Female Youth Unemployment in the GCC Countries: A Political Economy Perspective

Mina, Wasseem

Department of Economics and Finance, College of Business and Economics, United Arab Emirates University, International Center for Public Policy, Department of Economics, Andrew Young School of Policy Studies, Georgia State University, Economic Research Forum

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Wasseem Mina[1]

Abstract:

This research empirically examines the relationship between flexible labour markets, the social contract, and female youth unemployment rate in the high-income, oil-abundant Gulf Cooperation Council countries. We hypothesize that flexible non-segmented labour markets improve female youth unemployment rate while the social contract worsens it. Empirical evidence shows that both flexible labour markets and the social contract improve the female youth unemployment rate. The results are robust to changes in model specification and the sample countries. Flexible labour markets, however, are key to the improvement in the female youth unemployment rate, while the social contract is not. This research has important implications for selecting the appropriate policies to address youth unemployment.

Keywords: Female youth unemployment; Youth unemployment; Labour markets; Social contract; Gulf Cooperation Council

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[1] Department of Economics and Finance, College of Business and Economics, United Arab Emirates University (Email: wmina@uaeu.ac.ae); Affiliated Faculty, International Center for Public Policy, Department of Economics, Andrew Young School of Policy Studies, Georgia State University; Economic Research Forum.

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1. Introduction

The six oil-rich Gulf Cooperation Council (GCC) countries – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE) - are high-income countries characterized by significant reliance on foreign labour service. The significant reliance on foreign labour service has been driven by the windfall in oil revenues, which started in the early 1970s. Oil revenues have financed economic growth and development of the GCC countries, and were shared with nationals in the form of generous social contracts.[2] The social contract takes the form of subsidies, free access to public services, such as education and health, highly paid government and public sector jobs, in addition to generous pensions at retirement (World Economic Forum, 2014; Assidmi and Wolgamuth, 2017). In turn, citizens are expected to support and be loyal to the government.

Reliance on Foreign Labor and Labor Market Segmentation

The small population and labour force size of the early 1970s coupled with the oil revenues windfall and the generous social contract have opened the door for hiring the service of foreign labour domestically. In order not to infringe on the skills, productivity, and welfare of national labour however, labour markets have been *de facto* segmented into two. The first segment is for government jobs, which are occupied by highly-paid nationals. Jobs in this segment are protected, and firing of employees is difficult. The other segment is for private sector jobs, filled by relatively low-paid foreign labour. This foreign labour market segment is flexible: Wages are flexibly determined and hiring and firing policies are easy. The Asian and Arab labour markets have provided the GCC labour markets with an elastic and relatively cheap labour supply thanks to the proximity and labour abundance of the home countries. Asian labour originates in countries, such as Bangladesh, India, Indonesia, Pakistan, Philippines and Thailand. Arab labour originates in countries, such as Algeria, Egypt, Jordan, Sudan and Syria.

The reliance on foreign labour is significant and reflected in the growth and nationality composition of the labour force. Between 1990 and 2020, the labour force of Qatar, UAE, Oman, and Bahrain grew at annual growth rates of 7.1 percent, 6.6 percent, 5.4 percent, and 5.1 percent, respectively. Compared to other high-income countries, the highest labour force annual growth rate is in Singapore during the same period with a rate of 2.7 percent.[3]

The percentage of non-citizens in the total population of the GCC countries is high. In the UAE, the number of non-citizens is estimated to be more than three-fold the number of citizens. According to the GCC statistical center data, the percentage of non-citizens in total population amount to 42 percent in Oman, 52 percent in Bahrain, 68 percent in Kuwait, and 34 percent in

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[2] See Assidmi and Wolgamuth (2017) on the Saudi Arabian experience.
[3] The sample of high-income countries include Australia, Austria, Barbados, Belgium, Brunei Darussalam, Canada, Chile, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Panama, Poland, Portugal, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Trinidad and Tobago, UK, US, and Uruguay.

Saudi Arabia.[4] Official statistics on the percentage of non-citizens in Qatar are not available, however.

Low Youth Unemployment Rates and Gender Differentials

Despite the influx of relatively cheap foreign labour, the GCC countries have enjoyed lower youth unemployment rate compared to the other high-income countries group. In 1990-2020, the male youth and male unemployment rates in the GCC countries amounted to 8.7 percent and 1.8 percent, respectively, as table 1 shows. In the other high-income countries group, these rates were much higher and amounted to 17 percent and 7.4 percent, respectively. The female youth and female unemployment rates amounted to 16.4 percent and 6.2 percent respectively. In the other high-income countries group, these rates were slightly higher amounting to 17.8 percent and 8.4 percent, respectively.

[Insert Table 1 here.]

The ratio of the female youth unemployment rate to the male youth unemployment rate is alarming in the GCC countries. The 1990-2020 average female youth unemployment rate was nearly twice (1.87) the average male youth unemployment rate. This ratio compares to almost unity (1.05) in the high-income countries group. The difference in ratios between the GCC countries and the other high-income countries group is even more striking when the youth age is disregarded. The 1990-2020 average female unemployment rate is more than triple (3.5) the average male unemployment rate in the GCC countries and compares to almost unity (1.1) in the high-income countries group.

Examining female youth unemployment statistics more recently - in particular in 2007-2017 our empirical study period, the ratio of female youth unemployment rate to male youth unemployment rate across the six GCC countries shows that the female youth unemployment rate was more than fourfold the male youth unemployment rate, as table 2 shows. Among the GCC countries, Qatar stands out as an outlier with a female-to-male youth unemployment rate ratio of 13.6. Even when Qatar is excluded, this ratio drops to about 2.6 instead of 4.5. In the other high-income countries group in contrast, the male and female youth unemployment rates are nearly at par (19 percent).

[Insert Table 2 here.]

The decision of females in the GCC countries to participate in the labour force and search for jobs is influenced by both cultural factors and the social contract. World Economic Forum (2014) points out that, "…by giving citizens an entitlement on oil wealth without promoting the productive use of national labour resources, the social contract has led to low labour force participation rates among GCC nationals…and a high proportion of non-working dependents per employed person" (page 8). Data supports this point for females: The average labour force

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[4] These numbers are based on author calculations. The GCC statistical center data is available at https://gccstat.org/en/?msclkid=9e9ad3d7b44711ec8af881af76463383

participation rates (LFPR) for female youth and females were less than half the rates for males: The ratios of the two rates, as table 1 shows, amount to slightly more than 40 percent.

Uniqueness of the High-Income GCC Countries

Although they are high-income, the GCC countries are different from the other high-income countries in two respects. First, their economies continue to rely heavily on government-owned natural resources. Oil resources finance the government budget and the generous social contract (Assidmi and Wolgamuth, 2017; World Economic Forum, 2014). The social contract may theoretically generate a negative income effect on labour supply attenuated by cultural factors in the case of female employment. Second, the GCC labour markets are segmented with the national labour segment being much less flexible than the foreign labour segment.

Research Question and Hypotheses

Against the backdrop of significant reliance on foreign labour force, labour market segmentation, oil revenues that continue to finance a generous social contract and protect national labour, and high ratios of female-male youth unemployment rates, we empirically examine the relationship between flexible labour markets, the generous social contract, and the female youth unemployment rates in the GCC countries. We hypothesize that flexible, non-segmented labour markets improve female youth unemployment rate while the generous social contract worsens it.

Article Contribution and Structure

This article contributes to the literature in three respects. First, it is the first article to the best of our knowledge that examines the issue of youth unemployment in the GCC countries. The recent literature did not examine the gender aspect of youth unemployment in the high-income GCC countries.[5] Second, this article considers the gender-aspect of youth unemployment from a political economy perspective. It considers the politically-driven social contract while examining the influence of flexible labor markets on female youth unemployment rate. Third, the article qualitatively distinguishes between national and foreign labor market segments in the GCC countries. It argues that the adoption of World Economic Forum's Global Competitiveness Index data should be considered cautiously and emphasizes the implication of using such data for the GCC labor markets.

Section 2 discusses in more detail the relationship between labour markets, the generous GCC social contract, and female youth unemployment. Section 3 evaluates the degree of flexibility of the foreign labour market segment using the World Economic Forum's Global Competitiveness Reports data. Section 4 provides a brief literature review of the relationship between labour market flexibility and youth unemployment, and specifies the empirical model. In examining the research hypotheses, and in the absence of data on the degree of labour market flexibility of each labour market segment, we implicitly assume that labour markets are non-segmented. Section 5 presents the empirical results and conducts robustness checks, while section 6 discusses them. Section 7 concludes.

2. The Social Contract and Youth Unemployment

A social contract is defined as "*the sets of formal and informal agreements between societal groups and their sovereign (government or other actor in power) on rights and obligations toward each*

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[5] Fakih et al. (2020) examine the probability of youth unemployment in five middle-income MENA countries –Algeria, Egypt, Lebanon, Morocco and Tunisia.

other" (Loewe *et al.*, 2021, page 1). In these agreements, governments provide social and economic benefits to societal groups in return for loyalty to the government. The social contract makes the relationship between government and society predictable and peaceful, and politics stable.

Social and economic benefits may include free health and education, commodity subsidies (including energy subsidies), and government and public sector jobs for graduates.[6] For example, in the case of Saudi Arabia, Saudis are offered high public employee wages, unemployment benefits, and commodity subsidies (Assidmi and Wolgamuth, 2017). In return, citizens become loyal to the government and accept "limited government accountability and restricted political participation".

GCC government expenditures can indicate the extent of the social contract. Two measures we adopt to assess such extent. The first is the compensation of government employees (percent of government expense), which is a measure of the relative importance of government employees (social) wages in government expenses.[7] The second is oil rents (percent of GDP), which is a broader indication of the government capacity to finance the social contract.[8] Because of missing observations, we interpolate compensation of government employees using the current GDP (US$).

The average compensation of government employees in Bahrain, Kuwait, Saudi Arabia and the UAE amounted to nearly 45 percent of government expense in 1990-2020. This figure is more than double that of the other high-income countries, which is about 19 percent, as table 3 shows. The available figures on each of these four countries amounted to nearly 60 percent, 30 percent, 56 percent, and 35 percent, respectively.

[Insert Table 3 here.]

The average GCC oil rents amount to nearly 29 percent of GDP in the same period, comparing to 0.6 percent in other high-income countries. Among the GCC countries, the figure for Kuwait exceeds 40 percent of GDP. In Saudi Arabia and Oman, the figure amounts to more than one third of their GDP. Oil rents have generously financed the compensation of government employees providing an additional depth dimension to Lowe's (2021) social contract effectiveness.

The depth of the GCC social contract is believed to have shaped the reservation wages and labour supply decisions of nationals. The highly paid government jobs have influenced youth reservation wages and shaped their preferences in favor of government employment, making private-sector jobs less attractive. The high reservation wages coupled with unemployment benefits - as a social protection instrument - may have slowed and reduced youth job search, and increased unemployment duration and youth unemployment rate.

The fact that female youth unemployment rate is at least more than twice the male youth unemployment rate is very likely due to the adverse impact of the generous social contract as well

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[6] See Al-Saidi (2020) on the role that energy subsidies play as a part of the social contract in the GCC countries. See also Al-Sheikh and Erbas (2016) on the high wages and expansive employment policies in Saudi Arabia.

[7] Because of missing observations, we interpolate the compensation of government employees using nominal GDP (US$).

[8] Loewe et al. (2021) point out that the effectiveness of social contracts depends on a) the substance or the exchanged deliverables, presumably the benefits to the societal groups, b) the scope or coverage of actors involved and the geographic range of influence, and c) the evolution and duration of the social contract over time.

as cultural factors.[9] Culture has accentuated the traditional role of female youth as mothers in the household (Murray and Zhang-Zhang, 2018). Such stereotype may have negatively impacted their job search and employment decisions, if they have not considered dropping out of the labour force in the first place. Gender neutrality is challenged in education and the labour market. Gender segregation at public high schools and universities indicates societal values towards female education and employment (Murray and Zhang-Zhang, 2018; Rutledge et al., 2011).[10] Thus, both the social contract and culture seem to matter for female youth unemployment.[11]

3. Labour Market Flexibility of the Foreign Labour Segment

The labour efficiency pillar of the WEF's Global Competitiveness Index (GCI) assesses labour market flexibility and efficiency based on several indicators. Of these indicators, we select hiring and firing practices (HF), labour-employer cooperation (C), wage determination flexibility (WF), the link between pay and productivity (PP), and the reliance on professional management (PM). Higher scores indicate more flexible and efficient labour markets.

"HF" refers to the flexibility of these practices. Flexible (regulated) practices get the highest (lowest) score of 7 (1). The labour-employer relationship "C" can be cooperative (7) or confrontational (1). Wage determination flexibility "WF" gets a score of 7 if wages are flexibly determined at the firm level or 1 if wages are determined through a unionized bargaining process. The link between pay and productivity "PP" refers to the extent that wages are related to productivity. A strong (weak) link gets a score of 7 (1). Reliance on professional management "PM" refers to how senior management is selected. A selection based on merit and qualifications (kinship and friendship) gets a score of 7 (1).

Table 4 presents the 2007-2017 period average of the different labour market indicators for the GCC and the other high-income countries sample. On average, the GCC labour markets performed better on the ease of hiring and firing, the degree of cooperation between labour and employers, flexibility of wage determination, and the link between pay and productivity than the other high-income countries sample, while the latter group performed better on the reliance on professional management.

[Insert Table 4 here.]

We believe that the GCI assessment of the labour efficiency pillar of the GCC labour market largely reflects the performance of the foreign labour segment for two reasons. First, foreign labour is employed mostly in the private sector. Employment in the private sector largely aligns with the free market principles supported by the absence of (foreign) labour unionization. We should emphasize though that the foreign labour segment is imperfectly flexible. In the UAE, for example, the sponsorship system and the monopsony power over foreign labour practically reduce the flexibility of the foreign labour segment nonetheless. Second, the GCC generous social contract aims to protect national labour and provides benefits in exchange for loyalty. With generous employee compensation and benefits, as table 3 above shows, there tends to be no room for salary negotiations. Salary negotiations are indicative of not only wage bargaining but also of the link between pay and productivity. Therefore, the national labour market segment tends to be

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[9] The restrictions on female employment in certain sectors in some GCC countries and the higher graduation rates of females compared to males are factors that very likely increases the female youth unemployment rates.

[10] In neighboring Iran, where society culture and norms are close, discrimination in the workplace is rampant (Hedayat et al., 2013).

[11] The nationals of the Maldives and the GCC countries face similar labour issues. For an interesting study, see Salvini et al. (2016).

largely inflexible. Given the significant presence of foreign labour in the labour force of the GCC countries and the segmented nature of the labour markets, GCI assessment of the labour efficiency pillar indicators largely reflects the performance of the foreign labour segment.

Assuming *both* labour market segments are equally flexible, we examine the hypothesis that labour market flexibility reduces female youth unemployment rates. The assumption that both labor market segments are equally flexible is reasonable in the absence of data on the degree of labour market flexibility for each labour segment.

4. Literature Review and the Empirical Model
Literature Review

The literature on the determinants of youth unemployment is large. Many studies examined the macroeconomic and structural determinants of youth unemployment. Baah-Boateng (2016) provides neoclassical and Keynesian explanations of unemployment in developed economies and apply them to developing African economies.[12] He distinguishes the microeconomic factors, such as minimum wages, efficiency wages and firm-insider information, and the macroeconomic factors, mainly Keynesian deficient demand and the business cycle. In Africa, (total) youth unemployment is explained by factors, such as gender, race, education and skills of both individuals and families, networks, location, and demand deficiency.[13] Many studies, such as Choudhry et al. (2012), Caporale and Gil-Alana (2014), Demidova and Signorelli (2012) and Ghoshray et al. (2016), focus on macroeconomic determinants.

Focusing on labour markets as a key determinant of youth unemployment, a few studies found that labour market flexibility reduced unemployment (Agnello et al., 2014; Bernal-Verdugo et al., 2012, 2013). Other studies did not support this relationship (Liotti, 2020, 2022). Agnello et al. (2014) found that labour market flexibility reduced youth unemployment, especially in the long-term. [14] Bernal-Verdugo et al. (2012) found that improved labour market regulations and institutions quality had a statistically significant negative impact both on the level and change of unemployment outcomes for total, youth, and long-term unemployment. Bernal-Verdugo et al. (2013) found that flexible labour markets mitigated the negative durational impact of banking crises on both total and youth unemployment making the banking crises short-lived.

Using a reduced form model to examine the static effects of labour market flexibility on youth unemployment, Bernal-Verdugo et al. (2012) regressed the youth unemployment rate on labour market flexibility composite index, a time measure of demand pressure, government size, degree of trade openness, degree of urbanization, population density, a financial crisis dummy, and the lagged unemployment rate. They found that a one standard deviation improvement in the composite labour market flexibility indicator reduced youth unemployment rate by 1.41 percentage point. A similar regression containing hiring and firing regulations index instead showed a reduction in youth unemployment rate by 0.78 percentage point.

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[12] The African economies are characterized by large informal sector. He explains youth unemployment rate in terms of supply factors (the share of youth in total population and gross enrolment rate), demand factors (real GDP growth rate and the share of agriculture and manufacturing in GDP) and labour market variables (ratio of employment to population and the vulnerable employment rate).

[13] Marelli and Vakulenko (2015), Mendolia and Walker (2015) and Mursa et al. (2018) highlight the importance of personal and family characteristics to youth employment.

[14] Among the dependent variables was youth unemployment rate, which was explained in terms of the lagged dependent variable, a vector of control variables, a vector of labour market flexibility variables, and a vector of fiscal consolidation variables. The control and labour market flexibility variables were similar to Bernal-Verdugo et al. (2012). They used fixed effects and Arellano-Bond GMM estimator.

Estimating the dynamic nature of the relationship between labour market flexibility and the change in youth unemployment rate, Bernal-Verdugo et al. (2012) found that an improvement in the composite labour market indicator of one standard deviation reduced the youth unemployment rate by a half percentage point.[15] In addition, the hiring and firing regulations and the mandated costs of hiring had statistically significant negative effects.

On the other hand, the recent study of Liotti (2020) on youth unemployment in Italy found no evidence of negative relationship between labour market flexibility and youth unemployment. Liotti (2022) found that economic growth and investment in active labour market policies reduced youth unemployment in 28 European countries.

The Empirical Model

Building on Bernal-Verdugo et al. (2012), we express the empirical model as:

$$FYUR_{it} = \beta_0 + \beta_1 UR_{it-1} + \beta_2 LABOUR_{it} + \beta_3 GFINANCE_{it} + \beta_4 LABOR * GFINANCE_{it} + \beta_5 RGDPCAPITA_{it} + \beta_6 OPENNESS_{it} + \beta_7 DENSITY_{it} + \varepsilon_{it}$$

where the dependent variable, $FYUR$, is the female youth (ages 15-24) unemployment rate.[16] UR is the total unemployment rate (lagged), which controls for the extent and persistence in previous total unemployment performance on the current $FYUR$.[17] $LABOUR$ is labour market flexibility indicators (log), as discussed in section 3 above. $GFINANCE$ accounts for the extent of the politically-driven social contract, as discussed in section 2 above. We use an (interpolated) compensation of government employees (as a percentage of government expense) as an indicator of the capacity of the government to finance the social contract expenditures. We also use oil revenues (percent of GDP) for robustness as discussed in the next section. $LABOUR*GFINANCE$ is an interaction term for the relationship between labour market flexibility and the extent of the social contract. $RGDPCAPITA$ is real gross domestic product (GDP) per capita in constant 2010 US$ (log). $OPENNESS$ is the degree of trade openness of the economy, measured by the level of imports (as a percentage of GDP). The selection of imports, as opposed to the sum of exports and imports, is meant to isolate the impact of trade in natural resources on youth unemployment, while controlling for the oil-related compensation of government employees or oil rents. $DENSITY$ is an indicator of the degree of population density, measured by the number of people per square kilometer of land area (log).

The error term, ε_{it}, is composed of unobservable country-specific effect, μ_i, an unobservable time-specific effect λ_t, and a disturbance term, v_{it}, as discussed below in the estimation methodology. The subscripts i and t are country and time indexes.

Given the persistence in the unemployment rate, we expect to have a positive relationship between the lagged UR and $FYUR$. We are inclined to expect a negative relationship between labour market flexibility and $FYUR$. Easy hiring and firing policies may encourage the hiring of female youth and laying them off if need arises in both government and the private sector. Wage flexibility motivates the employer to hire national female youth. Linking pay to productivity

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[15] They used a two-step system generalized method of moments (GMM) estimation methodology to account for the lagged dependent variable and potential simultaneity. In doing so, they considered all explanatory variables as endogenous and instrumented them using up to two lags.

[16] Because of the paucity of statistical data in some GCC countries, we use the available ILO-modeled female youth unemployment rate, which defines youth in terms of ages 15-24.

[17] It should be noted that in the study period expatriates had to leave the country once the labour contract ends or is terminated. Accordingly, this practice reduces the number of unemployed and the size of the labour force, and likely the unemployment rate. With the unemployed (expatriates) forced to leave the GCC countries, the unemployment rate may underestimate the actual unemployment rate had the expatriates been rather allowed to stay in the country.

motivates national female youth to participate in the labour force, boost their productivity, and reduce the probability of being laid-off. Similarly, labour-employer cooperation promotes smooth and cooperative relationship between both sides and also reduces the probability of being laid-off. The empirical evidence of Agnello et al. (2014) and Bernal-Verdugo et al. (2012, 2013) supports our expectation.

GFINANCE, as a measure of the extent of the social contract, is expected to worsen *FYUR* as discussed above. The relationship between *RGDPCAPITA* (log) and the dependent variable is ambiguous. An increase in *RGDPCAPITA* reflects growth in the economy and the employment of resources, including labour, which reduces *FYUR*. Yet an increase in *RGDPCAPITA* generates an additional income effect at the household level, which may reduce the urgency of job search and increase *FYUR*.

The evidence on the relationship between imports and unemployment has been mixed (Leightner 2021). The increase in imports, *OPENNESS*, can help businesses expand and hire employees if these imports take the form of technology, machinery, or intermediate goods (Kim et al. 2009). Imports were found to reduce the unemployment rate in developing economies, economies with high industry ratio, and economies with low service ratio (Jin et al. 2019).[18] Given the segmented nature of the labour market, it is doubtful however that imports can expand employment opportunities in the government sector where nationals elect to work. An increase in imports may not be conducive to the creation of job opportunities suitable to the skills of nationals. Thus, we expect a positive relationship between *OPENNESS* and *FYUR*.

Finally, the degree of population density, *DENSITY*, tends to be associated with urbanization and infrastructure development. To live in developed urban areas, population has to have jobs and income, which are negatively associated with the unemployment rate and possibly *FYUR*. Accordingly, we expect a negative relationship between *DENSITY* and *FYUR*.

Data and Estimation Methodology
Data on the empirical model variables with the exception of *LABOUR* are obtained online from the World Bank's World Development Indicators (World Bank, 2020). Data on *LABOUR* are obtained from the World Economic Forum's Global Competitiveness Index Historical Dataset 2007-2017 (World Economic Forum, 2018).

In estimation, we adopt a fixed effects panel data model to account for the unobserved country and time effects. As discussed above, culture is one example of the time-invariant unobserved-country effects that characterize the GCC countries. We also account for country-invariant unobserved time effects; global oil crises to which the GCC countries were exposed are one example. Potential endogeneity arises from reverse causality between *FYUR* and *RGDPCAP*: While real GDP (per capita) growth influences the unemployment rate, unemployed resources including labour influence real GDP growth. We therefore adopt an instrumental variables (IV) estimation methodology as well and instrument for *RGDPCAPITA*. However, we believe that labour market policies are largely determined politically to protect the interest of nationals and are not influenced by *FYUR*. In other words, there is no reverse causality between *FYUR* and *LABOR*.

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[18] Exports have a similar impact on unemployment in developed economies, economies with low industry ratio, and economies with high service ratios.

5. Empirical Results

Table 5 presents the empirical model variable means for the GCC countries.[19] The average *FYUR* is highest in Saudi Arabia at 53 percent, suggesting that more than half of the female youth labour force is unemployed. The rate is second highest in Oman with nearly one quarter of the female youth labour force unemployed. The lowest rate is in Qatar. Similar to *FYUR*, the unemployment rate is highest in Saudi Arabia and Oman at 5.6 percent and 3.5 percent, respectively, and lowest in Qatar at 0.3 percent. Interestingly, Saudi Arabia, which has the highest *FYUR* also has the highest share of compensation of government employees in government expense, *GFINANCE*.

[Insert Table 5 here.]

The labour markets of the UAE and Qatar are the best performers in the region on the five *LABOUR* indicators. Real GDP per capita, *RGDPCAPITA*, is the highest in Qatar, which is about 70 percent higher than the UAE's, the second highest. The UAE and Bahrain are the most open to trade, as measured by the percentage of imports of goods and service to GDP, in the region (68 percent).

Fixed Effects Estimation Results

Tables 6 and 7 present the country-specific and both country- and time-specific fixed effects estimation results, respectively. Estimation results of table 6 show that linking pay to productivity, wage flexibility, the ease of hiring and firing policies and the reliance on professional management have negative and statistically significant coefficients at least at the 5 percent level. When accounting for both country and time effects, estimation results of table 7 show that linking pay to productivity, wage flexibility, and the ease of hiring and firing policies have negative and statistically significant coefficients at least at the 5 percent level. These specific labour market flexibility indicators improve (reduce) *FYUR* in the GCC countries. For example, an improvement in the link between pay and productivity by 1 percent reduces *FYUR* by about 1.1 percentage point in table 6 and 1.3 percentage point in table 7.[20]

[Insert Table 6 here.]
[Insert Table 7 here.]

The social contract that GCC countries adopt, as measured by the share of compensation of government employees in government expenses, surprisingly improves (reduces) *FYUR*. This influence is significant both economically and statistically in the three specifications containing the ease of hiring and firing policies, linking pay to productivity, and the reliance on professional management in table 6. An increase in the share of compensation by one percentage point reduces *FYUR* by slightly above 3 percentage points in the specification containing the link of pay to productivity.

The interaction term *LABOUR*GFINANCE* carries a positive coefficient. This suggests the presence of flexible labour markets and the social contract together weakens their individual influence of reducing *FYUR*. We will discuss this result in the following section.

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[19] The memo items in the table show the national estimates. The estimates for Saudi Arabia and Qatar are close to the International Labour Organization (ILO) estimates. For other GCC countries, insufficient observations are available.

[20] The influence on *FYUR* would be the product of the estimated coefficient and the average value of the variable. In the case of linking pay to productivity, the average value of linking pay to productivity (log) is 1.51. Accordingly, the influence on *FYUR* ranges from 1.6 to 2 percentage points, depending on whether we multiply the average value by -108.112 (table 6) or -132.53 (table 7).

Instrumental Variables Estimation Results

Tables 8 and 9 present the instrumental variables estimation results of the FE model. Table 8 accounts for the country-specific effects, while table 9 accounts for both country- and time-specific effects. We instrument for *RGDPCAP* using the first two lags.

Table 8 shows that *LABOUR* coefficients are negative and statistically significant at least at the 1 percent level confirming the positive influence of labour market flexibility on *FYUR* we obtained in the above two tables. They are estimated to reduce *FYUR* by 0.9 percentage point, 2.2 percentage point, 3.16 percentage point, and 1.19 percentage point in these four specifications, respectively.[21]

[Insert Table 8 here.]
[Insert Table 9 here.]

The social contract improves *FYUR* in the four specifications containing ease of hiring and firing policies, labour-employer cooperation, wage flexibility, and the link of pay to productivity. Coefficients are negative and statistically significant at least at the 1 percent level. In the fourth specification containing the link of pay to productivity, for example, an increase in the compensation of government employees (in government expenses) by one percentage point reduces *FYUR* by 3.6 percentage point.

The interaction term *LABOUR*GFINANCE* carries a positive coefficient. This confirms what we obtained above.

OPENNESS exerts a negative influence on *FYUR*. An increase in the percentage of imports to GDP by 1 percentage point worsens (increases) *FYUR* between 0.1 and 0.2 percentage points in the first three specifications. This value is economically small compared to the magnitude of the influence of *LABOUR* and *GFINANCE* on *FYUR*.

Table 9 provides close estimates to table 8. We should note though that although the regressions pass all identification tests, the results of the under-identification test suggest the null hypothesis of under-identified equation is marginally rejected (at the 10 percent level) in all specifications.

Robustness Checks

We undertake three robustness checks. The first two use alternative measures of the social contract and trade openness. The first robustness check uses oil rents (percentage of GDP) instead of the compensation of government employees. The second check uses the percentage of exports (instead of imports) to GDP. The third robustness check excludes Saudi Arabia from the sample with its outlier *FYUR* observations.

Tables 10 and 11 provide the FE/IV estimation for the first robustness check. *LABOUR* and *GFINANCE* continue to reduce *FYUR*, while *OPENNESS* increases it. We note that in both tables *LABOUR* coefficients are all statistically significant at the 1 percent level in all specifications.

[Insert Table 10 here.]
[Insert Table 11 here.]

Table 12 and 13 provide the FE/IV estimation results for the second robustness check. *LABOUR* and *GFINANCE* continue to reduce *FYUR*. However, unlike the earlier results which use imports as a measure of trade openness, the results of the fourth specification (the link between

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[21] The average values of each of these indicators (log) are 1.45, 1.60, 1.74, and 1.51, respectively.

pay and productivity) in both tables show that exports reduce *FYUR*. Oil, as the main commodity export, therefore do not seem to cast a curse on female youth unemployment.

[Insert Table 12 here.]
[Insert Table 13 here.]

Table 14 and 15 provide the FE/IV estimation results for the third robustness check. Table 14 shows that *LABOUR* continues to reduce *FYUR* in four out of the five specifications containing the ease of hiring and firing policies, labour-employer cooperation, linking pay to productivity, and the reliance on professional management. *GFINANCE* continues to reduce *FYUR* in these four specifications. However, the influence is statistically significant at least at the 5 percent level only in two specifications. Table 15 shows that *LABOUR* reduces *FYUR* in the two specifications containing labour-employer cooperation and linking pay to productivity.

[Insert Table 14 here.]
[Insert Table 15 here.]

6. Discussion

The empirical evidence highlights the influence of labour market flexibility on female youth unemployment rate. In doing so, it accounts for the influence of the politically-driven, generous social contract. Enhancing the flexibility of labour markets in the GCC countries shows it improves the female youth unemployment rate. The fear of adopting liberal labour market policies for worsening (female) youth unemployment rates is dissipated.

While the GCC social contract has been generous and known for the relatively high level of salaries provided to nationals (relative to expatriates), the attractive government employment terms helped in improving (reducing) *FYUR* in the study period. We earlier hypothesized that the social contract would worsen (increase) *FYUR* due to the relatively high level of salaries and protection for government jobs in the GCC countries. This particular dimension of the social contract can increase youth reservation wages, discouraging youth from accepting "unmatching" jobs in the private sector.[22]

The social contract is primarily meant to garner political support for the government. By having a positive economic impact on female youth unemployment, the social contract benefits the GCC countries not only politically but economically and socially as well - a double or even a triple whammy.

The positive coefficient of the interaction term suggests that the presence of labour market flexibility and the social contract at the same time reduces their favorable impact on female youth unemployment. Linking this positive coefficient to the social contract role, can it reduce the political support and loyalty to the government? In our opinion, nationals perceive the GCC social contract as generous with extending economic and social benefits nonetheless.

Can the politically-driven social contract reduce female youth unemployment on its own? Or can flexible labour markets improve it separately? To answer these questions, we undertook additional robustness checks. As table 16 shows, the *GFINANCE* coefficient is insignificant, if labour markets are unaccounted for, and therefore the social contract does not reduce *FYUR* by itself.[23] In contrast, *LABOUR* coefficients reduce *FYUR* even if the social contract is unaccounted for, and therefore flexible labour markets are the key to the reduction of female youth

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[22] By "unmatching", we mean jobs that are not of equal levels of salary or protection.
[23] This result holds whether we measure the social contract using compensation of government employees (percent of government expense) or oil rents (percent of GDP).

unemployment. The key role of flexible labour markets can be observed further even if we account for the social contract but ignore the interaction between the two, as table 17 shows.

[Insert Table 16 here.]
[Insert Table 17 here.]

7. Conclusion

This research empirically examines the relationship between labor markets, the politically-driven social contract and female youth unemployment rates in the GCC countries. It hypothesizes that labour market flexibility and the social contract would influence *FYUR* differently. Having the same degree of flexibility in the national and foreign labour segments is hypothesized to reduce female youth unemployment rate, while the social contract is hypothesized to increase it. The empirical evidence shows when accounting for labour market flexibility, the social contract, and the interaction between them, both labour market flexibility and the social contract reduce female youth unemployment rate. The research also shows that these results are robust to changes in model specification or sample size.

Research also shows that the politically-driven, social contract by itself cannot reduce female youth unemployment. Labour market flexibility can, however. Therefore, the GCC governments should focus primarily on reforming labour markets, if they are to reduce female youth unemployment.

This research can be extended beyond female youth unemployment to examine male youth unemployment but to examine total unemployment in the GCC countries. A comparative examination of the GCC countries and other resource-rich countries would be interesting to study in future research.

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Table 1: GCC Labour Statistics (1990-2020 Period Average)

	LFPR		Unemployment Rate	
Country	Female Youth	Females	Female Youth	Females
Bahrain	25.3	39.3	11.6	3.7
Kuwait	23.0	45.2	11.7	3.3
Oman	19.4	27.0	18.9	9.1
Qatar	34.8	49.6	6.0	2.4
Saudi Arabia	7.9	18.7	40.7	13.9
UAE	27.2	39.8	9.1	4.7
Total	**22.9**	**36.6**	**16.4**	**6.2**
Memo item				
Other high-income countries	**45.2**	**63.5**	**17.8**	**8.4**
	Male Youth	Males	Male Youth	Males
Bahrain	55.3	88.0	2.6	0.5
Kuwait	37.2	84.6	6.5	0.9
Oman	50.5	82.8	12.0	2.8
Qatar	81.2	94.3	0.7	0.3
Saudi Arabia	32.3	78.2	24.8	4.2
UAE	63.3	93.0	5.7	1.9
Total	**53.3**	**86.8**	**8.7**	**1.8**
Memo item				
Other high-income countries	**51.2**	**79.5**	**17.0**	**7.4**
	Female-Male Ratios			
Bahrain	0.46	0.45	4.51	7.81
Kuwait	0.62	0.53	1.80	3.68
Oman	0.38	0.33	1.57	3.19
Qatar	0.43	0.53	8.31	9.24
Saudi Arabia	0.24	0.24	1.64	3.30
UAE	0.43	0.43	1.58	2.46
Total	**0.43**	**0.42**	**1.87**	**3.49**
Memo item				
Other high-income countries	**0.88**	**0.80**	**1.05**	**1.13**

Source: Own calculations using World Development Indicators data (World Bank, 2020).

Table 2: GCC Youth Unemployment Rates (2007-2017 Period Average)

	Total (%)	Male (%)	Female (%)	Female-to-Male Ratio
Bahrain	5.2	2.6	12.7	4.6
Kuwait	11.7	10.1	15.5	1.6
Oman	14.0	12.0	25.0	2.2
Qatar	1.0	0.4	5.7	14.1
Saudi Arabia	28.9	22.1	53.2	2.4
UAE	6.6	5.6	10.4	1.8
Total	**11.3**	**8.8**	**20.4**	**4.5**
Memo item				
Other high-income countries	**19. 1**	**19.0**	**19.4**	**1.0**

Source: Own calculations using data from World Development Indicators (World Bank, 2022).

Table 3: Social Contract Indicators (1990-2020)

Country	Compensation of Employees (% expense)	Obs.	Oil Rents (% GDP)	Obs.
Bahrain	59.5	15	16.9	31
Kuwait	29.9	15	42.5	31
Oman	.	0	34.1	31
Qatar	.	0	27.1	31
Saudi Arabia	55.6	11	35.4	31
UAE	34.6	13	19.9	31
Total	**44.5**	**54**	**29.3**	**186**
Memo item				
Other high-income countries	**18.8**	**1297**	**0.6**	**1736**

Source: Own calculations using World Development Indicators data (World Bank, 2022).

Table 4: Labour Market Performance (2007-2017 Period Average)

Variable	Obs.	Mean	Std. Dev.	Min	Max
			GCC Countries		
HF	66	4.30	0.60	2.79	5.48
C	66	4.96	0.38	4.24	5.67
WF	66	5.72	0.35	4.51	6.23
PP	66	4.54	0.52	3.35	5.53
PM	66	4.76	0.61	3.37	5.78
			High-Income Countries		
HF	484	3.75	0.91	2.10	6.11
C	484	4.78	0.79	2.99	6.32
WF	484	4.74	1.04	2.18	6.42
PP	484	4.27	0.65	2.34	6.04
PM	484	5.10	0.83	3.21	6.47

Source: Own calculations using Global Competitiveness Index Historical Dataset 2007-2017 (World Economic Forum, 2018).

Table 5: Variable Statistics (Period Average)

	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
FYUR	12.84	16.66	24.65	5.53	52.99	11.16
UR	1.24	2.10	3.53	0.32	5.59	2.24
LABOUR						
HF	3.98	3.90	3.74	4.85	4.37	4.96
C	4.85	4.64	4.89	5.26	4.76	5.36
WF	5.86	5.48	5.29	6.00	5.65	6.05
PP	4.53	3.84	4.19	5.09	4.57	5.03
PM	4.71	3.72	4.81	5.43	4.66	5.21
GFINANCE	34.02	24.97	33.84	26.51	52.37	31.68
RGDPCAPITA	21,587.12	39,933.11	17,829	65,740.83	20,373.37	38,834.03
OPENNESS	68.31	33.14	46.93	31.80	32.80	68.57
DENSITY	1,667.28	186.49	11.54	182.03	13.57	120.76
Memo items						
FYUR	11.94	23.60	33.90	5.05	52.77	13.51
Observations	2	3	1	10	9	1
UR	4.33	2.00	3.71	0.32	5.59	2.05
Observations	4	7	2	11	11	2

Source: Own calculations using Global Competitiveness Index Historical Dataset 2007-2017 and World Development Indicators (World Economic Forum, 2018; World Bank, 2020 and 2022).

Table 6: FE Estimation Results (Country-specific Effects)

	HF	C	WF	PP	PM
L.UR	2.298	0.994	-0.055	-1.180	-0.077
	(1.258)	(1.637)	(2.555)	(1.915)	(2.585)
LABOUR	**-55.976***	-92.621	**-149.869****	**-108.112***	**-69.638***
	(11.234)	(56.033)	(51.340)	(7.933)	(20.699)
GFINANCE	**-1.696***	-2.756	-5.771	**-3.184***	**-2.419***
	(0.428)	(2.627)	(3.210)	(0.449)	(0.609)
*LABOUR*GFINANCE*	**1.027***	1.579	3.241	**1.948***	**1.449***
	(0.255)	(1.612)	(1.846)	(0.278)	(0.380)
RGDPCAPITA	-10.210	-7.427	-18.543	-0.375	-13.581
	(8.145)	(5.549)	(10.614)	(6.105)	(12.005)
OPENNESS (imports)	0.177	0.194	0.079	0.083	0.103
	(0.141)	(0.145)	(0.079)	(0.130)	(0.101)
DENSITY	11.082	12.661	4.979	6.757	8.506
	(6.134)	(6.844)	(8.643)	(6.302)	(7.575)
Constant	149.167	183.587*	451.076***	163.676*	230.713*
	(85.702)	(86.390)	(88.393)	(74.257)	(109.507)
Observations	60	60	60	60	60
R-squared	0.540	0.559	0.521	0.636	0.464
Number of countries	6	6	6	6	6
F test	**7.87***	**8.51***	**7.29***	**11.75***	**5.81***

Notes: Robust standard error is in parentheses. * $0.05 < p \leq 0.10$. ** $0.01 < p \leq 0.05$. *** $p \leq 0.01$.

Table 7: FE Estimation Results (Country- and time-specific effects)

	HF	C	WF	PP	PM
L.UR	2.587	1.021	-0.151	-1.351	-0.272
	(1.518)	(1.786)	(3.040)	(2.212)	(2.959)
LABOUR	**-54.816****	-74.039	**-150.683****	**-132.530*****	-69.445
	(15.071)	(54.529)	(57.935)	(19.017)	(45.634)
GFINANCE	**-1.630***	-1.905	-5.789	**-4.185*****	-2.523
	(0.718)	(2.267)	(3.844)	(0.780)	(1.888)
LABOUR*GFINANCE	**0.968***	1.014	3.236	**2.588*****	1.487
	(0.434)	(1.420)	(2.183)	(0.520)	(1.190)
RGDPCAPITA	-11.247	-11.169	-19.156	3.001	-18.555
	(9.647)	(8.597)	(14.596)	(9.361)	(14.815)
OPENNESS (imports)	0.165	0.182	0.072	0.049	0.066
	(0.136)	(0.149)	(0.087)	(0.095)	(0.102)
DENSITY	4.196	3.279	2.825	7.321	3.973
	(9.587)	(9.932)	(19.192)	(8.577)	(18.257)
Constant	188.555*	236.060*	469.741**	166.439	306.545*
	(93.338)	(109.214)	(148.007)	(115.714)	(146.434)
Observations	60	60	60	60	60
R-squared	0.560	0.577	0.526	0.684	0.486
Number of countries	6	6	6	6	6
F test	**3.02*****	**3.24*****	**2.64*****	**5.14*****	**2.25****

Notes: Robust standard error is in parentheses. * $0.05 < p \leq 0.10$. ** $0.01 < p \leq 0.05$. *** $p \leq 0.01$.

Table 8: FE/IV Estimation Results (Country-specific effects)

	HF	C	WF	PP	PM
L.UR	**3.375****	**2.466****	0.509	-0.753	0.540
	(1.431)	(1.232)	(1.516)	(1.562)	(1.588)
LABOUR	**-64.880*****	**-134.365*****	**-181.471*****	**-118.432*****	**-85.022***
	(18.449)	(37.284)	(38.486)	(27.151)	(47.915)
RGDPCAPITA	-13.104	**-17.544****	**-30.425*****	1.745	-18.265
	(11.473)	(8.928)	(9.753)	(10.676)	(13.438)
GFINANCE	**-1.976****	**-4.524*****	**-7.023*****	**-3.581*****	-3.084
	(0.771)	(1.709)	(1.948)	(1.215)	(2.033)
LABOUR*GFINANCE	**1.235****	**2.716*****	**4.012*****	**2.211*****	1.883
	(0.493)	(1.043)	(1.115)	(0.756)	(1.257)
OPENNESS (Imports)	**0.204*****	**0.208*****	**0.092****	0.085	0.101
	(0.066)	(0.071)	(0.042)	(0.066)	(0.063)
DENSITY	8.512	**11.452****	0.547	7.148	8.732
	(5.286)	(4.983)	(5.705)	(5.377)	(5.820)
Observations	54	54	54	54	54
R-squared	0.546	0.603	0.583	0.615	0.478
Number of countries	6	6	6	6	6
F test	**8.68*****	**10.30*****	**11.44*****	**6.96*****	**4.95*****
Identification tests					
Under-identification	**12.742*****	**13.994*****	**18.196*****	**10.52*****	**14.79*****
Weak identification					
Cragg-Donald	31.331	39.597	46.024	26.278	31.989
Kleibergen-Paap rk	28.843	43.559	48.935	28.335	27.464
Overidentification	0.753	0.423	0.327	1.612	1.727

Notes: Robust standard error is in parentheses. * $0.05 < p \leq 0.10$. ** $0.01 < p \leq 0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald *F* statistics.

Table 9: FE/IV Estimation Results (Country- and time-specific effects)

	HF	C	WF	PP	PM
L.UR	**3.379***	**2.163***	0.097	-0.938	-0.339
	(1.305)	(1.223)	(1.760)	(1.574)	(1.721)
LABOUR	**-74.933***	**-128.162***	**-177.827***	**-139.874***	**-97.779**
	(20.345)	(40.106)	(38.891)	(24.368)	(44.882)
RGDPCAPITA	**-35.453**	**-39.200***	**-45.349***	-2.043	**-41.080**
	(14.031)	(12.992)	(17.294)	(15.256)	(18.812)
GFINANCE	**-2.425***	**-4.185**	**-7.010***	**-4.513***	-3.486*
	(0.867)	(1.849)	(1.943)	(1.133)	(1.901)
*LABOUR*GFINANCE*	**1.481***	**2.427**	**3.952***	**2.815***	2.095*
	(0.552)	(1.135)	(1.105)	(0.688)	(1.174)
OPENNESS (Imports)	**0.128**	**0.136**	0.027	0.043	0.018
	(0.057)	(0.065)	(0.059)	(0.056)	(0.070)
DENSITY	-23.244*	-23.188*	-21.603	3.414	-24.456
	(12.526)	(12.484)	(15.398)	(13.044)	(16.503)
Observations	54	54	54	54	54
R-squared	0.627	0.668	0.613	0.681	0.553
Number of countries	6	6	6	6	6
F test	**5.55***	**5.07***	**5.03***	**5.66***	**2.88***
	Identification tests				
Under-identification	5.881*	5.702*	4.495	4.653*	5.736*
Weak identification					
Cragg-Donald	21.96	24.073	23.855	15.892	22.351
Kleibergen-Paap rk	10.96	11.503	8.474	6.954	9.897
Overidentification	0.171	0	0	1.689	0.118

Notes: Robust standard error is in parentheses. * $0.05<p\leq0.10$. ** $0.01<p\leq0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald *F* statistics.

Table 10: Robustness Check - FE/IV Estimation Results (Country-specific effects)

Social contract measured by oil rents

	HF	C	WF	PP	PM
L.UR	2.355	1.692	1.363	0.069	-0.050
	(1.450)	(1.198)	(1.431)	(1.366)	(1.490)
LABOUR	**-46.860***	**-56.896***	**-135.015***	**-72.268***	**-55.684***
	(10.729)	(21.438)	(32.699)	(11.938)	(16.168)
RGDPCAPITA	-2.883	-14.933	-19.599*	0.158	-15.210
	(10.714)	(11.228)	(11.053)	(9.047)	(14.079)
GFINANCE (oil rents)	**-1.573***	-1.167	**-4.349***	**-1.788***	**-2.366***
	(0.463)	(1.079)	(1.313)	(0.367)	(0.635)
*LABOUR*GFINANCE*	**1.084***	0.732	**2.532***	**1.170***	**1.524***
	(0.323)	(0.674)	(0.765)	(0.251)	(0.409)
OPENNESS (Imports)	**0.242***	**0.254***	**0.191***	0.114*	**0.157**
	(0.068)	(0.081)	(0.067)	(0.067)	(0.066)
DENSITY	9.572*	9.275*	0.915	7.794	**11.358**
	(5.260)	(5.075)	(5.602)	(5.081)	(5.698)
Observations	54	54	54	54	54
R-squared	0.573	0.564	0.584	0.623	0.548
Number of countries	6	6	6	6	6
F test	**5.29***	**7.08***	**8.63***	**7.06***	**9.63***
	Identification tests				
Under-identification	**11.185***	**11.308***	**18.514***	**11.065***	**12.810***
Weak identification					
Cragg-Donald	23.329	24.917	39.958	23.716	25.791
Kleibergen-Paap rk	28.301	34.362	45.715	31.211	19.931
Overidentification	0.853	2.689	1.697	0.381	2.008

Notes: Robust standard error is in parentheses. * $0.05 < p \leq 0.10$. ** $0.01 < p \leq 0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald F statistics.

Table 11: Robustness Check - FE/IV Estimation Results (Country- and time-specific effects)

Social contract measured by oil rents

	HF	C	WF	PP	PM
L.UR	**2.959****	1.629	1.026	-0.205	-0.734
	(1.187)	(1.171)	(1.352)	(1.230)	(1.432)
LABOUR	**-61.924*****	**-81.255*****	**-150.499*****	**-102.964*****	**-63.670*****
	(10.868)	(18.524)	(34.953)	(15.650)	(14.346)
RGDPCAPITA	-10.152	-22.017	**-30.196****	13.175	-32.345*
	(12.222)	(14.378)	(15.376)	(11.125)	(16.741)
GFINANCE (oil rents)	**-1.462*****	**-1.892****	**-4.998*****	**-1.873*****	**-2.317*****
	(0.458)	(0.906)	(1.485)	(0.422)	(0.513)
LABOUR*GFINANCE	**1.357*****	**1.436****	**3.000*****	**1.794*****	**1.632*****
	(0.317)	(0.566)	(0.895)	(0.332)	(0.324)
OPENNESS (Imports)	**0.261*****	**0.255*****	**0.164****	**0.133****	0.112
	(0.066)	(0.083)	(0.078)	(0.060)	(0.077)
DENSITY	-8.248	-6.070	-12.392	20.469*	-11.670
	(13.056)	(15.319)	(15.589)	(11.714)	(16.766)
Observations	54	54	54	54	54
R-squared	0.692	0.640	0.624	0.739	0.616
Number of countries	6	6	6	6	6
F test	**4.17*****	**4.06*****	**4.28*****	**5.41*****	**6.51*****
	Identification tests				
Under-identification	**7.974****	**7.047****	**5.463***	**5.918****	**6.005****
Weak identification					
Cragg-Donald	17.035	16.122	22.645	12.661	19.711
Kleibergen-Paap rk	11.148	9.899	9.553	6.715	9.864
Overidentification	0	0.753	1.017	0.045	0.564

Notes: Robust standard error is in parentheses. * $0.05 < p \leq 0.10$. ** $0.01 < p \leq 0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald F statistics.

Table 12: Robustness Check - FE/IV Estimation Results (Country-specific effects)

Openness measured by exports

	HF	C	WF	PP	PM
L.UR	2.464	2.328	0.360	-2.024	0.457
	(1.728)	(1.441)	(1.628)	(1.605)	(1.631)
LABOUR	**-64.459***	**-151.995***	**-194.950***	**-158.991***	**-102.038**
	(21.607)	(44.418)	(38.434)	(28.375)	(49.459)
RGDPCAPITA	-13.665	-16.412	**-29.120***	14.772	-17.155
	(13.361)	(10.458)	(10.213)	(12.560)	(13.822)
GFINANCE	**-2.398***	**-6.007***	**-7.885***	**-5.407***	**-4.252**
	(0.901)	(2.071)	(1.957)	(1.226)	(2.061)
*LABOUR*GFINANCE*	**1.440**	**3.582***	**4.481***	**3.328***	**2.575**
	(0.594)	(1.282)	(1.126)	(0.762)	(1.287)
OPENNESS (Exports)	-0.052	-0.028	-0.011	**-0.146***	-0.032
	(0.053)	(0.052)	(0.049)	(0.048)	(0.057)
DENSITY	**14.562***	**17.901***	3.201	7.513*	11.727**
	(5.269)	(4.902)	(5.596)	(4.208)	(5.541)
Observations	54	54	54	54	54
R-squared	0.479	0.531	0.567	0.651	0.462
Number of countries	6	6	6	6	6
F test	**7.35***	**8.19***	**10.78***	**10.68***	**4.45**
	Identification tests				
Under-identification	**13.247***	**14.236***	**16.525***	**10.946***	**15.308**
Weak identification					
Cragg-Donald	31.898	38.573	45.698	24.915	33.082
Kleibergen-Paap rk	26.199	36.629	43.445	21.036	26.146
Overidentification	1.994	0.992	0.577	0.358	2.142

Notes: Robust standard error is in parentheses. * $0.05<p\leq0.10$. ** $0.01<p\leq0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald *F* statistics.

Table 13: Robustness Check - FE/IV Estimation Results (Country- and time-specific effects)

Openness measured by exports

	HF	C	WF	PP	PM
L.UR	2.753	2.152	-0.807	-3.297*	-1.201
	(1.699)	(1.571)	(1.899)	(1.867)	(1.831)
LABOUR	**-75.151***	**-131.283***	**-185.778***	**-172.155***	**-113.624**
	(22.529)	(48.840)	(38.797)	(29.976)	(45.896)
RGDPCAPITA	**-42.549***	**-47.201***	**-42.567***	10.075	**-36.636***
	(16.341)	(16.123)	(16.310)	(17.512)	(18.747)
GFINANCE	**-2.657***	**-4.634**	**-7.406***	**-6.101***	**-4.427**
	(0.968)	(2.316)	(1.891)	(1.305)	(1.929)
*LABOUR*GFINANCE*	**1.590***	2.681*	**4.156***	**3.775***	**2.659**
	(0.617)	(1.427)	(1.076)	(0.815)	(1.197)
OPENNESS (Exports)	-0.009	0.029	-0.085	**-0.217**	-0.098
	(0.075)	(0.094)	(0.066)	(0.094)	(0.082)
DENSITY	**-27.513**	**-26.397**	**-25.560***	-1.842	-26.178*
	(12.987)	(13.149)	(14.323)	(12.165)	(15.652)
Observations	54	54	54	54	54
R-squared	0.607	0.642	0.619	0.692	0.557
Number of countries	6	6	6	6	6
F test	**5.16***	**4.92***	**5.59***	**5.64***	**3.09***
	Identification tests				
Under-identification	**8.026**	**8.431**	**7.085**	**6.337**	**8.728**
Weak identification					
Cragg-Donald	23.023	22.486	23.325	14.007	20.111
Kleibergen-Paap rk	14.187	14.657	12.134	8.167	13.286
Overidentification	0.15	0.17	0.017	1.747	0.175

Notes: Robust standard error is in parentheses. * $0.05<p\leq0.10$. ** $0.01<p\leq0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald *F* statistics.

Table 14: Robustness Check - FE/IV Estimation Results (Country-specific effects)
Excluding Saudi Arabia

	HF	C	WF	PP	PM
L.UR	3.060*	1.306	-1.762	-1.680	-0.954
	(1.674)	(1.439)	(1.907)	(1.861)	(2.106)
LABOUR	**-98.591***	**-280.230***	-116.501*	**-125.781***	**-164.754**
	(34.117)	(59.819)	(61.763)	(43.648)	(81.734)
RGDPCAPITA	-27.086	**-38.760***	**-35.339***	-0.619	-27.439*
	(18.700)	(14.871)	(10.371)	(18.858)	(15.819)
GFINANCE	**-3.375**	**-12.259***	-1.799	-3.925*	-6.967*
	(1.446)	(3.007)	(3.591)	(2.225)	(3.879)
*LABOUR*GFINANCE*	**2.372**	**7.580***	0.992	2.431	4.373*
	(1.065)	(1.905)	(2.004)	(1.491)	(2.402)
OPENNESS (imports)	**0.183***	0.121*	**0.137***	0.078	0.040
	(0.061)	(0.064)	(0.047)	(0.066)	(0.074)
DENSITY	7.336	**10.865**	-7.704	6.316	5.377
	(5.981)	(4.938)	(6.202)	(6.010)	(6.190)
Observations	45	45	45	45	45
R-squared	0.614	0.689	0.688	0.668	0.555
Number of countries	5	5	5	5	5
F test	**9.52***	**11.97***	**11.57***	**7.23***	**6.84**
			Identification tests		
Under-identification	12.031***	13.017***	15.342***	9.722***	12.498***
Weak identification					
Cragg-Donald	13.599	16.44	29.386	12.132	18.923
Kleibergen-Paap rk	11.8	15.631	23.228	10.022	14.015
Overidentification	0.004	0.272	2.597	2.384	1.399

Notes: Robust standard error is in parentheses. * $0.05 < p \leq 0.10$. ** $0.01 < p \leq 0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald *F* statistics.

Table 15: Robustness Check - FE/IV Estimation Results (Country- and time-specific effects)
Excluding Saudi Arabia

	HF	C	WF	PP	PM
L.UR	**3.557****	1.405	-1.747	-2.297	-0.895
	(1.495)	(1.324)	(1.830)	(1.497)	(1.896)
LABOUR	-63.611	**-213.003*****	-111.546	**-141.440*****	-82.257
	(39.816)	(78.171)	(69.053)	(35.369)	(108.486)
RGDPCAPITA	**-37.690****	**-47.842*****	**-46.077*****	-4.344	**-44.956****
	(16.787)	(15.336)	(15.680)	(13.260)	(19.850)
GFINANCE	-1.834	**-8.850****	-1.889	**-4.529****	-2.810
	(1.719)	(3.864)	(3.671)	(1.803)	(5.035)
LABOUR*GFINANCE	1.146	**5.326****	0.991	**2.755****	1.647
	(1.255)	(2.437)	(2.055)	(1.158)	(3.121)
OPENNESS (imports)	**0.109****	0.065	0.077	0.037	0.012
	(0.049)	(0.058)	(0.061)	(0.051)	(0.079)
DENSITY	-26.331*	-16.772	-23.860*	1.683	-26.173
	(13.940)	(15.282)	(14.073)	(9.376)	(17.552)
Observations	45	45	45	45	45
R-squared	0.725	0.752	0.709	0.789	0.633
Number of countries	5	5	5	5	5
F test	**6.10*****	**6.64*****	**5.34*****	**10.13*****	**3.84*****
			Identification tests		
Under-identification	**5.789****	5.871*	4.602	4.871*	5.356*
Weak identification					
Cragg-Donald	13.857	15.02	19.86	11.398	17.16
Kleibergen-Paap rk	8.191	9.063	8.083	5.808	8.689
Overidentification	0.17	0.359	1.417	1.026	0.538

Notes: Robust standard error is in parentheses. * $0.05<p\leq0.10$. ** $0.01<p\leq0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald *F* statistics.

Table 16: Robustness Check - FE/IV Estimation Results (Country-specific effects)
Including *either LABOUR* or *GFINANCE*; excluding interaction term

	Social Contract	HF	C	WF	PP	PM
L.UR	1.472	2.893*	1.798	0.924	-0.251	0.783
	(1.542)	(1.489)	(1.236)	(1.488)	(1.430)	(1.542)
GFINANCE	-0.110					
	(0.118)					
LABOUR		**-19.720*****	**-39.007*****	**-53.084*****	**-43.481*****	**-19.222****
		(5.594)	(8.714)	(18.119)	(9.380)	(9.281)
RGDPCAPITA	**-29.652*****	-16.983	**-20.815****	**-27.147*****	-6.729	**-23.910****
	(11.249)	(11.324)	(9.377)	(10.353)	(11.067)	(12.039)
OPENNESS (imports)	0.117*	**0.211*****	**0.247*****	**0.131*****	0.130*	**0.155****
	(0.062)	(0.062)	(0.070)	(0.050)	(0.068)	(0.062)
DENSITY	10.846*	6.644	7.342	1.616	4.513	7.411
	(5.818)	(5.100)	(4.842)	(5.981)	(5.017)	(5.372)
Observations	54	54	54	54	54	54
R-squared	0.435	0.514	0.557	0.519	0.555	0.455
Number of countries	6	6	6	6	6	6
F test	**4.98*****	**7.80*****	**9.62*****	**10.6*****	**8.03*****	**5.95*****
			Identification tests			
Under-identification	**16.096*****	**15.809*****	**15.947*****	**18.713*****	**13.425*****	**16.682*****
Weak identification						
Cragg-Donald	39.707	31.337	37.333	45.817	26.741	33.941
Kleibergen-Paap rk	41.349	36.033	48.296	52.905	36.055	33.972
Overidentification	2.933*	2.534	2.629	2.953*	0.418	2.944*

Notes: Robust standard error is in parentheses. * $0.05 < p \leq 0.10$. ** $0.01 < p \leq 0.05$. *** $p \leq 0.01$. Cragg-Donald and Kleibergen-Paap rk are Wald *F* statistics.

Table 17: Robustness Check - FE/IV Estimation Results (Country-specific effects)
Including *both LABOUR* and *GFINANCE*; excluding interaction term

	HF	C	WF	PP	PM
L.UR	2.830*	1.771	0.919	-0.222	0.818
	(1.517)	(1.272)	(1.554)	(1.467)	(1.584)
LABOUR	**-19.093***	**-38.909***	**-52.166***	**-42.237***	-17.866*
	(5.653)	(8.392)	(18.562)	(9.876)	(9.574)
RGDPCAPITA	-16.749	-19.413**	-26.667**	-6.233	-23.833**
	(11.585)	(9.854)	(10.591)	(11.501)	(12.082)
GFINANCE	-0.071	-0.124	-0.057	-0.101	-0.059
	(0.114)	(0.095)	(0.176)	(0.128)	(0.126)
OPENNESS (imports)	**0.202***	**0.234***	**0.125**	0.120*	**0.147**
	(0.067)	(0.073)	(0.051)	(0.070)	(0.067)
DENSITY	7.303	8.356*	2.209	5.492	8.055
	(5.395)	(5.052)	(6.204)	(5.350)	(5.615)
Observations	54	54	54	54	54
R-squared	0.516	0.565	0.521	0.559	0.457
Number of countries	6	6	6	6	6
F test	**6.88***	**8.99***	**8.66***	**7.2***	**4.77***
Under-identification	**13.562***	**13.296***	**17.417***	**11.833***	**14.932***
Weak identification					
Cragg-Donald	33.022	39.11	46.937	28.594	35.385
Kleibergen-Paap rk	30.577	37.786	50.499	31.842	30.129
Overidentification	2.588	2.694	2.954*	0.536	2.977*

Notes: Robust standard error is in parentheses. * 0.05<p≤0.10. ** 0.01<p≤0.05. *** p ≤ 0.01. Cragg-Donald and Kleibergen-Paap rk are Wald *F* statistics.