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Youth Unemployment and Productivity-Pay in the GCC Countries

Wasseem Mina

Abstract

Although the total youth unemployment rate in the Gulf Cooperation Council countries is less than in other high-income countries, the female youth unemployment rate is more than quadruple the male youth unemployment rate compared to equal rates in high-income countries. The gender bias in youth unemployment is attributable to the generous social contract GCC nationals enjoy as well as the largely conservative GCC culture that perceives a more important role of women in the household than in the job market. The generous social contract is also a key factor in the duality of the GCC labor markets with one segment for national labor and the other for foreign labor. Foreign labor constitutes most of the labor force, and the link between pay and productivity is strong in the foreign labor segment indicating labor market efficiency. This chapter investigates whether the presence of strong pay-productivity links in both labor market segments reduces the national youth unemployment rates in the GCC countries. Empirical evidence shows that linking pay to productivity robustly reduces the total and female youth unemployment rates. The influence is strongest on the female youth unemployment rate, however. Productivity-pay helps reduce youth unemployment and the associated gender bias.

Keywords: youth unemployment, female youth unemployment rate, male youth unemployment, labor markets, productivity-pay, GCC

1. Introduction

The oil-rich Gulf Cooperation Council (GCC) countries are high-income countries. They include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). Over the past two decades (2000–2020), Qatar, UAE, and Bahrain had the highest population growth rates of 8.2 percent, 5.9 percent, and 4.8 percent, respectively, followed by Oman, Kuwait, and Saudi Arabia at rates of 4.1 percent, 3.8 percent, and 2.6 percent.[1] The corresponding population growth rates for the Arab world, high income countries, and the world total are 2.2 percent, 0.6 percent, and 1.2 percent, respectively.

Despite the high population growth rates of the GCC countries, youth unemployment rates were lower than the rates in other high-income countries. High youth unemployment can constrain long-term growth and reduce economic, social,

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[1] Figures are based on the World Bank's World Development Indicators (WDI).

and political stability [1].[2] As **Table 1** shows, the total youth unemployment rate in 2007–2017 averaged 28.5 percent, 12.5 percent, and 11.9 percent in Saudi Arabia, Oman, and Kuwait, respectively.[3] In comparison, the rate amounted to 6.9 percent, 5.3 percent, and 1 percent in the UAE, Bahrain, and Qatar, respectively.[4]

Compared to other high-income countries, the total youth unemployment rate in the GCC countries is lower. In 2007–2017, the total youth unemployment rate amounted on average to 11 percent in the GCC countries compared to 18 percent in a sample of 44 high-income countries.[5] The difference is even larger for the male youth rate: The male youth unemployment rate is 8.5 percent in the GCC countries compared to 18.1 percent in the other high-income countries. The GCC countries therefore fared well relative to other high-income countries with respect to the total and male youth unemployment rates.

Female youth unemployment is a serious issue in the GCC countries, however.[6] The female youth unemployment rate is 20.6 percent compared to 8.5 percent for the male youth unemployment rate, resulting in a ratio of female-to-male youth unemployment rate of 4.5.[7,8] In the sample of 44 other high-income countries, the male and female youth unemployment rates are almost equal (18.1 percent).

In addition, the GCC countries experience female youth unemployment rate heterogeneity. The female youth unemployment rate is higher in Saudi Arabia (53 percent), Oman (24.6 percent) and Kuwait (16.7 percent) compared to Bahrain (12.8 percent), UAE (11.2 percent), and Qatar (5.5 percent). This is perhaps not unusual given the pattern of the total youth unemployment rate in the two groups of countries.

However, the ratio of female-to-male youth unemployment rate is highly pronounced in Qatar and Bahrain. Despite enjoying low total youth unemployment rate, Qatar and Bahrain have the highest female-to-male youth unemployment rate

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[2] Youth unemployment refers to the labor force ages 15–24 without work but is available for and seeking employment. Youth unemployment rate measures the extent of youth unemployment. The youth unemployment rate is measured as the number of youth unemployed relative to the total labor force between ages 15–24.

[3] This rate includes both male and female youth unemployment.

[4] The GCC countries can be therefore perceived as two heterogenous groups with respect to the total youth unemployment rate.

[5] 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.

[6] Another useful metric of an active (female) labor force is the (female) labor force participation rate. This metric accounts for ages 15 and above and is not restricted to (female) youth. It is calculated as the sum of all (female) workers who are employed or actively seeking employment divided by the total noninstitutionalized, civilian (female) working-age population.

[7] Based on WDI data, the period average female labor force participation rate is 39.9 percent, which is less than half the male labor force participation rate (86.9 percent). The period average female labor force participation rate is lowest in Saudi Arabia (20 percent), Oman (28.4 percent), and Bahrain (43.1 percent). See the Appendix for information on the individual GCC countries labor force participation rate for both genders. In the other high-income countries, the period average female labor force participation rate amounts to 53.8 percent. The lowest rates are in Malta (38 percent) and Italy (39 percent).

[8] International Labor Organization data suggests regional female labor participation rate is lower in earlier years [2]. Female labor participation rate for Arab states was 12.8 percent in 2000 and dropped to 9.5 percent in 2011. The Arab states include Bahrain, Iraq, Jordan, Kuwait, Lebanon, Occupied Palestinian Territory, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, and Yemen.

	Total (%)	Male (%)	Female (%)	Female-to-Male Ratio
Bahrain	5.3	2.6	12.8	4.9
Kuwait	11.9	9.9	16.7	1.7
Oman	12.5	10.2	24.6	2.4
Qatar	1.0	0.4	5.5	13.6
Saudi Arabia	28.5	21.7	53.0	2.5
UAE	6.9	5.9	11.2	1.9
Total	11.0	8.5	20.6	4.5
Memo item				
Other high-income countries	18.01	18.06	18.09	1.02

Table 1.
Youth unemployment rates in the GCC countries (2007–2017; period average).

ratio of nearly 14 and 5, respectively. The average female youth unemployment rate is nearly 14-fold the male youth unemployment rate in the case of Qatar and five-fold in the case of Bahrain.

The purpose of this chapter is to explain youth unemployment in the GCC countries. I start by discussing the reasons for the gender bias in female youth unemployment (Section 2). The presence of generous existing social contract for GCC nationals as well as cultural factors are offered as explanations for the gender bias. The social contract is key to understanding the dual nature of GCC labor markets. To be able to reduce the youth unemployment rate, it is important to understand the degree of labor market efficiency. I discuss GCC labor markets efficiency and posit that it reflects more the foreign labor segment (Section 3). I conjecture that having a strong pay-productivity link in *both* the national and foreign labor segments can reduce the female and consequently the total youth unemployment rate (Section 4). This conjecture is based on a graphical analysis of the relationship between youth unemployment and the pay-productivity link in 124 non-GCC countries as well as in the six GCC countries. To explain youth unemployment empirically, I specify and estimate an empirical model (Section 5). The empirical results show that linking pay to productivity reduces the female and total youth unemployment rates (Section 6). I conclude with a policy recommendation (Section 7).

2. Social contract and labor market segmentation

The generous implicit social contract the GCC states have extended to its nationals is believed to have shaped their expectations and decisions to work. The social contract includes highly paid and protected government jobs as well unemployment benefits [3–5]. It also includes free education, health care, and child support. At retirement, generous public pensions are provided.

The highly paid government jobs have created high expectations about jobs in the private sector including high reservation wages. Thus, national youth on the labor supply side may offer their labor services at high wage rates. On the labor demand side, at high wage rates the demand for national youth labor services is normally low especially if unaccompanied by high productivity. The interaction of the supply and demand for labor leaves a surplus of national youth unemployed. The high reservation wages and unemployment benefits may reduce job search and increase the duration of unemployment.

With oil revenues financing the generous (implicit) social contract and economic activities in the GCC economies, the hiring of foreign labor was inevitable given the economic growth following oil exploration and production, and the limited indigenous population, labor force or human capital.[9] The stipulated benefits in foreign labor (explicit) contracts do not on average match those of GCC nationals. Accordingly, the GCC labor markets are segmented *de facto*.

In addition to the social contract and the resulting labor market segmentation, and the relatively less costly foreign labor, cultural factors weigh in towards more female youth unemployment. The GCC culture is largely conservative as suggested by gender segregation at public schools and universities. Many females prefer to remain at the household as opposed to working or remaining on the job market.[10] It should be noted however that the literacy rate gender parity index for youth shows that both genders are at par.[11]

3. Labor market efficiency: Pay and productivity

The World Economic Forum's Global Competitiveness Index (GCI) assesses labor market flexibility and efficiency. The assessments are based on executive opinion survey. Businesses included in the survey represent the sectors they operate in. These comprise agriculture, manufacturing industry, non-manufacturing industry, and services. The number of businesses surveyed depends on the contribution of the sector to GDP.[12] Surveyed businesses are in principle not necessarily large corporations. They may be small or medium in size.

Linking pay to productivity, performance-based pay, or performance-pay for short, is a labor market efficiency indicator. Given the segmented nature of the GCC labor markets and the significant presence of foreign workers in the GCC countries, the indicator tends to reflect the strength of the relationship between productivity and pay in the foreign labor segment.[13] Although the pay-productivity link is perceived as strong relative to the other high-income countries, labor is non-unionized and collective bargaining is absent. This may partially explain the link strength.[14]

Table 2 presents the 2007–2017 period average of the linking pay to productivity indicator for each of the GCC countries. A score of 1 indicates that the two are completely unrelated, while a score of 7 indicates they are strongly related. The table shows that Qatar and the UAE have the highest average scores, while Kuwait has the lowest. It also shows that the GCC countries, as a group, have a higher average than other high-income countries.

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[9] The average annual growth rates for Bahrain is 3.77 percent (1981–2020), Kuwait 4.57 percent (1993–2019), Oman 8.38 percent (1966–2019), Qatar 8.43 percent (2001–2020), Saudi Arabia 4.86 percent (1969–2020), and UAE 4.86 percent (1976–2019). The rates are mathematical averages of annual growth rates obtained from the World Bank's World Development Indicators (WDI) over the specified periods.

[10] If they decide accordingly not to search for jobs, they should not be considered as part of the labor force. In cases of divorce, females may start searching for jobs, however.

[11] This is based on the WDI 2017 literacy rate gender parity index for youth for Bahrain, Kuwait, Oman, Qatar, and Saudi Arabia and the 2015 index for the UAE.

[12] Non-manufacturing industry includes mining and quarrying, electricity, gas and water supply, and construction.

[13] There is no collective bargaining in the GCC labor markets though.

[14] The strength of the link may depend on business professional management in case of large businesses.

Country	Average
Bahrain	4.53
Kuwait	3.84
Oman	4.19
Qatar	5.09
Saudi Arabia	4.57
UAE	5.03
Total	4.54
Memo item	
Other high-income countries	4.27

Table 2.
The pay-productivity link (2007–2017; period average).

4. The relationship between labor market efficiency and youth unemployment

Several IMF working papers find that labor market flexibility reduces unemployment [6–8]. Labor market flexibility, in particular hiring and firing policies and hiring costs, was found to reduce over unemployment, youth unemployment and long-term unemployment [6]. It was also found to reduce unemployment in Algeria, a resource-rich, labor-abundant North African country [7]. Flexible labor markets were also found to help fending off financial crises [8].

Does labor market *efficiency*, measured by the pay-productivity link, influence the youth unemployment rate? And what is the nature of the relationship? To answer these two questions, I undertake in this chapter a graphical analysis of this relationship in 124 high-income, upper- and lower-middle income, and low-income
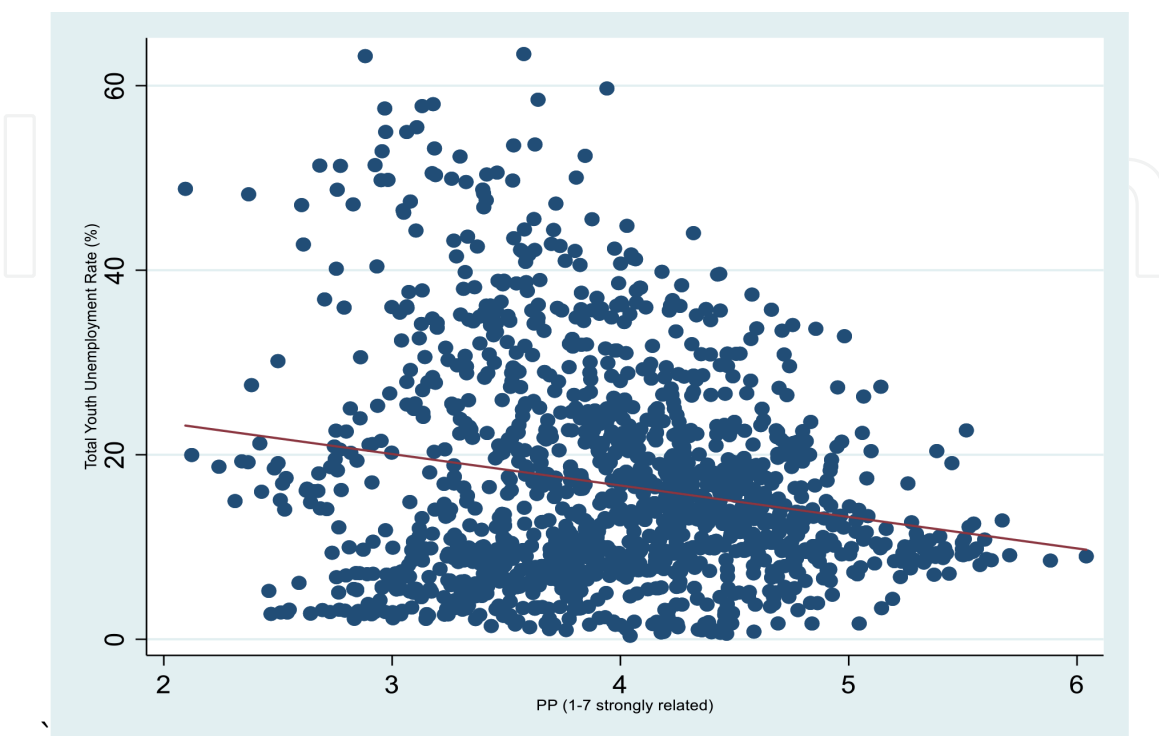

Figure 1.
Total youth unemployment rate and performance-pay: Large country sample evidence.
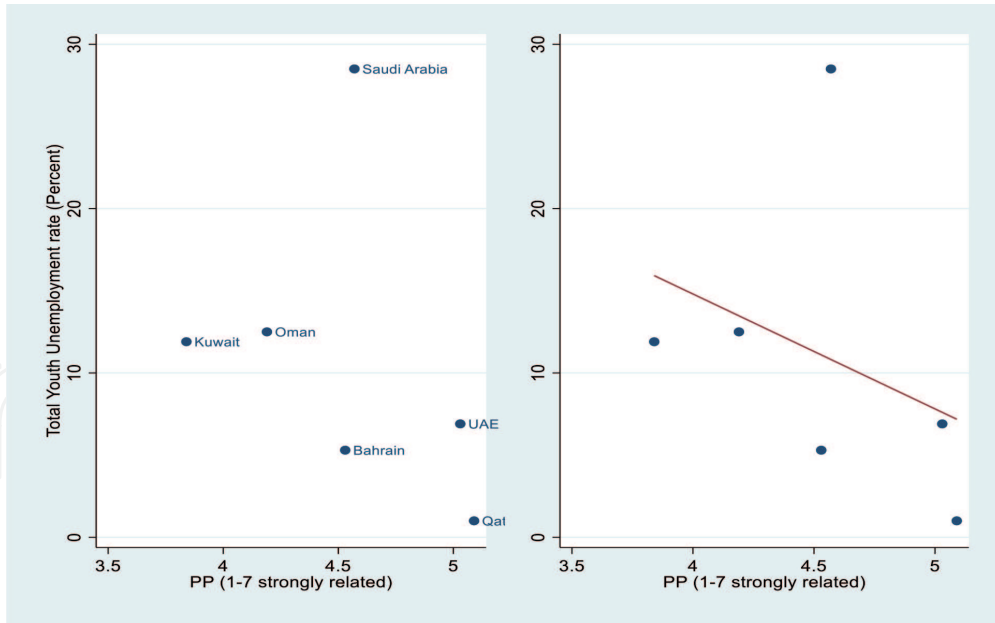
Figure 2.
Total youth unemployment rate and performance-pay in GCC countries.
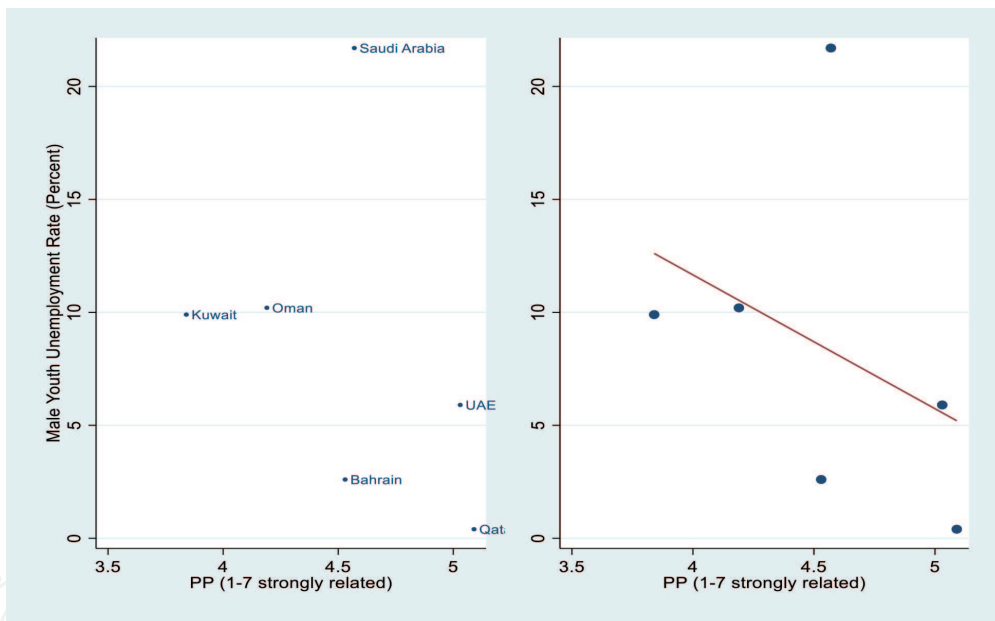

Figure 3.
Male youth unemployment rate and performance-pay in GCC countries.

countries as well as in the six high-income GCC countries. **Figure 1** suggests the presence of a negative relationship between the total youth unemployment rate and the pay-productivity link in a large sample of non-GCC countries.[15] This relationship still holds if I instead examine the influence of lagged pay-productivity link on the total youth unemployment rate.

Figures 2–**4**, which are based on 2007–2017 period averages, also suggest the presence of a negative relationship in GCC countries for the total, male, and female youth unemployment rates.[16]

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[15] Graphical analysis also shows the youth unemployment rate negatively influences the pay-productivity link. Figure is available from the author.

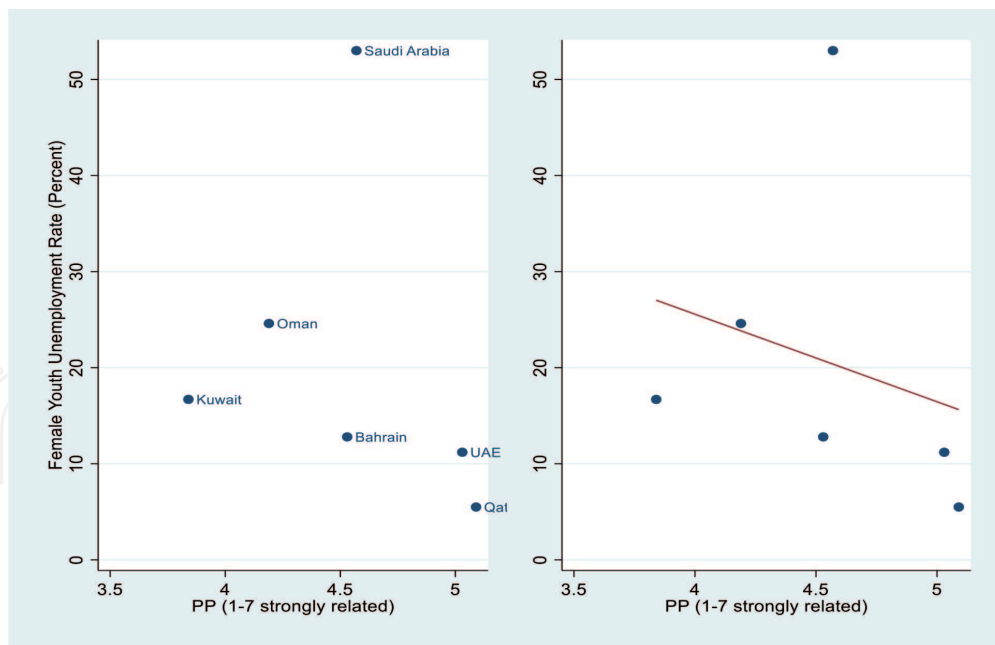[16] The figures are based on 2007–2017 period averages.

Figure 4.
Female youth unemployment rate and performance-pay in GCC countries.

Labor economics theory explains this relationship in terms of the substitution effect of higher wages on labor supply. Higher wages associated with more productivity encourage workers to increase their work hours. Alternatively, higher wages encourage workers to reduce their leisure hours in response. At the macro level, when youth observe that work effort and productivity are rewarded, they search for jobs and take employment. This in turn reduces the youth unemployment rate.

Therefore, I conjecture that having a strong pay-productivity link in *both* the national and foreign labor segments can reduce the female and consequently the total youth unemployment rate. In explaining the different youth unemployment rates – total, male, and female, I will assume in the next section that the strength of pay-productivity link is equal in both labor market segments.

5. Explaining youth unemployment in the GCC countries - the empirical model

The negative relationship between the different youth unemployment rates and productivity-pay observed in the above graphs is investigated empirically. Building on [9] who examines the relationship between labor market flexibility and youth unemployment, the empirical model includes the pay-productivity link as an explanatory variable.[17] In this chapter, I explain the different youth unemployment rates (total, male, or female). The empirical model is now expressed as:

$$UR_{it} = \beta_0 + \beta_1 PP_{it} + \beta_2 GROWTH_{it} + \beta_3 GFINANCE_{it} + \beta_4 URBAN_{it} + \varepsilon_{it}$$

where *UR* is youth unemployment rate. *PP* is the pay-productivity link indicator (log). *GROWTH* is economic growth, a proxy for the expansion in

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[17] In [6], control variables include an output gap measure to control for business cycle fluctuations, the size of government, the degree of trade openness, the rate of urbanization, population density, a crisis dummy, and the lagged level of unemployment rate(s).

job opportunities. It is measured by the annual GDP per capita growth rate. *GFINANCE* is government fiscal expenditures, which account for the major employment role the GCC governments play in hiring nationals. *GFINANCE* is measured by the general government final consumption expenditures (as a percentage of GDP). *URBAN* is the degree of urbanization in the economy. It accounts for the geographic concentration of business in urban areas and is measured by the percentage of urban to total population. ε is the error term. The subscripts *i* and *t* are country and time indexes.

Data on *PP* are obtained from GCI. Data on the other variables are obtained from WDI. The data covers the period 2007–2017.

Panel data models are used in estimation. I account for both the GCC country- and time-specific effects. Country-specific effects may include factors such as culture and traditions, which do not change by time at least in the short and medium terms. Time-specific effects are related to global factors, such as oil prices or foreign direct investment, which are not country-specific and may impact the GCC countries at specific years.

6. Empirical results

Table 3 provides the 2007–2017 period average for the model variables. The table shows four interesting observations. First, Qatar and the UAE have the strongest pay-productivity links, as indicated by their scores. Second, Saudi Arabia and Oman have the highest level of fiscal expenditures relative to GDP. Yet they have the highest youth unemployment rates. Third, more than three quarters of the GCC population live in urban areas. Finally, the GDP per capita growth rates are negative for Kuwait, Oman, Qatar, and UAE.

The correlation between the different variables reveals interesting initial relationships, as **Table 4** shows. *PP* is negatively and statistically correlated with the total and male youth unemployment rates.[18] Government expenditures, *GFINANCE*, are positively correlated with all youth unemployment rates, while the degree of urbanization, *URBAN*, is negatively correlated with them all. The correlation between the GDP per capita growth rate, *GROWTH*, and the different youth unemployment rates is very low.

Country	UR			PP	GROWTH	GFINANCE	URBAN
	Total	**Male**	**Female**				
Bahrain	5.1	2.5	12.5	4.5	0.3	14.3	88.7
Kuwait	11.2	10.0	13.7	3.9	−3.3	16.8	100.0
Oman	12.4	10.4	22.2	4.3	−0.8	20.4	76.8
Qatar	1.2	0.5	6.2	5.1	−0.1	14.0	98.5
Saudi Arabia	29.2	22.3	53.8	4.6	1.2	22.1	82.3
UAE	7.0	6.0	11.2	5.0	−2.8	9.8	84.4
Total	11.0	8.6	19.9	4.6	−0.9	16.2	88.5

Table 3.
Empirical model variables (2007–2017; period averages).

_____

[18] Pairwise correlated at the 5 percent statistical significance level.

	PP	*UR*-Total	*UR*-Male	*UR*-Female	*GROWTH*	*GFINANCE*	*URBAN*
UR-Total	**−0.275**	1	**0.986**	**0.965**	0.090	**0.655**	**−0.454**
UR-Male	**−0.313**	**0.986**	1	**0.915**	0.053	**0.617**	**−0.445**
UR-Female	−0.180	**0.965**	**0.915**	1	0.136	**0.684**	**−0.481**
GROWTH	0.147	0.090	0.053	0.136	1	0.105	−0.101
GFINANCE	**−0.396**	**0.655**	**0.617**	**0.684**	0.105	1	−0.241
URBAN	−0.055	**−0.454**	**−0.445**	**−0.481**	−0.101	−0.241	1

Notes: Bold fonts indicate statistical significance at the 5 percent level.

Table 4.
Correlation matrix.

6.1 Fixed effects model estimates

Empirical results are presented in **Table 5**. As mentioned above, the estimation methodology accounts for both country and time effects. Thus, the table provides estimates by country and year.

	Total	Male	Female
PP	**−13.235a**	**−12.796a**	**−21.837a**
	(2.030)	(2.856)	(7.391)
GROWTH	**−0.068b**	−0.035	**−0.215b**
	(0.026)	(0.027)	(0.087)
GFINANCE	0.044	−0.115	0.299
	(0.098)	(0.132)	(0.283)
URBAN	**−0.487a**	**−0.507a**	0.683
	(0.138)	(0.147)	(0.439)
Kuwait	**9.507a**	**11.709a**	**−10.992b**
	(1.418)	(1.367)	(4.449)
Oman	0.469	1.844	**14.534b**
	(2.095)	(2.299)	(6.719)
Qatar	2.420	**4.384b**	**−10.414b**
	(1.556)	(1.696)	(5.062)
Saudi Arabia	**20.998a**	**17.753a**	**44.035a**
	(1.455)	(1.816)	(4.476)
UAE	**1.113b**	**1.961a**	**4.513a**
	(0.491)	(0.619)	(1.318)
Year−2007	**−2.203a**	-2.004c	−1.744
	(0.669)	(1.054)	(2.452)
Year-2008	**−1.617b**	−1.873	−0.161
	(0.786)	(1.127)	(2.398)
Year-2009	**−1.631b**	−1.333c	−0.825
	(0.661)	(0.765)	(1.940)
Year-2010	−1.195c	−1.079	−0.096

	Total	Male	Female
	(0.611)	(0.733)	(2.256)
Year-2011	−1.194c	−1.369	0.356
	(0.682)	(0.874)	(1.813)
Year-2012	**–1.207b**	**–1.790b**	1.014
	(0.552)	(0.763)	(1.703)
Year-2013	−0.902c	−1.207c	0.032
	(0.502)	(0.667)	(1.540)
Year-2014	−0.223	−0.372	0.087
	(0.428)	(0.574)	(1.563)
Constant	68.707a	69.584a	−19.331
	(13.730)	(14.933)	(44.733)
Observations	54	54	54
R-squared	0.996	0.987	0.987

Notes: Robust standard errors in parentheses. a, b and c indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 5.
Fixed effects model estimates (LSDV estimation).

The results confirm the negative relationship between productivity-pay and youth unemployment observed in **Figures 2**, **3** and **4**. In the three columns, the *PP* coefficients are negative suggesting a negative influence of the productivity-pay link on the three youth unemployment rates. However, the absolute coefficient value is biggest for the female youth unemployment rate. The coefficient indicates that a one percent improvement in the strength of the pay-productivity link reduces the total, male, and female youth unemployment rates by 0.13 percentage point, 0.12 percentage point, and about 0.22 percentage point, respectively. These coefficients suggest therefore that the influence on the female youth unemployment rate is almost double the influence on the male youth unemployment rate. The pay-productivity link plays a relatively more significant role in reducing female youth unemployment in the GCC countries.

GROWTH also has a negative influence, as we would normally expect. It is statistically significant in the total and female youth unemployment rate models. Interestingly, both *PP* and *GROWTH* have equal coefficients: A one percentage point increase in GDP per capita growth rate reduces the female youth unemployment rate by 0.22 percentage point. In contrast to [1], *GFINANCE* does not have a statistically significant influence on the different unemployment rates. The degree of urbanization, *URBAN*, reduces the total and male youth unemployment rates but not the female youth unemployment rate.

The coefficients of the country dummies – the country-specific effects - suggest that the country effects do not reduce total or male youth unemployment. This is obvious in Kuwait, Saudi Arabia, UAE and Qatar. Only in Kuwait and Qatar, the country-specific effects reduce the female youth unemployment rate.

The coefficients of the time dummies are negative and statistically significant in the total youth unemployment rate model. The time dummies are statistically significant at least at the 5 percent level in 2007–2009 and 2012. The increase in the world oil prices in 2006–2016, as **Figure 5** shows, may provide an explanation for this outcome. The oil price increase possibly feeds through GDP growth rate reducing the total youth unemployment rate.
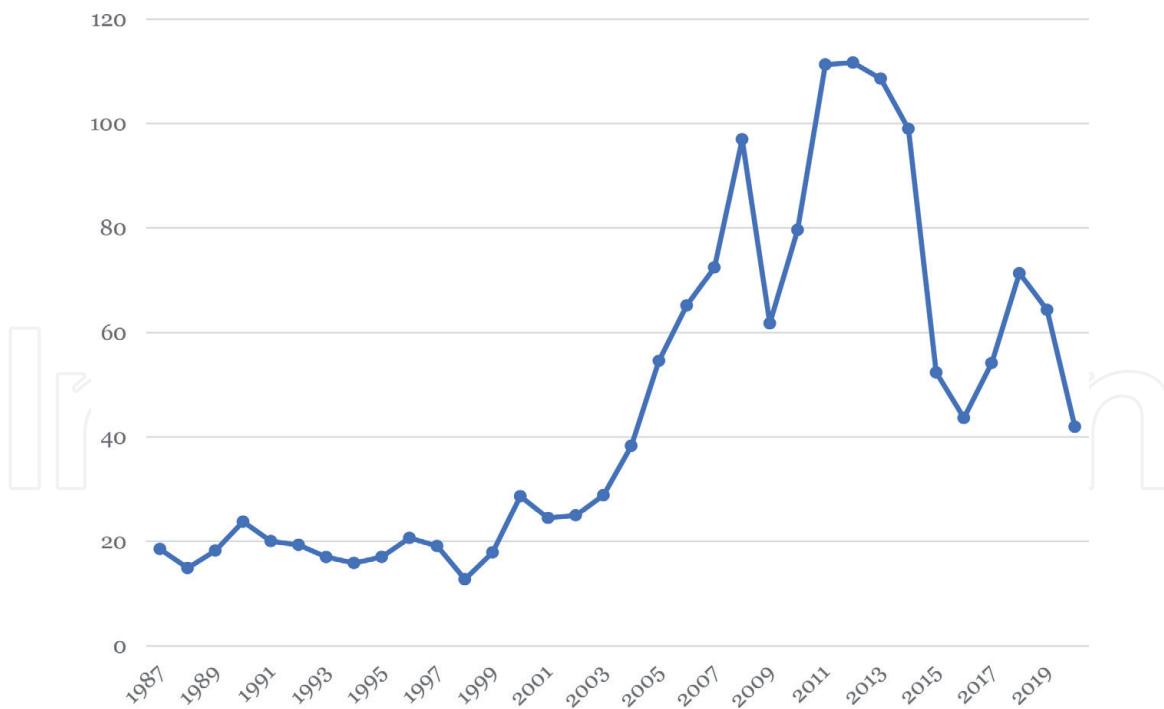
Figure 5.
World crude (Brent) oil prices (1987–2020; $/barrel).

6.2 Feasible generalized least squares estimates

Although the GCC countries seem alike, they may be different from each other in how the youth unemployment rate is explained by the empirical model. Thus, I test for panel-level heteroscedasticity. I also test for autocorrelation in the error term. If either or both empirical issues are present, I plan to adopt a feasible generalized least squares (FGLS) estimation methodology.

Since the likelihood ratio $\chi 2$ test rejects the null hypothesis of panel-level homoscedasticity at the one percent level for the three youth unemployment rates, as **Table 6** shows, I adopt FGLS accounting for panel heteroskedasticity. The Wooldridge *F* test for autocorrelation fail to reject the null hypothesis of no panel-level autocorrelation in the case of total youth unemployment rate. However, the test rejects the null hypothesis at the five percent level in the case of male and female youth unemployment rates. I account for serial correlation in FGLS estimation of these two youth unemployment rates.

FGLS estimation results are presented in **Table 7**. Results confirm the negative influence that linking pay to productivity has on the total and female youth unemployment rates but not on the male youth unemployment rate. An improvement in the pay-productivity link strength by one percent reduces the total and female youth unemployment rate by 0.23 percentage point and 0.21 percentage point, respectively.

UR	**Heteroscedasticity test**	**Autocorrelation test**
Total	**116.74a**	3.679
Male	**147.77a**	**13.108b**
Female	**152.68a**	**6.581b**

Notes: The null hypothesis for the heteroscedasticity test is panel-level homoscedasticity. The null hypothesis for the autocorrelation test is the absence of (across) panel autocorrelation. a, b and c indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 6.
Panel heteroscedasticity and autocorrelation tests.

	(1)	(2)	(3)
	Total	Male	Female
PP	–22.693a	–4.018	–20.603a
	(6.102)	(2.850)	(4.633)
GROWTH	–0.123	–0.019	–0.108c
	(0.098)	(0.032)	(0.058)
GFINANCE	0.437a	0.080	0.399a
	(0.157)	(0.051)	(0.098)
URBAN	–0.318a	–0.028	–0.326a
	(0.082)	(0.079)	(0.095)
Constant	64.853a	15.790	67.470a
	(14.247)	(9.790)	(13.569)
Observations	54	54	54
Number of countries	6	6	6
Wald test	42.76a	4.72	47.32a
Panel heteroskedasticity	Yes	Yes	Yes
Panel autocorrelation	No	Yes	Yes

Table 7.
FGLS estimation results.

In contrast to the results of **Table 5**, empirical evidence shows that government expenditures increase the youth unemployment rates. A one percentage point increase in the share of government consumption expenditures in GDP increases the total and female youth unemployment rate by 0.44 percentage point and 0.4 percentage point, respectively. This result is in line with [1], who finds that an increase in government consumption expenditures (percentage of GDP) by one percentage point increases the total youth unemployment rate.

It might be the case that through consumption expenditures that the GCC governments put incomes in the hands of households, which discourage youth from searching for and taking jobs. From labor economics theory perspective, this is the negative (positive) income effect on work (leisure) hours. An increase in incomes discourage youth from increasing their labor supply. Alternatively, an increase in incomes encourage youth to take more leisure hours.

In contrast to the positive influence of government finance and like the result of **Table 5** for total youth unemployment, the degree of urbanization reduces the total youth unemployment rate. It also reduces the female youth unemployment rate. In addition, the GDP per capita growth rate reduces only the female youth unemployment rate but only marginally statistically.

7. Conclusion and policy recommendation

The empirical analysis of the two estimation methodologies supports the beneficial influence of linking pay to productivity on the total and female youth unemployment rates. Labor market efficiency can help reduce youth unemployment. This suggests that having an equal link strength in both labor market segments rewards the national youth, especially females.

The adoption of policies that increase labor market flexibility and efficiency to reduce (youth) unemployment is not unusual. Spain, for example, in 2010 and

2012 relaxed contract termination, reduced severance pay, notice period, and business social security contributions [1, 10].[19] The strength of collective bargaining was reduced, and enterprise-level agreement increased [10]. Firms have been able to withdraw from collective bargaining agreements one year from the agreement expiry date. Despite increasing labor market flexibility, youth unemployment remained high due to the *downward rigidity* of nominal wages, among other reasons [1]. The implicit GCC social contracts result in downward nominal wage rigidity.

The chapter recommends the adoption of labor efficiency policies and practices. Paying labor its economic value establishes efficiency in both labor market segments and encourage national youth to search for and take jobs not just in the government and state-owned enterprises – the traditional employer of nationals, but also in the private sector. Estimation results suggest that the magnitude of influence on female youth unemployment is relatively strong. GCC policy makers should be well-versed about the importance of the pay-productivity link and its implications for human resource management at the organization level. The obtained results suggest that national female youth are motivated by pay rewards.

Besides, efficiency helps clear the negative perceptions about labor market segmentation and the ensuing pay unfairness, and the gender bias. Labor efficiency helps in the efficient use of available domestic labor resources and in less reliance on foreign labor. By encouraging nationals of both genders to seek opportunities in the private sector, the adoption of labor efficiency policies and practices can help nationals of both genders develop a gamut of work-related skills including entrepreneurship. Entrepreneurship can help in job creation and reducing youth unemployment.

Finally, although this chapter makes the case of linking pay to productivity to *reduce the youth unemployment challenge*, I should point out though there is no one-solution-fit-all if the goal of reduction of the youth unemployment rates is regarded as merely political. GCC policymakers may consider alternative solutions to youth unemployment in changing economic, political, social environment. The remaining reality, however, is that each adopted solution has pros and cons that should be considered.

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Conflict of interest

The author declares no conflict of interest.

Author note

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[19] Severance pay was reduced by more than 50 percent from 45 to 20 days. Notice period was reduced from 30 to 15 days regardless of length of employment.

Appendix

Labor Force Participation Rates.

Country	Male	Female
Bahrain	86.9	43.1
Kuwait	85.4	47.3
Oman	83.9	28.4
Qatar	94.6	53.9
Saudi Arabia	76.7	20.0
UAE	93.9	46.5
Total	86.9	39.9
Memo item		
Other high-income countries	68.7	53.8

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