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Simon Neaime and Isabelle Gaysset



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Simon Neaimea¹ and Isabelle Gaysset²

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1. Professor of Economics and Finance, Institute of Financial Economics, American University of Beirut
P.O. Box 11-0236. Beirut-Lebanon, Email: sn01@aub.edu.lb, Tel: (9613) 829944
 2. Post-Doctoral Fellow, Institute of Financial Economics, American University of Beirut
P.O. Box 11-0236. Beirut-Lebanon, Email: ig07@aub.edu.lb
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Abstract

Despite a significant growth in profitability and efficiency, MENA's well developed banking system seems to be unable to reach vast segments of the population, especially the underprivileged ones. To this end, the onus of policymakers in the region is to create effective opportunities for financial development and subsequently poverty and income inequality reduction. Whether they have succeeded in their endeavor is an empirical question that we seek to address in this paper. Using Generalized Method of Moments (GMM) and Generalized Least Squares (GLS) econometric models and a larger sample of eight MENA countries over the period 2002-2013, this paper assesses empirically the impact of financial development on income inequality, poverty, and financial stability. Our empirical results show that while financial development decreases income inequality, population size and inflation are found to increase income inequality. Other empirical results show that financial development has no effects on poverty, whereas the gross enrollment ratio, population, inflation, and trade openness are all found to significantly increase poverty. Finally, the empirical evidence indicates that financial development and financial integration are contributing factors to financial instability in the MENA region.

Introduction

During the past three decades, the Middle East and North Africa (MENA) region has experienced one of the highest rates of unemployment in the world. Frustrated by years of economic and financial exclusion, political marginalization, and income stagnation, young people have taken to the streets and ignited revolutions in Tunisia, Libya, Egypt, Yemen, and Syria. In response, several governments in the region rushed to implement programs that reduce economic and financial exclusion primarily among the poor segments of the population. At the highest levels of political governance, there is now a clear recognition that financial stability and inclusion go hand in hand because they represent two sides of the same coin. In several MENA countries, the banking sector is by far the dominant financial sector, and it tends to be large relative to the Gross Domestic Product (GDP) when compared with other more developed countries. Yet, despite their size, access to banking and other financial institutions (credit, bank accounts, number of banks, and accessibility to payment services) is relatively restricted.

The pursuit of financial development aimed at drawing the ‘unbanked’ population into the formal financial system now represents a recent preoccupation for policymakers in the region (Pearce, 2011). There is a realization that lack of access to finance adversely affects economic growth and poverty alleviation as the impoverished find it difficult to accumulate savings, build assets to protect against risks, as well as invest in income-generating projects. In some MENA countries, bank branch expansion and the spread of microfinance institutions have not succeeded in reducing financial exclusion, poverty, and income inequality. Scant access to basic financial services remains a deprivation suffered by large segments of the population. Policymakers are increasingly recognizing that despite a significant growth in profitability and efficiency, banks have been unable to reach vast segments of the population, especially the underprivileged sections of the society (Pierce, 2011). To this end, the onus of policymakers is to create effective opportunities for financial development and inclusion.

Key to such interventions are policies that accelerate the introduction of innovative technology, regulatory reforms, and the acquisition of infrastructure that reduce transaction costs and allow the delivery of financial services more rapidly, efficiently, and conveniently to broad sections of the population.

During the past decade, several leading studies (Honohan 2004, and Demirguc and Klapper 2012, among others) established a strong link between financial access to banking services, and economic development, and growth. Empirical evidence indicates a distinct rise in income level of the countries with higher number of bank branches and deposits. Higher number of branches and deposit accounts are more observed in high income countries than countries in the low and middle income categories. While these studies show that financial development boosts the growth rate of per capita GDP, they do not necessarily suggest that financial development helps the poor. The inability of financial development to reach the poor is evident in several MENA countries where there is a perception that financial development increases average growth only by increasing the incomes of the rich and leaves behind those with lower incomes. How financial development affects income inequality and how it could improve income distribution in the region is not clear (Dhrifi, 2013). Another little understood area of research in MENA is the interplay between financial development and financial stability. In its recent report, the World Bank admits: “there is limited empirical work exploring the specific linkages between financial development and financial stability” (World Bank Brief, 2012).

The recent global financial crisis has brought the focus on financial stability to the forefront. It is now recognized that financial crises could have damaging effects on economic growth and social welfare. While financial instability can hurt even the most advanced economies, the damage it can cause in the MENA region can be particularly severe. People with low levels of income have no headroom to bear downside risks, and their livelihoods can be disrupted by financial instability.

This is where financial development and stability can make a significant positive contribution in the MENA region. For banks, financial development and stability help provide a more stable base of deposits. As the recent global crisis demonstrated, stable retail sources of funding (as opposed to reliance on borrowed funds) can greatly enhance the resilience of banks. Low income savers and borrowers tend to maintain stable financial behavior in terms of deposit keeping and borrowing. During periods of systemic crises, deposits from low income clients typically act as a continued source of funds even as other sources of credit dry up. Small customers thus provide big opportunities to garner stable deposits. In the absence of such deposits, banks may find it difficult to continue lending. This credit channel has the potential to aggravate the impact of the crisis on the local economy than would otherwise be the case.

Another area where financial development and inclusion fosters financial stability is by improving the process of intermediation between savings and investments. A wider customer base for banks expands their balance sheets to new areas of business and makes them more risk diversified and resilient to withstand unexpected losses. Also, on a pure macro level, financial inclusion attracts a greater participation by different segments of the economy to the formal financial system. Today, financially excluded individuals rely primarily on cash transactions and make their decisions independent of the Central Bank's monetary policy. Financial development and inclusion bring those individuals into the mainstream and make the transmission mechanism of monetary policy more effective. Finally, financial development and inclusion, through careful policy orientation, may help reduce income inequalities, bridge the gap between the rich and poor, and foster social and political stability. This is particularly relevant through the turbulent times many MENA countries are currently experiencing.

Using GMM and GLS econometric models and a large sample of eight MENA countries over the period 2002-2013, this paper assesses empirically the impact of financial development on income inequality, poverty, and

financial stability. While the empirical literature on the MENA region is relatively scarce, this paper adds to that literature by bridging a significant existing gap, especially in the aftermath of the recent financial and debt crises and the recent political, social, and military turmoil that have been unfolding in several MENA countries. The remainder of the paper is divided as follows. Section 2 overviews related literature. Section 3 lays down the empirical methodology and the motivation of the empirical models to be estimated. The data set, empirical estimations, and results are all summarized in Section 4. Finally, the last section offers conclusion and some policy recommendations.

Related Literature

Despite compelling evidence in the literature that rich and middle income countries have been converging to parallel growth paths over the past 50 years, the gap between those countries on the one hand, and the very poor on the other, continues to persist and to widen (Aghion et al. (2015)). Since 1980, the year which earmarked the liberalization era for most emerging markets, the general belief that there is a positive impact of financial development on income inequality and poverty has motivated analyzing the impact of financial development on income inequality, poverty, and financial stability in the context of bank/stock market development. For example, Merton and Bodie (1995) point to the role of financial markets in providing ways of transferring economic resources through time and among industries, which in turn contributes to alleviating the poverty burden and income inequality. Beck and Levine (2004) and King and Levine (1993) supported the notion that well-functioning financial markets can boost economic growth and reduce poverty. In this respect, Beck et al. (2008) and Galor and Zeira (1993) found that there exists a robust, positive relationship between the development of financial markets and both per capita GDP growth and total factor productivity.

Using data for 40 developed and developing countries over the period 1947-1994, Li, Squire, and Zou (1998) found that financial development leads to

less income inequality. Similarly, Jalilian, and Kirkpatrick (2002) showed that financial development contributes to poverty reduction. More recent work corroborated these findings; Uddin et al. (2014) showed that there exists a long run relationship between financial development, growth, and poverty reduction in Bangladesh. Likewise, Abosedra et al. (2015) used data for Egypt spanning the period 1975Q1-2011Q4 to investigate the correlation between financial development and poverty reduction and concluded that financial development reduces poverty. However, and interestingly enough, both theoretical models and empirical evidence provide conflicting predictions about the impact of financial development on income inequality and poverty reduction.

Other studies have pointed to the fact that financial development may fail to reduce income inequality and poverty. Claessens and Perottii (2007) argued that financial liberalization might in practice lead to inequality. The latter perspective was reinforced by Jeannine and Kpodar (2008) who argued that financial development is reduced and perhaps eliminated by financial instability. The negative effect that might arise from financial development on income inequality and poverty is due to rapid financial liberalization in the absence of strong political and economic institutions to supervise and regulate the market. Their absence could trigger a financial/economic crisis, widening economic inequality and aggravating poverty via several channels. Furthermore, Liang (2006) finds a negative relationship between financial development and income inequality in urban China. Park and Shin (2015) examined the relationship between financial development and income inequality. Their results point to the fact that financial development contributes to reducing inequality only up to a point, after which, as financial development proceeds further, it contributes to greater inequality. For instance, using a dataset of 138 developed and developing countries between 1960 through 2008, Jauch and Watzka (2015) found that financial development promotes income inequality after they controlled for endogeneity problems.

While several MENA countries have taken some steps to enhance financial development and reduce financial instability, progress has been slow across much of the region (Pierce, 2011). Bank penetration and financial services in general have not been able to expand significantly. In other less developed countries, a number of reasons have been proposed to explain why financial development is low. Among those reasons are: (1) underdeveloped financial infrastructure and lack of credit information; (2) Insufficient competition among banks (which, in the MENA region, are the dominant financial institutions); (3) Limited availability and diversity of specialized financial products and bank branches; (4) Barriers to women in accessing finance; (5) Poor financial education; (6) Insufficient supervision of microfinance providers; and (7) Little regulatory support of non-bank financial service providers. It is not clear how significant these issues are in explaining the slow pace of financial development and inclusion in the MENA region where the research has not kept pace with these problems.

To that end, this paper adds to the very limited literature on the MENA region by proposing to assess the state of financial development in the region in order to identify constraints, opportunities, and priorities for significantly improving access to finance and to address issues such as income inequality, poverty, and financial liberalization and stability. Policy recommendations for improving financial development and reducing poverty and inequality will be developed. In addition, the study evaluates the effectiveness of the current financial system in reducing financial instability and assesses how increased financial liberalization and integration may be harmful to financial stability. Finally, the study examines the linkage between financial development and integration on one hand, and financial stability on the other; an area recently recognized to be under-examined by the World Bank in many less developed countries (LDCs) including the MENA region.

Data and Empirical Methodology

The data set spans the period 2002-2013 and is gathered from various sources, depending on availability. Data specific to ATMs and commercial banks for each country is retrieved from the International Monetary Fund's (IMF) Financial Access Survey database. Measures of financial development and inclusion by country are available from the World Bank's Global Financial Inclusion Database. Other economic and financial development variables for each country are also obtained from the Global Financial Development Database and the World Development Indicators. The MENA countries in our sample include: Egypt, Tunisia, Algeria, Jordan, Morocco, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). The growth rate of poverty was constructed using the log difference of the poverty headcount ratio at national poverty lines. Table 1 below describes the variables to be used in the empirical section of the paper and provides their summary statistics.

Table 1: Summary of Descriptive Statistics, 2002-2013

	# of Obs.	Mean	SD	Min	Max
ATM per 100000 adults	80	27.71	20.01	1.23	67.85
Banks per 100000 adults	80	12.48	6.05	3.90	24.06
GINI	80	38.69	1.62	35.5	41.3
Gross enrolment ratio (secondary)	80	82.61	14.04	48.05	117.9
Labor force female (% of all)	80	18.80	5.66	11.96	27.58
Population (in million)	80	2.48	2.43	732096	8.76e+07
Inflation (%)	80	4.97	4.17	-4.86	18.31
Age dependency ratio of working age (years)	80	46.46	16.45	16.32	70.42
Trade openness (% of GDP)	80	94.71	30.89	40.73	178.15
GDP per capita growth (%)	80	1.73	4.13	-15.14	8.80
Growth rate of poverty (%)	72	-0.28	0.046	-0.19	0.15

Source: Authors' Estimates.

Notes: SD is the standard deviation; Obs. refers to the number of observations, Min to Minimum values, and Max to Maximum values.

We begin our analysis by evaluating the impact of the depth of financial development on poverty levels and income inequality in the MENA region. We point out that the relationship between financial development, income distribution, and poverty is not uni-directional and could include reverse causation. This occurs when poverty alleviation increases the demand for banking services or when economic growth is coupled with significant reductions in income inequality, leading to political pressure for more financial development and inclusion. These endogeneity effects lead to potential biases in the estimated coefficients. To address these potential problems, we propose to use a dynamic panel estimator based on a generalized-methods-of-moments (GMM) developed for such specifications initially by Arellano and Bond (1991) and expanded to a system of equations with restrictions on the instruments by Arellano and Bover (1995) and Blundell and Bond (1998).

Recent revitalization of interest in long-run growth has generated interest among economists in estimating dynamic models with panel data. Dynamic fixed effect models are a common choice for macroeconomists since they address endogeneity problems which arise from an unobserved country-specific effect in the data. A dynamic panel data model has the form:

(1)

$$Z_{it} = \alpha_i + \sum_{j=1}^p \varphi_j Z_{it-1} + \sum_{j=1}^N \gamma_j X_{jit} + \sum_{k=1}^L \beta_k Y_{kit} + \varepsilon_{it}$$

where φ_j are p parameters to be estimated, X_{jit} and Y_{kit} are a set of predetermined and exogenous variables, α_i are the panel-level fixed effects, and ε_{it} are the independently and identically distributed errors over the whole sample with constant variance.

Since by construction the lagged dependent variables are correlated with the unobserved panel-level effects, standard estimators such as fixed effect estimators (LSDV) generate bias and inconsistency. Several estimators have been proposed in the empirical literature to circumvent the endogeneity problem embedded in equation (1). Nickell (1981) derived an estimate of

the bias γ in LSDV estimator and proved that this bias goes to zero when the time dimension T approaches infinity. When T does not tend to infinity, Anderson and Hsiao (1981) proposed an instrumental variable procedure whereby fixed effects are removed by the first difference of equation (1), i.e.

(2)

$$Z_{it} - Z_{it-1} = \alpha_i + \sum_{j=1}^p \varphi_j (Z_{it-1} - Z_{it-2}) + \sum_{j=1}^N \gamma_j (X_{jit} - X_{jit-1}) + \sum_{k=1}^L \beta_k (Y_{kit} - Y_{kit-1}) + (\varepsilon_{it} - \varepsilon_{it-1})$$

In differenced equation (2), $(\varepsilon_{it} - \varepsilon_{it-1})$ is correlated with $(Z_{it-1} - Z_{it-2})$ via Z_{it-2} and, therefore, $(Z_{it-1} - Z_{it-2})$ is instrumented by Z_{it-2} or $Z_{it-2} - Z_{it-3}$. Accordingly, the W matrix of instruments is formed by Z_{it-2} or $Z_{it-2} - Z_{it-3}$ in addition to other exogenous variables used in the model. On the other hand, Arellano and Bond (1991) proposed a GMM-type estimator where $(Z_{it-1} - Z_{it-2})$ is instrumented by all available lagged levels of the dependent variable.⁶ Also, other estimation methods can be applied depending on the data structure in which the number of cross sections N and/or time span T is large enough to derive consistent as well as efficient estimators such as the corrected LSDV estimator proposed by Kiviet (1995), Arellano and Bover (1995), and Blundell and Bond (1998) who show that the lagged-level instruments in the Arellano–Bond estimator become weak as the autoregressive process becomes too persistent or the ratio of the variance of the panel-level effect α_i to the variance of the idiosyncratic error ε_{it} becomes too large. They propose a system estimator that uses moment conditions in which lagged differences are used as instruments for the level equation.

Following Rioja and Valev (2004), Beck and Levine (2006), and Beck et al. (2007 a & b), we estimate the following dynamic panel-data model:

(3)

$$Z_{it} = \alpha_i + Z_{it-1} + \sum_{j=1}^N \gamma_j X_{jit} + \sum_{k=1}^L \beta_k Y_{kit} + \varepsilon_{it}$$

where, i stands for the i^{th} cross-sectional unit (country); t for the t^{th} time period (year); X refers to the proxy for financial access variables; Y is a vector of independent economic variables; Z refers to the measure of income inequality (Gini Coefficient), ranging from 0 to 1; α_i is the unobserved

⁶ See Holtz-Eakin, Newey, and Rosen (1988) for discussion of GMM-type instruments.

fixed effect; and ε_{it} is an error term. This specification is extensively used in the growth and finance literature to investigate the relationship between financial development, income inequality, and poverty using Blundell and Bond's (1998) estimators, who more precisely articulated the necessary assumptions for the augmented estimator. The system GMM estimator provides consistent and efficient estimates, overcomes the endogeneity problem, and is a better fit for panel studies with fewer time observations.

To gauge the strength of the linkage between financial development and income inequality/poverty, we make use of standard control variables widely used in the literature.⁷ We control for the lagged level of inequality and poverty indicators, which allows testing persistency in poverty and inequality, as in Beck et al. (2007a&b). The secondary school enrolment rate (education) is used to control for human capital accumulation, and total trade⁸ to GDP to capture MENA economies' degree of trade openness. Further, the rate of inflation is added as a control variable following Ravallion and Datt (1999), Easterly and Fischer (2001), and Dollar and Kraay (2002) who document evidence that the inflation rate is indeed a significant determinant of poverty. Moreover, it is crucial to control whether financial development affects those in the low-income bracket because of its effects on GDP per capita. Thus, real per capita GDP growth is also included.

In the second part, the study looks at how bank penetration, access to financial services, and increased financial integration can promote financial stability or instability. To explore these linkages, we propose a model of the form:

(4)

$$STAB_i = a + \sum_{j=1}^N b_{ij} X_{ij} + \sum_{k=1}^L c_{ik} M_{ik} + \varepsilon_{it}$$

⁷ For a survey, see Christiaensen, *et.al*, 2003.

⁸ Total trade is defined as total exports plus imports.

where the subscript i represents the respective MENA country, $STAB$ is the standard deviation of the growth rate in bank deposits between 2002 and 2013, X is a vector of j measures of access to banking services defined earlier, and M is a vector of k factors pertaining to country i ; a , b_j , and c_k are parameters, and ϵ_i is an error term. The $STAB$ variable measures the volatility in the deposit base of country i during the period under consideration. The vector of variables M will be selected from the following: (1) Log of the population size; (2) Measure of financial integration; (3) Average growth in GNI (Gross National Income, constant US\$/per capita); (4) GINI coefficient for income inequality; and (5) Average CPI during the observation period (2002-2013). It is important to point that model (4) is not a function of time and the variables change only across countries. All variables will be based on their average values between 2002 and 2013. To avoid multicollinearity problems, the model is estimated using the Generalized Least Square (GLS) estimation technique for linear models within the context of panel data. The model's estimation method allows for the presence of AR (1) type of autocorrelation within panels and cross-sectional correlation, as well as heteroscedasticity across panels.

Empirical Results

The empirical analysis starts by estimating the OLS regressions, which according to the empirical literature are biased and inconsistent (models (1)-(3) in Tables 2 and 3). These biased results are subsequently compared with the more robust, meaningful, and consistent GMM estimators (models (4)-(6) in Tables 2 and 3). Column 4 is the baseline equation, whereas in column 5 and 6, GDP and GDP squared are included in order to allow for non-linear specifications.

With the GINI coefficient as the dependent variable (Table 2), our empirical results point to a negative and significant relationship between financial development proxied by the number of banks per 100,000 adults and the GINI coefficient at the 1% level of significance. The interpretation of this is that in the MENA countries of Egypt, Tunisia, Algeria, Jordan, Morocco,

⁹ Financial integration is defined as the ratio of foreign direct investment to GDP.

Qatar, Saudi Arabia, and the UAE, a developed financial sector reduces income inequality. This suggests that having a higher number of banks will facilitate the access to financial services for the poor and alleviate income inequality. When the empirical specification is modified, the relationship remains negative and significant when the control variable is GDP (Model (5)) and GDP squared (Model (6)).

Population and inflation are also found to significantly affect income among the control variables. All MENA countries included in our sample have been registering high population growth rates. This growth in population has further widened the gap between the rich and the poor and has rendered financial and economic inclusion an even more difficult objective to achieve. Despite a decline in fertility rates in the past couple of decades, the combination of low infant mortality and high fertility rates between 2000 and 2013 led to high population growth rates, which translated into high labour force growth rates. Between 2005 and 2014, employment creation failed to keep pace with the growth of the labour force in most MENA countries.¹⁰

¹⁰ Moreover, and with the second youngest population in the world after Sub-Saharan Africa, the MENA region has registered unprecedented high levels of youth unemployment rates. The youth unemployment problem is due to a number of economic and social factors, including discrimination, social disadvantage, structural and cyclical trends which pushed the young into exclusion and inequalities. Moreover, this situation is an additional burden on the poorest households that overall have more dependent children and have subsequently experienced declines in their income.

Table 2: Regression Results- OLS & GMM Estimations, 2002-2013

Dependent Variable: GINI	(1) OLS	(2) OLS	(3) OLS	(4) GMM	(5) GMM	(6) GMM
ATM per 100,000 adults	0.037 (4.28)**	0.010 (1.45)	0.031 (1.43)	0.013 (1.22)	0.021 (1.09)	0.014 (1.11)
Banks per 100,000 adults	0.079 (3.82)**	0.095 (3.38)**	0.090 (3.29)**	-0.033 (2.64)**	-0.022 (2.48)**	-0.031 (2.51)**
Secondary enrolment ratio	-0.028 (3.52)**	-0.030 (3.82)**	-0.030 (3.61)**	-0.002 (0.43)	-0.005 (0.93)	-0.002 (0.43)
Labor force female (% of all)	0.121 (6.53)**	0.117 (6.61)**	0.115 (6.07)**	-0.064 (1.15)	-0.059 (1.12)	-0.063 (1.15)
Log population	0.032 (5.51)**	0.031 (5.89)**	0.033 (5.77)**	0.012 (2.72)**	0.013 (2.51)**	0.012 (2.66)**
Inflation	0.061 (3.09)**	0.055 (2.85)**	0.056 (2.82)**	0.025 (2.85)**	0.017 (2.96)**	0.019 (2.69)**
Trade openness (% GDP)	0.000 (0.06)	-0.000 (0.08)	-0.000 (0.01)	-0.001 (0.48)	-0.001 (0.38)	-0.001 (0.28)
Age dependency ratio	0.026 (3.64)**	0.025 (3.84)**	0.023 (3.55)**	-0.013 (1.26)	-0.007 (0.66)	-0.012 (1.22)
GDP per capita growth	-0.003 (0.12)			0.003 (1.53)		
GDP		0.000 (0.73)			0.000 (1.21)	
GDP Square			0.000 (0.64)			0.000 (0.01)
Lag (GINI)				0.408 (2.41)*	0.395 (2.25)*	0.413 (2.29)*
Constant	36.909 (35.66)**	37.125 (39.67)**	37.308 (37.10)**	23.632 (3.37)**	24.243 (3.35)**	23.376 (3.16)**
R2	0.84	0.84	0.84			
N	80	80	80	64	64	64
AR(2)				0.282	0.282	0.284

Source: Authors' estimates.

Notes: GMM-type instruments were created using lag 2 of n from on back. A *, ** denote statistically significant coefficients at 5% and 1% respectively.

With the growth rate of poverty as the dependent variable (Table 3), we find that financial development has no statistically significant effect on poverty. Indeed, the coefficients for the financial development indicators are insignificant in all the estimated GMM specifications. The insignificant effect arising from financial development on poverty is because MENA's banking structure is not developed enough to effectively impact poverty in a positive way, and the benefits of having a relatively well-developed banking system seem not to have reached the poorer segments of the population. The efficiency of the banking sector will have to be enhanced in order to increase the productivity of investments, with more support for small and medium enterprises. The ineffectiveness of the financial sector leads to low labor productivity due to a sub-optimal allocation of funds, which will have to be corrected. Likewise, an underdeveloped financial system with a low number of actors induces a low level of competition and therefore high lending margins of banks with low long-term interest rate that does not provide incentives for savings. The financial system's development must be enhanced particularly in rural areas where banking institutions need to facilitate exchanges and the flow of funds towards investment opportunities with the highest social rate of return. Moreover, as the access to loans is still restricted in several MENA countries, the poor are becoming poorer and are not able to leave the informal sector and move out of social exclusion.

Table 3: Regression Results- OLS & GMM Estimations, 2002-2013

Dependent Variable: Poverty Growth Rate	(1) OLS	(2) OLS	(3) OLS	(4) GMM	(5) GMM	(6) GMM
ATM per 100,000 adults	-0.001 (0.33)	0.01 (1.58)	0.003 (0.44)	0.010 (1.32)	0.011 (1.61)	0.012 (1.33)
Banks per 100,000 adults	0.000 (0.17)	-0.002 (1.46)	-0.000 (0.46)	-0.002 (1.07)	-0.003 (1.26)	-0.003 (1.14)
Secondary enrolment ratio	-0.001 (3.39)**	-0.09 (2.85)**	-0.001 (2.79)**	0.001 (3.01)**	0.002 (2.78)**	0.002 (2.76)**
Labor force female (% of all)	-0.005 (3.85)**	-0.005 (3.40)**	-0.005 (3.47)**	-0.003 (0.36)	-0.003 (0.39)	-0.004 (0.40)
Log population	0.022 (2.81)**	0.023 (2.87)**	0.022 (2.64)*	0.012 (3.88)**	0.013 (3.95)**	0.012 (3.94)**
Inflation	0.000 (0.81)	0.000 (0.29)	0.000 (0.20)	0.001 (1.98)*	0.001 (2.02)*	0.001 (2.10)*
Trade openness (% GDP)	0.000 (1.53)	0.000 (1.61)	0.000 (1.39)	0.001 (2.04)*	0.001 (2.38)*	0.001 (2.22)*
Age dependency ratio	0.000 (0.55)	0.000 (1.89)	0.000 (1.64)	0.001 (0.26)	0.000 (0.16)	0.001 (0.21)
GDP per capita growth	0.001 (1.96)			0.000 (0.72)		
GDP		-0.000 (1.78)			-0.000 (0.61)	
GDP Square			-0.000 (0.78)			-0.000 (0.96)
Lag poverty growth rate				0.023 (0.23)	0.021 (0.20)	0.022 (0.21)
Constant	0.119 (2.23)*	0.075 (1.50)	0.065 (1.38)	0.112 (0.72)	0.211 (0.61)	0.215 (0.59)
R2	0.61	0.61	0.60			
N	72	72	72	56	56	56
AR(2)				0.273	0.303	0.302

Source: Authors' estimates.

Notes: GMM-type instruments were created using lag 2 of n from on back. A*, ** denote statistically significant coefficients at 5% and 1% respectively.

Population and inflation are found to significantly affect poverty among the control variables. An increase in the rate of inflation reduces the purchasing power and, therefore, the real income of individuals, which subsequently increases poverty. Moreover, the secondary enrollment ratio and trade openness are found to significantly increase poverty. While the commitment of MENA governments to education has been impressive, with secondary school enrollment rates above 70 percent in most MENA countries, increases in school enrollment rates and the massive spread of education have been coupled with a decline in educational quality, and with increases in youth unemployment rates. Finally, economic openness seems also to have contributed positively to poverty. A possible explanation might be due to institutional weaknesses and widespread corruption in the MENA region. Structural governance problems have negatively affected investment and the efficiency of resource allocation.

Robustness checks of the validity of the instruments are conducted using the Sargan test which is in effect an over-identification test. The null hypothesis assumes that the model is correctly specified and that the over-identifying conditions are correct. Further, we test the null hypothesis of the existence of auto-correlation. The Arellano–Bond test’s null hypothesis assumes no autocorrelation. The tests for the AR (1) process in first differences rejects the null hypothesis, since $\Delta \epsilon_{i,t} = \epsilon_{i,t} - \epsilon_{i,t-1}$ and $\Delta \epsilon_{i,t-1} = \epsilon_{i,t-1} - \epsilon_{i,t-2}$, that is, both have the error term $\epsilon_{i,t-1}$. However, the test for the AR(2) in first differences is more important because it detects autocorrelation in levels. Both Sargan and Arellano–Bond’s auto-correlation tests point to the fact that the model is correctly specified, as well as, to the absence of auto-correlation in the errors in levels.

With the standard deviation of the growth rate of deposits (as a proxy for financial stability) as the dependent variable (Table 4), we run the model again using the same set of independent variables in addition to the GINI coefficient and the poverty variable. Our results point to a positive and significant relationship with financial development, proxied by the number

of ATM per 100,000 adults. This means that as the number of ATM increases, financial instability increases. In other words, financial development in the MENA region reduces financial stability. However, the population variable is found to contribute positively to financial stability at the 1% significance level. A wider customer base for banks as a result of a bigger population expands their balance sheets to new areas of business and makes them more risk diversified and resilient to withstand unexpected losses.

Table 4: Regression Results- GLS Estimation, 2002-2013

Dependent Variable: Standard Deviation of Deposit Growth Rates	
Number of ATMs per 100,000 adults	0.001
	(5.29)**
Number of banks per 100,000 adults	-0.001
	(1.25)
GINI	-0.001
	(0.40)
Inflation	-0.001
	(0.84)
Financial integration	0.052
	(4.70)**
Log population	-0.017
	(4.49)**
Growth rate of GNI	0.036
	(1.19)
Growth rate of poverty	-0.001
	(0.97)
Constant	0.394
	(2.45)*
<i>N</i>	72

Source: Authors' estimates.

Notes: a * ($p < 0.05$) indicates significance at the 5% level; A ** ($p < 0.01$) indicates significance at the 1%.

N is the number of observations.

More importantly, financial integration in the MENA region is found to contribute negatively to financial stability; i.e., an increase in financial integration reduces financial stability. The lack of strong political and economic institutions to supervise and regulate financial markets, especially those which have initiated the liberalization of their markets, has been a contributing factor in financial instability. The absence of these institutions could trigger a financial/economic crisis, further widening economic inequality, and poverty. Another possible explanation is that increased financial integration of MENA's financial markets, mainly those of Egypt, Tunisia, Morocco, the UAE, and Jordan in the absence of a well-functioning regulatory environment, has caused financial instability and has triggered capital flights. This was particularly the case during the 2008 financial crisis, when Egypt's banking sector experienced a significant outflow of bank deposits, further widening the gap between the rich and poor and contributing further to increasing the poor segment of the population. Timely financial adjustment measures have, however, prevented a currency and banking crisis to unfold in Egypt; a crisis which could have been similar to the 2009 Dubai financial crisis, with devastating consequences on a highly growing poor Egyptian population.

While the GCC financial markets have remained relatively closed in the past, the recent and uncoordinated liberalization attempts have made those financial and banking sectors more vulnerable to the recent financial and debt crises. In particular, the fast attempts to liberalize and financially integrate the Saudi and UAE financial markets with the more mature markets of the United States and Europe has had devastating consequences on their banking sectors and stock markets. This has also further widened the gap between the rich and poor with more than 30% of the Saudi population now living under the poverty line.

When deciding on whether to focus on reforms to promote financial development (financial inclusion, innovation, access to financial services, etc.) and reduce poverty and income inequality, or to focus on further

improvements in financial stability, MENA policy-makers will have to bear in mind the tradeoff that exists between financial development and financial stability. Carefully designed financial development policies need to be timely introduced in order not to destabilize the financial system. Moreover, the latest debt and financial crises have shown that financial liberalization and development may not always be conducive to poverty and inequality reduction on the one hand, and to stimulate growth and development on the other. On the contrary, and in many instances, policies aimed at fostering financial development and innovations have triggered recessions and in many MENA countries have had detrimental effects on growth and development and have further widened the gap between the rich and poor.

Conclusion and Policy Recommendations

This paper studied the effects of financial development on income inequality and poverty as well as the effects of financial development and integration on financial stability in eight MENA countries. The empirical results have shown that financial developments decrease inequality but have no significant effect on poverty. Inflation and population increase both inequality and poverty. Other empirical results have shown that the secondary enrollment ratio and the trade openness variables are found to significantly affect poverty. Finally, while empirical evidence indicates that financial development and financial integration are contributing factors to financial instability, an increase in MENA's population contributes positively to financial stability. This study has also shown that greater access to financial services is not positively contributing to the resilience of the banking system deposit funding base. This is particularly important during times of financial crises. Enhanced resilience of bank funding supports overall financial stability of the banking sector and the entire financial system. The latest debt and financial crises have shown that financial liberalization and development in MENA may not always be conducive to poverty reduction and financial stability improvements.

Our empirical findings have important policy implications. MENA policy makers face tradeoffs when deciding whether to focus on reforms to promote financial development (financial inclusion, innovation, financial access, etc...) or focus on further improvements in financial stability. However, synergies between promoting financial development and financial stability can also exist. The results of this study could help foster a better policy to reform the financial sector by demonstrating how broadening the use of banking can have a direct impact on income distribution.

The MENA region stands at a crossroad, with changes sweeping many of its countries and creating an environment conducive to financial and economic reform. Having missed a number of opportunities to reduce poverty and inequality, to introduce extensive financial and institutional reforms, and to make substantial progress in financial development, more effort still needs to be devoted in the future. The social movements in the region and the earlier series of financial crises have exposed the weaknesses of the adopted financial development model and have raised questions as to how to reshape financial policies most effectively and create the space to address the needs of everyone in society, reaching even the most deprived. The slow pace of financial development and liberalization policies adopted in most MENA countries in the past has yielded a relatively acceptable level of economic growth and, in general, managed to meet the goals of economic and financial stability. Oil booms have generated acceptable growth rates, with oil-abundant MENA countries delivering much more than those less developed. However, the impact of such economic and financial policy choices has not led to the desired outcomes in terms of human development, poverty reduction, and financial stability. Growth has not been inclusive and has widened the gap between the rich and poor; a case in point is Saudi Arabia. Indeed, in certain cases, financial liberalization has actually contributed to further financial instability. In light of a critical reassessment of the achievements and failures of MENA countries, a new financial development approach should be adopted. This new model should

be more holistic, integrating the financial and social spheres in combination with strong financial institutions. It is vital that MENA policymaking should expand to accommodate these spheres and place them on equal footing in the service of a long-term rights-based financial developmental vision.

The new model will reconsider financial policies that incorporate developmental priorities and would thus achieve structural change. Financial policies will have to be reshaped to achieve not only financial stabilization, adjustment, and economic growth, but to also trigger the transformation required to generate growth that is broad-based, inclusive, and sustainable. Within this context, such policy tools as financial development, inclusion, financial sector diversification, and liberalization will have to be addressed. At the same time, financial policies should not shy away from meeting the same objectives as social policy under this new financial development paradigm in which the interests and welfare of every person in society are the target. It is also of central importance to ensure that social policy goes hand-in-hand with financial development policies to bring about the required transformation and ensure inclusive financial and economic growth. While the social and financial spheres should interconnect to create synergies, this new financial development model will not achieve its goals if political and institutional reforms remain shallow. Finally, sustainable poverty and income inequality reduction requires an acknowledgement that politics, institutions, financial and socio-economic policies are intertwined and have an impact on each other. Synchronizing financial and social policies with institutional and political reform would bring about positive, sustainable change under a clearly defined financial development vision.

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