WORKING PAPER

Financial inclusion in the Middle East and North Africa and its Effect on Unemployment

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Abstract

The purpose of this study is to investigate empirically the relationship between financial inclusion and unemployment for a sample of countries within the MENA. An index for financial inclusion, using Sarma (2008), has been estimated for Egypt, Jordan, Lebanon, Morocco and Tunisia during the period 2008-2018. The estimated index for financial inclusion reveals that, despite some progress, there is a need to foster financial inclusion in the region. Based on this index, the impact of financial inclusion on unemployment has been tested. The estimation of a random effect model testing the relationship between financial inclusion and unemployment shows a negative effect of financial inclusion on unemployment for the selected sample of countries.

Keywords: Financial inclusion, Unemployment, MENA, Random effect model.

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Introduction

The ability of the poor to access affordable and secure financial services is very important to promote equitable economic growth, poverty reduction, and development (Serrao et al., 2013; Goel and Sharma, 2017). Granting access to basic financial services for the poor and other marginalised groups of the society is at the core of financial inclusion (Sarma, 2008; 2012) and the main idea behind this is that financial services enable access to saving and investment opportunities, which can contribute to raising income.

For these reasons, the World Bank has called for Universal Financial Access by 2020 and many countries have recently recognised the importance of financial inclusion and of investing in creating the infrastructure and the conditions to ensure access to financial services for the largest possible number of people.

The Middle East and North Africa (MENA) region is one of the world's weakest regions in terms of financial inclusion (Demirguc-Kunt et al., 2015) and also one with the highest gender gap in financial inclusion. In addition, the countries of the MENA are characterised by a large share of young people who are generally encountering major obstacles to access financial and banking services.

This study aims at estimating an index for financial inclusion (based on Sarma, 2012), for a sample of middle income countries of the MENA (Egypt, Jordan, Lebanon, Morocco and Tunisia) between 2008 and 2018. Second, the study aims at estimating the effect of financial inclusion on unemployment.

The analysis should help to better understand the link between financial inclusion and labour market dynamics of emerging economies and, herewith, to develop a more informed and tailored agenda for policy intervention.

The remainder of the paper is structured as follows: Section 2 presents the literature review; Section 3 presents the chosen index for financial inclusion; and Section 4 the results for the countries considered. The model relating to unemployment and financial inclusion, and the results of its estimation, are then presented in Section 5. Section 6 presents the main conclusion and implications.

The importance of financial inclusion

Financial inclusion has recently become a crucial concern for policy makers worldwide. It is not new in the literature, that financial development plays an important role in economic growth (Naceur and Zhang, 2016) and that inclusive financial systems help reduce income inequality and smoothening consumption.

According to the World Bank, *"Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that*

meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way."[4]

Amongst notable milestones recognising the importance of financial inclusion were the establishment of the Alliance for Financial Inclusion (AFI) in 2008, consideration of which was included within the nine key pillars of the global development agenda at the G20 Summit in South Korea (G20, 2011), the endorsement in 2011 of the Maya Declaration (the*"first global and measurable set of commitments by developing and emerging country policy makers to unlock the economic and social potential of the 2.5 billion poorest people through greater financial inclusion"*, AFI, 2016), and the G20 commitment to support the Global Partnership to Financial Inclusion (GPFI, 2016).

Currently, financial inclusion is widely acknowledged as a critical element in reducing poverty and fostering economic growth and development (Kumar, 2017). Having access to a savings and investment account, as well as to basic financial services, increases income levels and improves living standards. Therefore, financial inclusion is also often associated with increasing the productivity of an economy (Claessens, 2006).

On the other hand, financial exclusion is often associated with poverty. Financial exclusion depicts a situation in which financial services are not accessible to a particular group of individuals (Leyshon and Thrift, 1995; Sinclair, 2001) and can be either voluntary (self-exclusion) or involuntary. Voluntary exclusion is where individuals do not want to have access to financial services, whereas involuntary exclusion has to do with the conditions of financial services provision (price, income, discrimination, non-accessibility, World Bank, 2014). The World Bank estimates that there are currently almost 1.7 billion unbanked individuals and 200 million businesses currently lacking access to savings and credit (Mc Kinsey Global Institute, 2016).

Besides supporting economic growth, distributing wealth and reducing poverty, financial inclusion reduces the funds circulating outside of official financial circuits, thus accruing towards informal financial services (Serrao et al., 2013). Access to convenient financial services can also be expected to support small and medium enterprises, which often face constraints in their access to finance (Beck et al. 2004, Levine 2005, Galor and Zeira 1993, Honohan 2004). Furthermore, there are some contributions that advocate the positive role of financial inclusion in entrepreneurship (Fan and Zhang, 2017).

Financial inclusion also belongs in the framework of the 2030 Sustainable Development Goals by the United Nations and it is mentioned as one of the key targets of Goal 8, that is to "promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all."

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[4] https://www.worldbank.org/en/topic/financialinclusion/overview

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The link between financial inclusion and unemployment has, to the best of our knowledge,   still been insufficiently explored by the literature. One exception in this regard is the working paper by Ayadi et al. (2020), which tests the relationship between financial inclusion income inequality, poverty, and employment for Southern Mediterranean countries along with some descriptive contributions on the role of financial inclusion for employment (Sykes et al., 2016; Osikena and Ugur, 2016).

A related line of analysis has focussed on the effect of financial development on employment: the results show, in general, that there is a relationship between the two variables, which is moderated, however, by the characteristics of the labour market (Gatti et al., 2009; Gatti and Vauburg, 2009) and by the considered proxies for financial development (Ciftioglu and Bein, 2017). One interesting result in this regard is that financial development seems to affect employment by facilitating access to the capital markets (Bayar, 2016), which is actually at the root of financial inclusion.

The present study contributes to the literature by estimating an index for financial inclusion in a sample of middle income MENA countries and then empirically estimating the relationship between financial inclusion and unemployment.

Index for financial inclusion

In general, two different approaches have been adopted in the literature to measure the complex concept of financial inclusion. Whilst some studies have highlighted different variables and used them as possible proxies for financial inclusion (Demirgüç-Kunt and Klapper, 2013, and Honohan, 2008), other studies have developed multi-dimensional indexes for it. The obvious advantage of building indexes is that they enable cross-country comparisons and that they provide a more robust specification of financial inclusion, taking into consideration and weighting different dimensions. Notable examples of multi-dimensional indexes for financial inclusion have been discussed by Sarma (2008, 2012), Chakravarty and Pal (2010), Camara and Tuesta (2014), Ayadi et al. (2020), and Sha'ban et al. (2020).

In this study, we follow the index by Sarma and we use this to assess the current state of financial inclusion for a sample of countries in the MENA region for the period 2008-2018. Amongst previous studies estimating financial inclusion, based on this methodology, are Yorulmaz (2012), Laha (2015), and Goel and Sharma (2017).

Sarma's index is developed based on three dimensions, namely; outreach (or penetration) (p), availability (a), and usage (or financial depth) (u). Outreach is proxied by the number of deposit accounts per 1,000 adults, availability by the number of commercial bank branches per 100,000 adults and the number of ATMs per 100,000 adults, whilst usage is based on the volume of domestic credit to the private sector plus the volume of deposits mobilised by the private sector as a share of GDP (Sarma, 2008 and 2012).

In Sarma's methodology, the different dimensions of financial inclusion can assume a value between 0 and 1 and are calculated according to the following formula:

$$d_i = w_i \frac{A_i - m_i}{M_i - m_i} \qquad (1)$$

Hereby, wi is the weight, ranging from 0 to 1, specified for the i dimension. Ai is the actual value of the i dimension, while mi and Mi are respectively the lower and upper limit for the i dimension.

The normalisation of each dimension is similar to the approach followed by the UNDP in developing several of its indicators, such as the Human Development Index (HDI), the Human Poverty Index (HPI) and the Gender Development Index (GDI).

The index is then calculated as the distance between the actual value in the different dimensions, the unique origin (0) and the score of a country with an ideal level of financial inclusion (see formula 2).

$$IFI = \frac{1}{2}\left[\frac{\sqrt{d_1^2 + d_2^2 + \cdots + d_n^2}}{\sqrt{n}} + \left(1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + \cdots + (1-d_n)^2}}{\sqrt{n}}\right) \right] \qquad (2)$$

In Sarma's analysis, the weight for outreach is one, being considered as an essential dimension of financial inclusion, (Sarma, 2012), and the weights for accessibility and usage are by 0.5 each.

The lower limits (mi) for all dimensions are 0 and this enables the simplification ofthe equation for each dimension to $d_i = w_i A_i / M_i$.

The upper limits (Mi) are empirically determined by Sarma (2015). The upper limit for outreach is 2,500, which represents a more than complete outreach of financial services (5 accounts for every two adults).

The accessibility dimension consists of two indicators, namely the number of commercial bank branches (a1) (with upper limit, Ma1= 60) and the number of ATMs (a2) per 100,000 adults (Ma2=120). Accessibility is then defined according to the equation (2/3 a1+1/3 a2).

The last dimension of Sarma's index is usage which is represented by domestic credit and deposits by the private sector as a share of GDP. Upper limit is 300 (Mu=300).

Financial inclusion in the MENA

This section presents the results from the estimation of the financial inclusion index, based on the approach by Sarma (2012) for five middle income countries of the MENA region for the period 2008 to 2018. Data stems from the Financial Access Survey (2019) database by the International Monetary Fund.

The results signal low to intermediate levels of financial inclusion in the considered countries. This is in line with existing literature (Demirguc-Kunt, 2015b) and with the marginalisation of females, young people, refugees, and small businesses from access to financial services (Sykes et al., 2016).

In general, an index for financial inclusion below 0.3 reflects low financial inclusion, between 0.3 and 0.6 = moderate, above 0.6 = high (Sarma, 2015). Thus, the results of the financial inclusion index (Fig. 1) signal low to average levels of financial inclusion. On average, the index equates to 0.348.

Figure 1: Index for Financial Inclusion between 2008 and 2018
(Authors' calculation based on data by FAS, 2019).
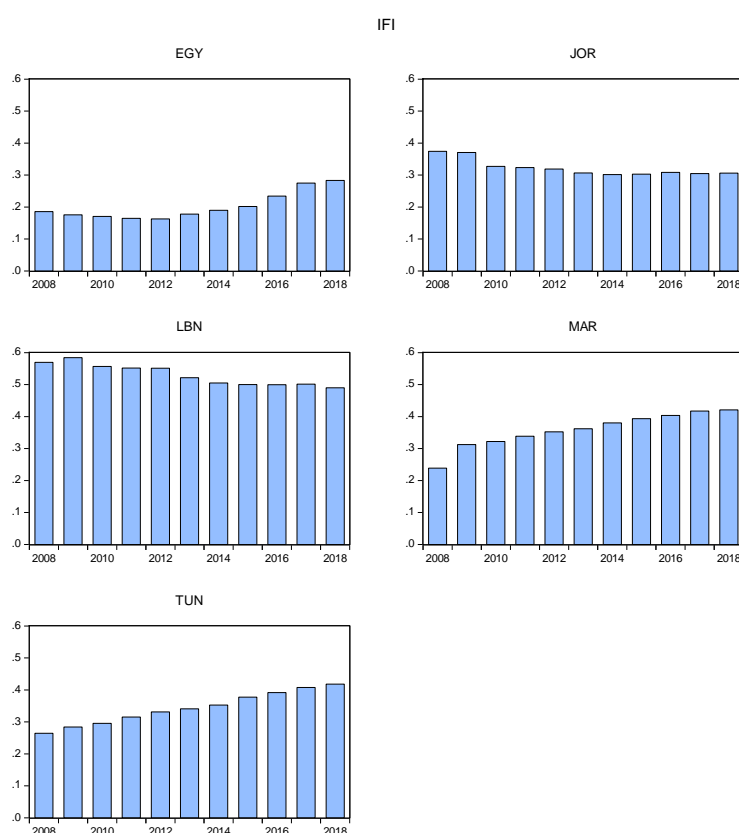
In addition, our results show pronounced differences across countries: Lebanon reveals the highest average index (0.53), followed by Morocco (0.35), Tunisia (0.34), and Jordan (0.32). To be further noted is that, whilst Morocco and Tunisia have shown remarkable progress in financial inclusion, Jordan and Lebanon have not managed to increase the inclusiveness of their financial systems. Most probably, the Syrian crisis and the consequent refugee inflows have played a role in influencing these developments. At the lower end of the sample, there is Egypt, with an average financial inclusion of 0.20.. Pronounced differences across countries are also apparent in regard to the different dimensions used to build the financial inclusion index.

The number of deposit accounts per 1,000 adults in Tunisia, Morocco and Lebanon is approximately one account per adult, whereas Egypt and Jordan are below this level (Fig. 2). The number of deposit accounts per adult population has clearly been increasing in Tunisia and Morocco and Egypt also seems to have recorded some improvements. On the contrary, outreach has been decreasing in Jordan and Lebanon. Again, the large number of refugees may be a plausible explanation for this trend.

Figure 2: Deposit accounts with commercial banks per 1,000 adults (FAS, 2019)
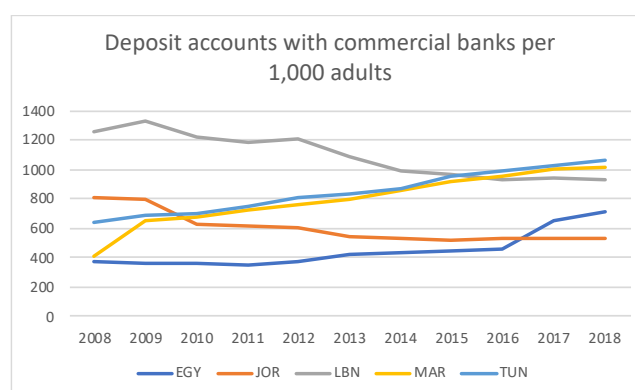
The accessibility of financial services is proxied by the number of ATMs and commercial bank branches per 100,000 adults (Figure 3). Whilst there is a clear trend towards an increase in the number of ATMs in all of the considered countries, the number of commercial bank branches has not recorded any remarkable progress. In particular, Lebanon and, to a lesser extent, Jordan show decreases in the number of bank branches per adult population.

Figure 3: Number of ATMs and of commercial banks' branches per 100,000 adults (FAS, 2019)
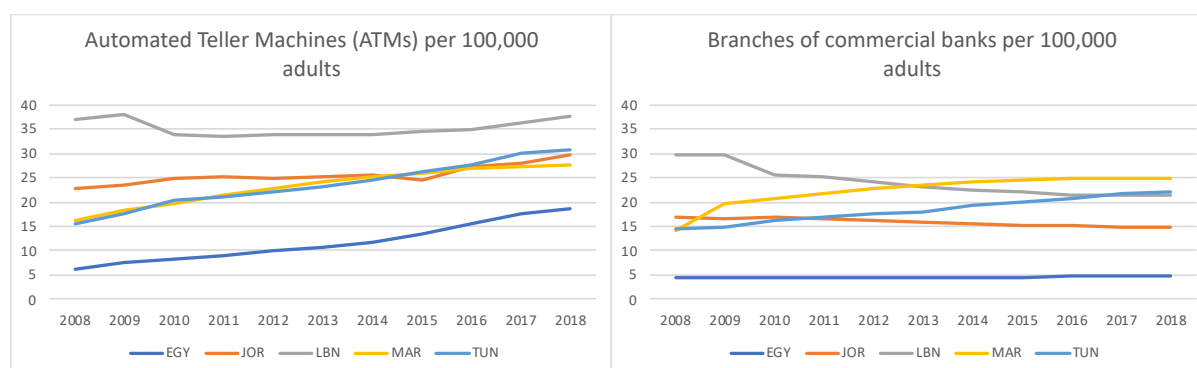
The share of deposits and loans to GDP, which is considered a proxy for the usage of financial services, has remained stable in all the countries considered (Fig.

4). In general, Lebanon presents the highest usage (this might be related to non-resident deposits and remittances) and Egypt the lowest.

Figure 4: Deposits and loans as share of GDP (FAS, 2019)
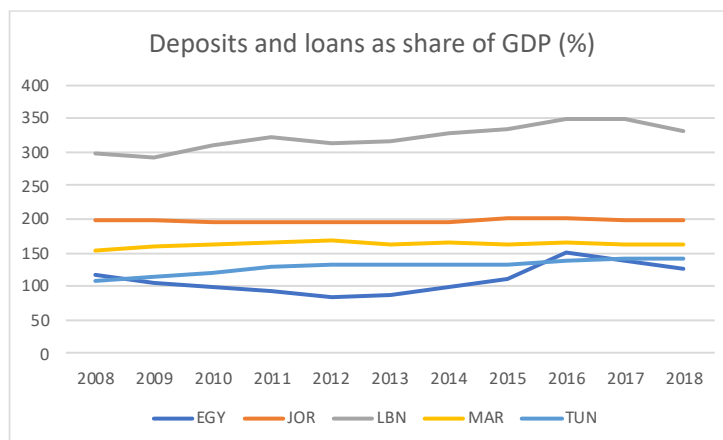
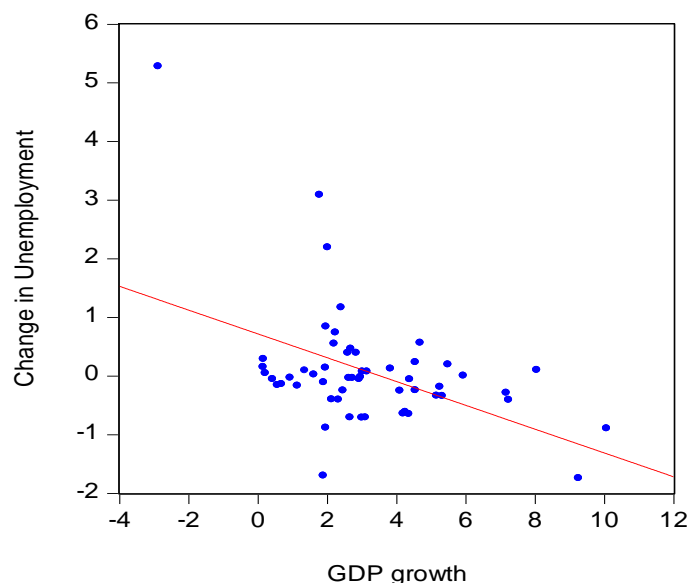## The effect of financial inclusion on unemployment – Estimation results

The estimation of the relationship between financial inclusion and unemployment is done by relying on the empirical regularity that can be observed between real output growth and the change in unemployment, which is known as Okun's Law (Okun,1962). We rely on this framework, as it has received empirical validation both for the United States (e.g. Smith, 1975; Gordon, 1984; Knoester, 1986; Kaufman, 1988; Prachowny (1993); and Weber, 1995) and for other sets of countries (Moosa, 1997; Ball et al., 2016). The study by Abou Hamia (2016) has also revealed the validity of this law in the Middle East.

Accordingly, we rely on a formulation of this law (Knotek, 2007). Okun's Law posits that there is a negative relationship between the change of unemployment (ΔU_t) and real economic growth ($GDPgr_t$), according to the following equation, where ε_t is the error term and t the time period.

$$\Delta U_t = c + \beta_1 GDPgr_t + \varepsilon_t \qquad (3)$$

The scatter plot of change in unemployment and GDP growth (Figure 5) hints at a negative relationship between change in unemployment and output growth for the selected countries, thus confirming the suitability of the model.

To measure the unemployment effect of financial inclusion on unemployment, we add the calculated index for financial inclusion (*IFI*) to equation 3. Herewith, the model to be estimated becomes:

$$\Delta U_{it} = c + \beta_1 GDPgr_{it} + \beta_2 IFI_{it} + \varepsilon_{it} \qquad (4)$$

Subscript *i* indicates the cross-section (the country).

The estimation is based on a balanced panel dataset between 2008 and 2018 for the five countries considered. Data for unemployment and for GPD growth was extracted from the the World Development Indicators (2019) database.

The results of Unit Root test shows that all variables are stationary at the level with intercept.

To determine the most appropriate model to estimate equation (4), a Pooled Regression model, a Fixed Effect (FEM) model, and a Random Effect (REM) model are compared. The results of Hausman test (cross-section random=1.111, p=0.57) reveal REM to be the suitable estimation method. Thus, as follows, the results of REM will be considered.

The estimation results are presented in Table 1.

Table 1: Estimation results of pooled regression, random effect, and fixed effect model
(Authors' calculation)

Variable	Random Effect Model
c	1.4526** (3.3234)
GDP growth	-0.2002** (-3.7256)
IFI	-2.1173* (-1.9170)
R-squared	0.267
Adj R-squared	0.239
Durbin-Watson	2.181
F-statistic	9.490
Cross-section random Hausmann test	1.111

** p<0.01 * p<0.05

The values of the coefficients reveal that there is a negative relationship between unemployment change and output growth, as well as between unemployment change and financial inclusion. The estimated parameters are all significant and the F statistics (9.49) proves the overall significance of the estimated model. Serial correlation can be excluded, based on the Durbin Watson test for autocorrelation (DW value is 2.18). Furthermore, the results of the Variance Inflation Factor (VIF) test show that there is no multi-collinearity and the Breusch-Pagan test confirms that there is no heteroscedasticity.

The findings reveal a significant negative impact of output growth on unemployment, as well as a significant negative effect of financial inclusion on unemployment change. The existence of a link between financial inclusion and labour market dynamics provides further support to the importance of financial inclusion in economic development.

Conclusion

The present study further emphasises the importance of financial inclusion for economic growth and creating better job opportunities. Specifically, this study estimated an index for financial inclusion (based on Sarma, 2012) for a sample of middle income MENA countries. The results reveal that the level of financial inclusion in the selected set of countries can be classified as low or intermediate. It is very important, therefore, for these countries to further invest in the inclusiveness of financial services.

A model of unemployment has then been estimated using the calculated index for financial inclusion. The econometric estimation (based on a random effect model) reveals the existence of significant negative effects of financial inclusion on unemployment. This is a very relevant result, which clarifies the link between financial inclusion and labour market dynamics and provides further support for the importance of financial inclusion.

Amongst the implications that can be derived from the study, is that policy makers should invest in increasing financial inclusion, as it can also be conducive to job creation. Strategies may vary from country to country and may range from reducing the cost of financial services to creating incentives for the informal sector to regulate its position, spreading financial education and widening the acceptance of financial instruments, investing in gender equality, easing the requirements needed to access basic financial services and supporting the spread of mobile banking and digital payments.

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