., M. A. Al-Waqfi, N. Harb, R. H. Hijazi, and T. Zubaidi. "Labour Policy and Determinants of Employment and Wages in a Developing Economy with Labour Shortage". *Labour*, 24 (2), 2010, 163–177.
- Agbloyor, E. K., J. Abor, C. K. D. Adjasi, and A. Yawson. "Exploring the Causality Links between Financial Markets and Foreign Direct Investment in Africa". *Research in International Business and Finance*, 28 (1), 2013, 118-134.
- Al Nasser, O. M., and X. G. Gomez. "Do Well-Functioning Financial Systems Affect the FDI Flows to Latin America?" *International Research Journal of Finance and Economics*, 1 (29), 2009, 60-75.
- Aleksynska, Mariya, and Olena Havrylchyk. "FDI from the South: The Role of Institutional Distance and Natural Resources." *European Journal of Political Economy*, 29, 2013, 38-53.
- Alfaro, L., A. Chanda, S. Kalemli-Ozcan, and S. Sayek. "FDI and Economic Growth: The Role of Local Financial Markets". *Journal of International Economics*, 64 (1), 2004, 89-112.
- Alfaro, L., A. Chanda, S. Kalemli-Ozcan, and S. Sayek. "Does Foreign Direct Investment Promote Growth? Exploring the Role of Financial Markets on Linkages". *Journal of Development Economics*, 91 (2), 2010, 242-256.
- Alfaro, L., S. Kalemli-Ozcan, and S. Sayek. "FDI, Productivity and Financial Development". *World Economy*, 32 (1), 2009, 111-135
- Ang, J. B. "Determinants of Foreign Direct Investment in Malaysia". *Journal of Policy Modeling*, 30 (1), 2008, 185-189.
- Ang, J. B. "Financial Development and the FDI-Growth Nexus: The Malaysian Experience." *Applied Economics*, 41 (13), 2009a, 1595-1601.
- Ang, J. B. "Foreign Direct Investment and Its Impact on the Thai Economy: The Role of Financial Development". *Journal of Economics and Finance*, 33 (3), 2009b, 316-323.
- Asiedu, E. "On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa different?" *World Development*, 30 (1), 2002, 107-119.
- Bandera, V. N. and J. T. White. "US Direct Investment and Domestic Markets in Europe". *Economia Internazionale*, 21, 1968, 117–233.
- Barnett, A. H., M. Malcolm, and H. Toledo. "Shooting the Goose that Lays the Golden Egg: The Case of UAE Employment Policy." *Journal of Economic Studies*, 42 (2), 2015, 285 – 302.
- Bellak, C., M. Leibrecht, and A. Riedl. "Labour Costs and FDI Flows into Central and Eastern European Countries: A Survey of the Literature and Empirical Evidence". *Structural Change and Economic Dynamics*, 19 (1), 2008, 17-37.
- Bénassy-Quéré, A., M. Coupet, and T. Mayer. "Institutional Determinants of Foreign Direct Investment". *The World Economy*, 30 (5), 2007, 764-782.
- Billington, N. "The Location of Foreign Direct Investment: An Empirical Analysis". *Applied Economics*, 31 (1), 1999, 65-76.
- Buckley, Peter J., L. Jeremy Clegg, and Adam R. Cross. "The Determinants of Chinese Outward Foreign Direct Investment". *Journal of International Business Studies*, 38 (4), 2007, 499-518.
- Busse, M. and C. Hefeker, "Political Risk, Institutions and Foreign Direct Investment". *European Journal of Political Economy*, 23 (2), 2007, 397–415.

- Cammett, M., and M. P. Posusney. "Labor Standards and Labor Market Flexibility in the Middle East: Free Trade and Freer Unions?" *Studies in Comparative International Development*, 45, 2010, 250–279.
- Chakrabarti, A. "The Determinants of Foreign Direct Investment: Sensitivity analyses of Cross-Country Regressions". *Kyklos*, 54 (1), 2001, 89-114.
- Cheng, L.K., and Kwan, Y. K. "What are the Determinants of the Location of Foreign Direct Investment? The Chinese Experience". *Journal of International Economics*, 51 (2), 2000, 379-400.
- Choe, J. I. "Do foreign direct investment and gross domestic investment promote economic growth?" *Review of Development Economics*, 7 (1), 2003, 44-57.
- Choong, C. K. "Does Domestic Financial Development Enhance the Linkages between Foreign Direct Investment and Economic Growth?" *Empirical Economics*, 42 (3), 2012, 819-834.
- Choong, C. K., Z. Yusop, and S. C. Soo. "Foreign Direct Investment and Economic Growth in Malaysia: The role of Domestic Financial Sector". *Singapore Economic Review*, 50 (2), 2005, 245-268.
- Culem, C. G. "The Locational Determinants of Direct Investments among Industrialised Countries." *European Economic Review*, 32 (4), 1988, 885-904.
- Daude, C., and E. Stein. "The Quality of Institutions and Foreign Direct Investment." *Economics & Politics*, 19 (3), 2007, 317–344.
- Delbecq, V., I. Méjean, and L. Patureau. "Labor market institutions and firms' location choices." *Review of World Economics*, 150 (1), 2014, 115-148.
- Demekas, D.G., B. Horváth, E. Ribakova, and Y. Wu. "Foreign Direct Investment in European Transition Economies: The Role of Policies". *Journal of Comparative Economics*, 35 (2), 2007, 369-386.
- Dewit, G., H. Görg, and C. Montagna. Should I Stay or Should I Go? Foreign Direct Investment, Employment Protection and Domestic Anchorage. *Review of World Economics*, 145 (1), 2009, 93-110.
- Dinga, M., and D. Munich. "The Impact of Territorially Concentrated FDI on Local Labor Markets: Evidence from the Czech Republic." *Labour Economics*, 17 (2), 2010, 354-67.
- Du, J., Y. Lu, and Z. Tao. "Economic Institutions and FDI Location Choice: Evidence from US Multinationals in China". *Journal of Comparative Economics*, 36 (3), 2008, 412–29.
- Dunning, J. *International Production and the Multinational Enterprise*, London: Allen & Unwin, 1981.
- Dupasquier, C., and P. N. Osakwe. "Foreign Direct Investment in Africa: Performance, Challenges, and Responsibilities". *Journal of Asian Economics*, 17 (2), 2006, 241-260.
- Durham, J. B. "Absorptive Capacity and the Effects of Foreign Direct Investment and Equity Foreign Portfolio Investment on Economic Growth". *European Economic Review*, 48 (2), 2004, 285-306.
- Egger, Peter, and Hannes Winner. "Evidence on Corruption as an Incentive for Foreign Direct Investment." *European Journal of Political Economy*, 21 (4), 2005, 932-952.
- Egger, Peter, and Hannes Winner. "How Corruption Influences Foreign Direct Investment: A Panel Data Study." *Economic Development and Cultural Change*, 54 (2), 2006, 459-486.
- Forstenlechner, I., M. T. Madi, H. M. Selim, and E. J. Rutledge. "Emiratisation: Determining the Factors that Influence the Recruitment Decisions of Employers in the UAE". *The International Journal of Human Resource Management*, 23 (2), 2012, 406–421.



- Forstenlechner, I., and E. Rutledge. "Unemployment in the Gulf: Time to Update the 'Social Contract' ". *Middle East Policy*, 17 (2), 2010, 38–51.
- Habib, M., and Zurawicki, L. "Corruption and foreign direct investment". *Journal of International Business Studies*, 33(2), 2002, 291-307.
- Hertog, S. "Arab Gulf States: An Assessment of Nationalisation Policies". GLMM – Research Paper 1, 2014, Gulf Labour Markets and Migration Programme, Badia Fiesolana, Italy.
- Hertog, S. "A Comparative Assessment of Labour Market Nationalization Policies in the GCC". In *Labour Market, Unemployment, and Migration in the GCC*, edited by Steffen Hertog, Geneva: Gulf Research Center, 2011.
- Jalil, Abdul, Amina Qureshi, and Mete Feridun. "Is Corruption Good Or Bad for FDI? Empirical Evidence from Asia, Africa and Latin America." *Panoeconomicus*, 63 (3), 2016, 259-271.
- Janicki, H.P., and P. V. Wunnava. "Determinants of Foreign Direct Investment: Empirical Evidence from EU Accession Candidates." *Applied Economics*, 36 (5), 2004, 505-509.
- Javorcik, B. S., and M. Spatareanu. "Do foreign Investors Care about Labor Market Regulations?" *Review of World Economics*, 141 (3), 2005, 375-403.
- Jayarman, T. K., and B. Singh. "Impact of Foreign Direct Investment on Employment in Pacific Island Countries: An Empirical Study of Fiji." *Economia Internazionale/International Economics*, 60 (1), 2007, 57-74. Jiménez, A. "Political Risk as a Determinant of Southern European FDI in Neighboring Developing Countries". *Emerging Markets Finance and Trade*, 47 (4), 2011, 59-74.
- Jiménez, A. "Political Risk as a Determinant of Southern European FDI in Neighboring Developing Countries." *Emerging Markets Finance and Trade*, 47 (4), 2011, 59-74.
- Kang, S. J., and H. S. Lee. "The Determinants of Location Choice of South Korean FDI in China". *Japan and the World Economy*, 19 (4), 2007, 441-460.
- Kinda, T. "Investment Climate and FDI in Developing Countries: Firm-Level Evidence". *World Development*, 38 (4), 2010, 498-513.
- Kolstad, Ivar, and Arne Wiig. "What Determines Chinese Outward FDI?" *Journal of World Business*, 47 (1), 2012, 26-34.
- Lee, C. S. "The Effect of Labor Market Institutions on FDI Inflows." Korea Institute for National Economic Policy Working Paper 03-09, 2003.
- Lee, C. C., and C. P. Chang. "FDI, Financial Development, and Economic Growth: International Evidence". *Journal of Applied Economics*, 12 (2), 2009, 249-271.
- Longva A.N. "Keeping Migrant Workers in Check: The Kafala System in the Gulf". *Middle East Report*, 211, 1999, 20–2.
- Lunn, J. "Determinants of U.S. Direct Investment in the E. E. C.: Further Evidence." *European Economic Review*, 13, 1980, 93-101.
- Majocchi, A., and R. Strange. "The FDI Location Decision: Does Liberalization Matter?" *Transnational Corporations*, 16 (2), 2007, 1-40.
- Marchon, C., and H. Toledo. "Re-thinking employment quotas in the UAE." *The International Journal of Human Resource Management*, 25 (16), 2014, 2253–2274.
- Mina, W. "The Location Determinants of FDI in the GCC Countries." *Journal of Multinational Financial Management*, 17 (4), 2007, 336-348.

- Mina, W. "External Commitment Mechanisms, Institutions, and FDI in GCC Countries". *Journal of International Financial Markets, Institutions, & Money*, 19 (2), 2009, 371–86.
- Mina, W. M. "Institutional Reforms Debate and FDI Flows to MENA Region: Does One 'Best' Fit All?" UNU-WIDER Working Paper No. 2011-50, 2011.
- Mishra, A., and K. Daly. "Effect of Quality of Institutions on Outward Foreign Direct Investment". *Journal of International Trade and Economic Development*, 16 (2), 2007, 231–44.
- Mogab, J., R. Kishan, and D. Vacaflares. "Labor Market Rigidity and Foreign Direct Investment: The Case of Europe", *Applied Econometrics and International Development*, 13 (1), 2013, 35-54.
- Mollick, A.V., R. Ramos-Duran, and E. Silva-Ochoa. "Infrastructure and FDI Inflows into Mexico: A Panel Data Approach". *Global Economy Journal*, 6 (1), 2006, Article Number 6.
- Naidu, S., Y. Nyarko, and S.-Y. Wang. "Monopsony Power in Migrant Labor Markets: Evidence from the United Arab Emirates". *Journal of Political Economy*, 124 (6), 2016, 1735-1792.
- Naudé, W. A., and W. F. Krugell. "Investigating Geography and Institutions as Determinants of Foreign Direct Investment in Africa Using Panel Data". *Applied Economics*, 39 (10–12), 2007, 1223–33.
- Olney, W. W. "A Race to the Bottom? Employment Protection and Foreign Direct Investment." *Williams College Working Paper*, 2011.
- Pantelidis, P., and E. Nikolopoulos. "FDI Attractiveness in Greece." *International Advances in Economic Research*, 14 (1), 2008, 90-100.
- Parcon, H. "Labor Market Flexibility as a Determinant of FDI Inflows." *University of Hawaii at Manoa, Department of Economics, Working Papers: 08-07*, 2008.
- Radosevic, S., U. Varblane, and T. Mickiewicz. "Foreign Direct Investment and Its Effect on Employment in Central Europe." *Transnational Corporations*, 12 (1), 2003, 53-90.
- Ramasamy, Bala, MatthewYeung, and Sylvie Laforet. "China's outward foreign direct investment: Location choice and firm ownership." *Journal of World Business*, 47 (1), 2012, 17-25.
- Roberto, B. "Acquisition versus Greenfield Investment: The Location of Foreign Manufacturers in Italy". *Regional Science and Urban Economics*, 34 (1), 2004, 3-25.
- Sassanpour, C., G. Joharji, A. Kireyev, and M. Petri. "Labor Market Challenges and Policies in the Gulf Cooperation Council Countries". In *Financial Systems and Labor Markets in the Gulf Cooperation Council Countries*. Washington: International Monetary Fund; 1997.
- Schneider, F., and B. Frey. "Economic and Political Determinants of Foreign Direct Investment". *World Development*, 13 (2), 1985, 161-175.
- Spiezia, V., "Trade, FDI and Employment: Some Empirical Evidence" in E. Lee and M. Vivarelli eds. *Understanding Globalization, Employment and Poverty Reduction*, Palgrave Macmillan, New York, 2004.
- Urata, S., and H. Kawai. "The Determinants of the Location of Foreign Direct Investment by Japanese Small and Medium-sized Enterprises". *Small Business Economics*, 15 (2), 2000, 79-103.
- Vacaflares, D. E. "Was Latin America Correct in Relying in Foreign Direct Investment to Improve Employment Rates?" *Applied Econometrics and International Development*, 11 (2), 2011, 101-22.
- Vijayakumar, N., P. Sridharan, and K. C. S. Rao. "Determinants of FDI in BRICS Countries: A Panel Analysis." *International Journal of Business Science and Applied Management*, 5 (3), 2010, 1-13.

- Voyer, Peter A., and Paul W. Beamish. "The Effect of Corruption on Japanese Foreign Direct Investment." *Journal of Business Ethics*, 50 (3), 2004, 211-224.
- Walsh, J. P., and J. Yu. "Determinants of Foreign Direct Investment: A Sectoral and Institutional Approach." IMF Working Paper WP/10/187.
- Wang, M., and M. C. S. Wong. "Foreign Direct Investment and Economic Growth: The Growth Accounting Perspective". *Economic Inquiry*, 47 (4), 2009, 701-710.
- Wei, S. J. "Local Corruption and Global Capital Flows." *Brookings Papers on Economic Activity*, 31 (2), 2000, 303–354.
- Whyman, P. and M. Baimbridge. *Implication of the Euro: A Critical Perspective from the Left*, London: Routledge, 2006.
- Wooldridge, J. M. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press, 2002.
- Wooldridge, J. M. *Introductory Econometrics: A Modern Approach*. Ohio: South-Western, 2003.
- Yerrabati, Sridevi, and Denise D. Hawkes. "Institutions and Investment in the South and East Asia and Pacific Region: Evidence from Meta-Analysis." *Economics: The Open-Access, Open-Assessment E-Journal*, 10 (11), 2016.
- Zhang, K. H. "What attracts foreign multinational corporations to China?" *Contemporary Economic Policy*, 19 (3), 2001, 336-346.
- Zhang, X., and K. Daly. "The Determinants of China's Outward Foreign Direct Investment." *Emerging Markets Review*, 12 (4), 2011, 389-398.