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# Labor Market Efficiency and Youth Unemployment in the MENA Region

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## Abstract

The Arab countries of the MENA region adopted a state-led development path in the sixties and seventies. Since then, the government and the public sector have become the main owners of factors of production and labor force employers (Cammett et al., 2015). Salehi-Isfahani (2012) projected high youth unemployment rate to be a key challenge.

The purpose of this paper is to qualitatively discuss the development of youth unemployment over time in the Arab world and empirically examine the determinants of youth unemployment. Data shows that high youth unemployment is a challenge. Using system GMM estimation methodology and panel data on the period 2007-2017, empirical evidence shows that labor market efficiency and growth reduce youth unemployment rate, while education quality increases it. The results shed light on the needed policies to tackle youth unemployment and achieve social stability.

***JEL:*** J60; J64; J68; E24

***Keywords***: Youth unemployment; Labor markets; Growth; Arab countries; MENA; State-led development

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# Labor Market Efficiency and Youth Unemployment in the MENA Region

## 1. Introduction

The Arab countries of the MENA region adopted a state-led development path in the sixties and seventies.[3] Since then, the government and the public sector have become the main owners of the factors of production and the main labor force employer (Cammett et al., 2015). As a result of the choice to adopt the state-development path, Salehi-Isfahani (2012) projected a few employment challenges have manifested themselves: high youth unemployment, low skills and productivity of labor, and long waiting times between graduation and landing the first job in the government and public sector.

The high youth unemployment challenge of the Arab countries associated with the state-led development path is the focus of this research. In this paper, we discuss qualitatively the development of youth unemployment over time in the Arab countries and then empirically examine the determinants of youth unemployment.

The paper is structured as follows. In section 2, we discuss the development of youth unemployment in the Arab countries. Section 3 provides a brief literature review of the youth unemployment literature. Section 4 specifies the empirical model, while section 5 discusses the estimation methodology and results. Section 6 concludes.

## 2. Youth and Youth Unemployment in the Arab Countries

To assess the high youth unemployment manifestation of state-led development in the Arab countries, we profile the share of youth in population over time. Table 1 provides data on the share of youth (ages 15-24) in population since the sixties, when Arab countries embarked on a state-led development strategy.

**[Insert Table 1 here.]**

The average share of youth in the population increased slightly from an average of 19.2 percent of total population over the earlier four decades (1961-1999) to 19.8 percent the last two

[3] In this paper, we define the MENA region Arab countries to include Algeria, Djibouti, Egypt, Iraq, Jordan, Lebanon, Libya, Mauritania, Morocco, Somalia, Sudan, Syria, Tunisia, State of Palestine, and Yemen.

decades. Youth share increased in 11 of the 15 countries (Djibouti, Egypt, Iraq, Jordan, Libya, Mauritania, Somalia, Palestine, Sudan, Syria, and Yemen).

Table 2 presents average youth unemployment rates. Data suggests the average youth unemployment rate increased from 23.4 percent in 1991-2000 to 26.4 percent in 2001-2010. However, the rate declined to 24.7 percent in the post Arab Spring period (2011-2019). The average youth unemployment rates were higher in Algeria, Jordan, Libya, and Tunisia compared to the other countries.

**[Insert Table 2 here.]**

Based on these statistics, high youth unemployment can certainly be considered a challenge, as Salehi-Isfahani (2012) projected. Accordingly, we look into the factors causing youth unemployment.

## 3. Determinants of Youth Unemployment – A Brief Literature Review

Providing a comprehensive review of the determinants of youth unemployment literature is beyond the scope of this paper. We only review recent studies of youth unemployment determinants.

In a recent study of 28 EU countries in 2008-2018, Bal-Domańska (2021) identifies the determinants of youth (un)employment in terms of economic, structural and technological change, labor regulations, and knowledge factors. Economic factors include economic development, GDP growth rate, job creation and employment. According to Okun's law, GDP growth rate reduces the unemployment rate; youth unemployment rate is also sensitive to economic growth. Structural and technological factors relate to the structural and sectoral transformation of the economy. Structural and technological change can be beneficial to youth, if youth are equipped with modern technological skills.

Labor regulations relate to the flexibility of labor markets. Reformed labor market regulations support job creation and youth employment. The success of labor market reforms rests on the adopted labor market model whether it is flexible, rigid or flexicure (Sahnoun and Abdennadher, 2019). Similarly, Bernal-Verdugo et al. (2012) find that labor market flexibility, in particular hiring and firing policies and hiring costs reduces unemployment, youth unemployment and long-term unemployment.

Knowledge factors relate to education and vocational training. Knowledge-based economies are favorable to youth employment and education is key to increasing youth employment rates.

In another study of the 28 EU countries, Mursa et al. (2018) provides an interesting overview of the determinants of youth unemployment. They discuss the difficulties that youth face in the transition from the education system to the labor market. The education system may not equip youth with the needed labor market skills (Dietrich 2012) through training and apprenticeships in particular (Görlich and Katznelson 2018). Chitiba (2012) attributes this gap to the public education monopoly. Labor market policies, in particular employment protection, hinder the hiring of youth and firing of existing unproductive or incompetent employees (Dietrich 2012).

Focusing on labor markets as the main determinant of youth unemployment, a few studies found that labor 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 labor market flexibility reduced youth unemployment, especially in the long-term.

Based on these studies, we plan to explain the youth unemployment rate in terms of macroeconomic variables, human capital, and institutional and governance variables. We turn to the empirical model in the next section.

## 4. Empirical Model

Building on the important historical role of state-led development in the Arab countries, the above empirical studies, and the persistent nature of unemployment, we express the empirical model as:

$$YUR = f(L.YUR, LABOR, GROWTH, EDUCATION, GFINANCE, INFLATION, CORRUPTION)$$

Where Y*UR* is the youth unemployment rate, as modeled by the ILO. The advantage of using ILO data is that it is standard across countries and less subject to variations in the definitions of youth and/or unemployment. Youth unemployment refers to the share of the labor force ages 15-24, who are without work but are available for and seeking employment. *YUR*, the dependent variable, is calculated as the share of the total youth unemployed as a percent of the total labor force ages 15-24. *L.YUR* is the lagged dependent variable. *LABOR* is labor market's flexibility

and efficiency measured using World Economic Forum's Global Competitiveness Index (GCI) data (log). *GROWTH* accounts for economic growth and is measured by the annual real GDP growth rate (in percent). *EDUCATION* is the quality of education measured using the Global Competitiveness Report's quality of education index (log). *GFINANCE* is government fiscal expenditures. It accounts for the major employment role the government and public sector play in hiring employees in Arab countries. *INFLATION* is measured by the annual percentage change of the consumer price index. *CORRUPTION* is the control of corruption in the economy.

## 5. Estimation methodology and results

Endogeneity is a potential issue, which arises from the unobserved country effects, the omission of variables, and reverse causality. Youth unemployment can dampen GDP, economic growth and the inflation rate. Therefore, we adopt a system GMM estimation methodology along the lines of Arellano-Bover (1995) and Blundell-Bond (1998).

Table 3 presents the system GMM estimation results. The growth rate exerts a negative influence on the youth unemployment rate, a one which is statistically significant at the 5 percent level in the fifth specification which reflects the labor market efficiency aspect of linking pay to productivity. An increase in the growth rate of one percentage point reduces the youth unemployment rate by nearly 1 percentage point. At a mean growth rate of 3 percentage points, the influence on youth unemployment rate is about - 2.4 percentage points.

**[Insert Table 3 here.]**

The coefficients of overall labor market flexibility and efficiency and linking pay to productivity are negative and statistically significant at the one percent level. The coefficient of the former indicator suggests that a one percent improvement in overall labor market flexibility and efficiency reduces the unemployment rate by about 0.1 percentage point.

Education quality surprisingly increases the youth unemployment rate at a statistically significant level only in the first specification. An improvement in education quality by one percent increases youth unemployment rate by about 0.08 percentage point. This possibly suggests that education quality a) makes youth overqualified and less easy to find jobs, b) does not necessarily match job market needs, or/and c) diverges from what it actually measures.

## 6. Conclusion

This paper addresses the high youth unemployment challenge in the Arab countries. Statistics show that youth unemployment is a challenge. The paper then examines empirically the determinants of youth unemployment. Empirical results show that growth and labor market flexibility and efficiency matter for the reduction of youth unemployment.

What is the take for policymakers from this research? Growth clearly matters for youth unemployment in the non-GCC countries. Job-creating growth can help accommodate the growing number of young people. However, youth has to be *effectively* equipped with the necessary job market skills. These skills help reduce job search costs and frictional unemployment, and provide youth with commensurate wages and salaries.

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**Table 1: Share of Youth in Population (ages 15-24; in percent)**

| | 1960-69 | 1970-79 | 1980-89 | 1990-99 | 2000-09 | 2010-20 | | 1960-99 | 2000-20 | Change |
|---|---|---|---|---|---|---|---|---|---|---|
| Algeria | 17.2 | 19.7 | 20.3 | 21.5 | 22.6 | 16.8 | | 19.7 | 19.7 | 0.0 |
| Djibouti | 20.2 | 18.3 | 20.4 | 20.0 | 21.0 | 19.5 | | 19.7 | 20.3 | 0.5 |
| Egypt | 17.0 | 18.8 | 18.8 | 18.8 | 20.8 | 18.1 | | 18.3 | 19.5 | 1.1 |
| Iraq | 16.9 | 18.3 | 19.5 | 21.3 | 20.3 | 20.1 | | 19.0 | 20.2 | 1.2 |
| Jordan | 19.2 | 17.8 | 20.5 | 21.7 | 20.5 | 19.3 | | 19.8 | 19.9 | 0.2 |
| Lebanon | 15.8 | 20.2 | 20.7 | 21.0 | 18.7 | 18.4 | | 19.4 | 18.6 | -0.9 |
| Libya | 17.2 | 16.8 | 19.4 | 22.3 | 21.9 | 17.6 | | 18.9 | 19.7 | 0.8 |
| Mauritania | 18.4 | 18.9 | 19.9 | 20.1 | 20.5 | 19.5 | | 19.3 | 20.0 | 0.7 |
| Morocco | 15.8 | 19.5 | 21.4 | 20.4 | 20.3 | 17.4 | | 19.3 | 18.9 | -0.4 |
| Somalia | 18.2 | 18.9 | 19.2 | 18.7 | 17.9 | 20.2 | | 18.7 | 19.1 | 0.3 |
| State of Palestine | 19.3 | 18.2 | 20.0 | 19.6 | 20.2 | 21.3 | | 19.3 | 20.8 | 1.5 |
| Sudan | 18.5 | 18.7 | 19.3 | 20.0 | 19.5 | 20.0 | | 19.1 | 19.7 | 0.6 |
| Syria | 16.6 | 19.7 | 19.9 | 21.5 | 21.9 | 19.5 | | 19.4 | 20.7 | 1.2 |
| Tunisia | 16.1 | 19.8 | 20.5 | 19.8 | 20.3 | 15.8 | | 19.0 | 18.0 | -1.0 |
| Yemen | 19.3 | 17.9 | 18.6 | 18.5 | 21.4 | 21.9 | | 18.6 | 21.7 | 3.1 |
| **Average** | 17.7 | 18.8 | 19.9 | 20.3 | 20.5 | 19.0 | | 19.2 | 19.8 | |

**Table 2: Youth Unemployment Rates (in percent)**

| Country | 1991-2000 | 2001-2010 | 2011-2019 |
|---|---|---|---|
| Algeria | 34.4 | 47.1 | 21.8 |
| Djibouti | 18.2 | 19.5 | 21.2 |
| Egypt | 26.0 | 27.5 | 24.5 |
| Iraq | 15.8 | 16.9 | 16.8 |
| Jordan | 37.3 | 31.3 | 28.9 |
| Lebanon | 18.9 | 21.2 | 17.8 |
| Libya | 44.4 | 46.5 | 48.8 |
| Mauritania | 13.7 | 14.2 | 14.9 |
| Morocco | 20.0 | 19.1 | 17.8 |
| Somalia | 21.3 | 21.9 | 21.2 |
| Sudan | 27.1 | 28.4 | 28.7 |
| Syria | 12.4 | 21.5 | 20.1 |
| Tunisia | 30.1 | 30.2 | 29.5 |
| West Bank and Gaza | 15.4 | 31.2 | 36.3 |
| Yemen | 16.4 | 19.1 | 22.1 |
| **Total** | 23.4 | 26.4 | 24.7 |

**Table 3: System GMM Estimation Results**

| | LE | C | WF | HF | PP | PM |
|---|---|---|---|---|---|---|
| L.*YUR* | 0.764*** | 0.801*** | 0.812*** | 0.802*** | 0.746*** | 0.816*** |
| | (0.113) | (0.118) | (0.115) | (0.099) | (0.104) | (0.090) |
| *LABOR* | -9.749*** | -4.693 | -0.567 | 1.426 | -9.032*** | -4.223* |
| | (3.491) | (3.794) | (2.356) | (2.843) | (1.834) | (2.452) |
| *GROWTH* | -0.754* | -0.696 | -0.783 | -0.746* | -0.815** | -0.764* |
| | (0.398) | (0.471) | (0.486) | (0.403) | (0.397) | (0.407) |
| *INFLATION* | 0.075 | 0.103 | 0.076 | 0.063 | 0.050 | 0.083 |
| | (0.108) | (0.124) | (0.113) | (0.086) | (0.086) | (0.097) |
| *EDUCATION* | 7.899** | 6.033 | 2.797 | 1.436 | 7.414* | 5.692 |
| | (3.464) | (3.823) | (3.534) | (3.532) | (3.908) | (3.826) |
| *GFINANCE* | -0.054 | -0.070 | 0.021 | -0.004 | -0.119 | -0.131 |
| | (0.168) | (0.158) | (0.213) | (0.220) | (0.182) | (0.189) |
| *CORRUPTION* | 3.819 | 3.861 | 3.678 | 3.470 | 4.580 | 3.770* |
| | (2.927) | (2.693) | (2.497) | (2.414) | (2.962) | (2.246) |
| Constant | 8.277 | 3.902 | 1.456 | 1.399 | 9.387 | 4.270 |
| | (6.628) | (5.362) | (9.280) | (8.343) | (8.598) | (6.951) |
| | | | | | | |
| Observations | 58 | 58 | 58 | 58 | 58 | 58 |
| No. of countries | 7 | 7 | 7 | 7 | 7 | 7 |

Notes: LE: overall labor market efficiency. C: labor-employer cooperation. WF: wage flexibility determination. HF: hiring and firing policies. PP: linking pay to productivity. PM: reliance on professional management. One-step system GMM estimation results. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$