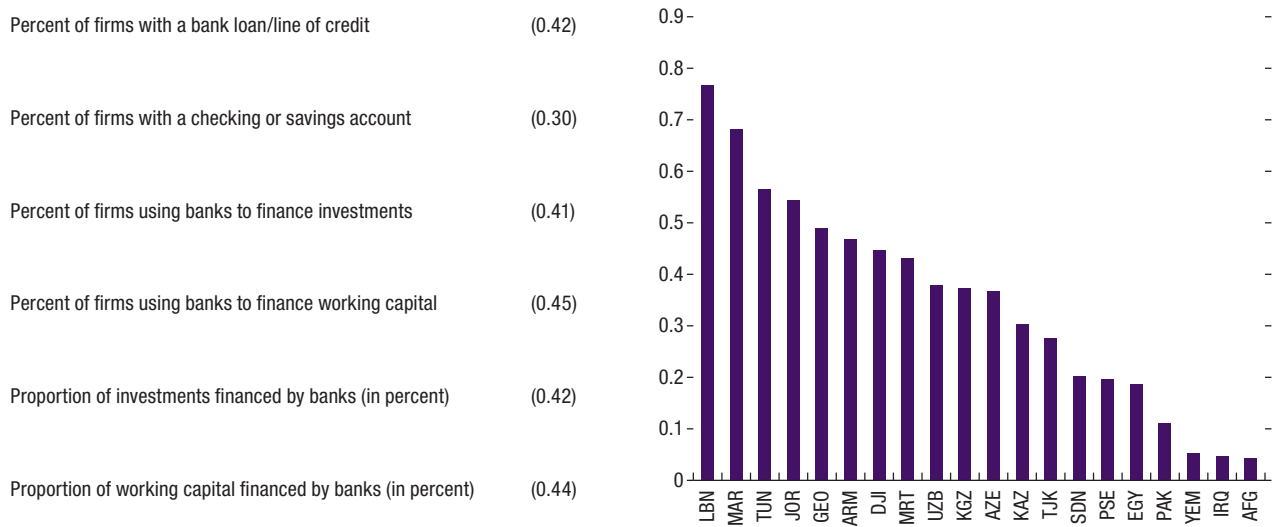


Annex 1. Methodology for the SME Financial Inclusion Index

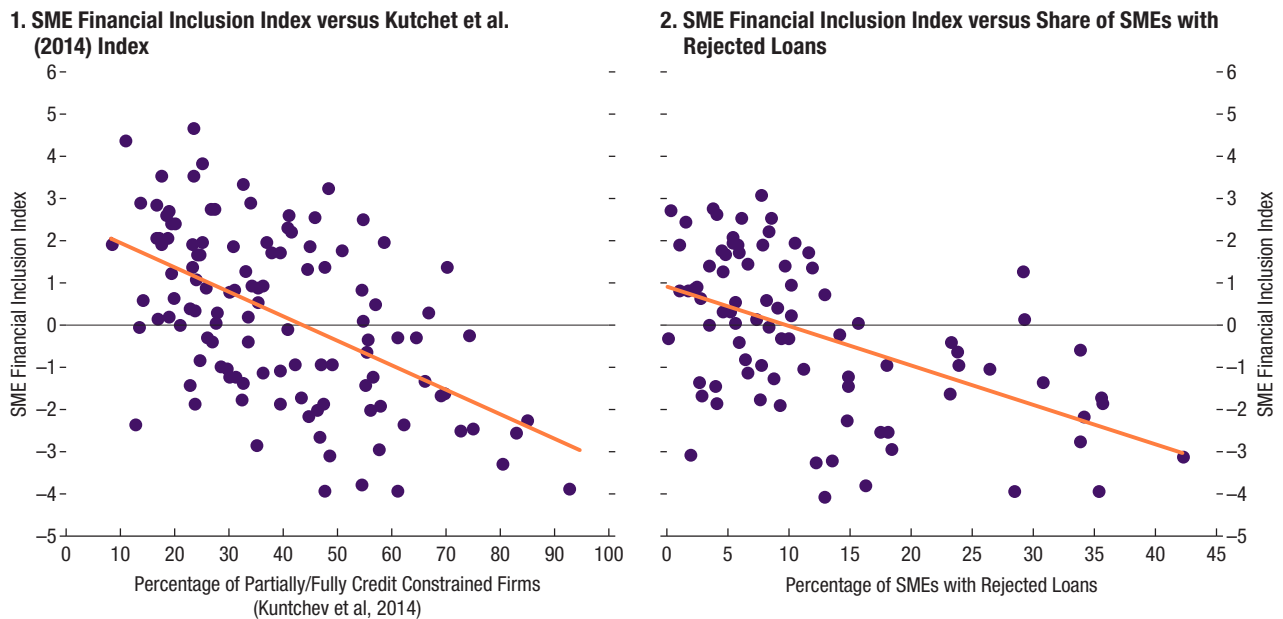
The SME financial inclusion index reduces multidimensional data from the *World Bank Enterprise Survey* to a summary index using the following steps: (1) normalization of variables; (2) aggregation of normalized variables into sub-indices by principal component analysis, using the first component; and (3) aggregation of the subindices into the final index. Several choices need to be made in constructing the index. In the *World Bank Enterprise Survey*, several questions are designed to evaluate financial conditions for firms. From these, the variables most relevant to bank financing conditions were chosen (listed below) and divided into categories of access and usage. This index is available for 119 countries worldwide, of which 20 are in the MENAP and CCA regions. The index captures the observed SME financial inclusion that reflects the equilibrium of supply and demand for financial services for SMEs. As shown in the figures below, it correlates strongly with alternative measures of SME financial inclusion, with the share of partially or fully credit-constrained SMEs (Kuntchev and others, 2014), and with the share of SMEs with rejected loans (which highlights the importance of supply-side constraints that are the main focus of the paper).

Annex Figure 1.1. SME Financial Inclusion Index



Sources: World Bank Enterprise Surveys, IMF Staff calculations.

Annex Figure 1.2. SME Financial Inclusion, Credit Constraints and Rejected Loan



Sources: Kuntchev and others (2014), World Bank Enterprise Surveys, IMF Staff calculations.

Annex 2. SME Financial Inclusion Gap

Financial inclusion is driven mainly by macroeconomic and institutional fundamentals. In the following table, financial inclusion is linked to these fundamentals:¹

- Economic development (income per capita), which captures country characteristics such as quality of infrastructure, education, and health
- Governance (control of corruption)
- Credit information availability (coverage of credit registries)
- Economic competition (proxied by the share of small firms in the private sector)
- Business environment, including contract enforcement

The SME financial inclusion gaps are calculated as the difference between countries' actual financial inclusion level and that of the country at the 90th percentile.

Annex Table 2.1. SME Index

Variables	(1) Model 1
Log of PPP GDP per capita	0.0773*** (0.00951)
Time required to enforce a contract (days)	-0.000130*** (0.00004)
Small-firm share of total firms	-0.207** (0.09470)
Control of corruption: estimate	0.0709*** (0.02450)
Public credit registry coverage (% of adults)	0.00429*** (0.00143)
Observations	119
<i>R</i> squared	0.912

Source: IMF staff calculations.

Note: Standard errors are in parentheses. PPP = purchasing power parity.

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

¹Indicators of governance (rule of law) and financial openness should be interpreted with caution due to a limited number of respondents, limited geographical coverage, and standardized assumptions on business constraints and information availability. They indicators may also not reflect more recent structural changes.

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Annex 3. Growth and Employment Benefits of Increased Access to Financing for SMEs

The relationships between SME access to financing, unemployment, and growth are examined using static and dynamic panel regression frameworks.

Real GDP growth is linked to SME financial inclusion (financial inclusion index and SME bank loans) while controlling for other factors that are likely to affect growth, human capital, the macroeconomic environment, and the quality of institutions. The impact of financial inclusion on unemployment is estimated using a similar framework.

The following equations were estimated:

$$(1) \textit{Growth}_{it} = \alpha + \beta FI_{it} + \lambda X_{it} + \gamma_i + \varphi_t + \varepsilon_{it}$$

$$(2) \textit{Unempl}_{it} = \alpha + \beta FI_{it} + \lambda X_{it} + \gamma_i + \varphi_t + \varepsilon_{it}$$

where *Growth* is real GDP, *Unempl* is unemployment, *FI* is the measure of SME financial inclusion (the financial inclusion index or bank loans to SMEs),¹ *X* is a vector of control variables, γ_i and φ_t are country and time fixed effects (respectively), and ε_{it} is the error term. *i* and *t* indicate country and year, respectively.

Equations (1) and (2) were first estimated using ordinary least squares panel fixed effects and generalized least squares (GLS) estimators. GLS with AR(1) correction take into account the possibility of a strong autocorrelation between unemployment and GDP growth data. To overcome a potential endogeneity bias affecting these estimates, dynamic general method of

A more detailed discussion is provided in Appendino and others (IMF Working Paper, forthcoming).

¹Data on loans to SMEs offer a longer time series (compared with the financial inclusion index), which allows for implementation of the dynamic generalized method of moments.

moments estimations (Arellano and Bond 1991; Blundell and Bond 1998) were also performed. Given the limited availability of external instruments, this estimation method relies on an internal instrumentation approach in which the endogenous variables are instrumented with their lags. To further check the robustness of the results, some specifications include private credit to GDP as an additional control variable. This helps separate more precisely the impact of SME lending from that of lending to the broader private sector.

Annex Table 3.1. Employment Benefits of SME Financial Inclusion

Variables	Dependent variable: unemployment rate (log)				
	(1) FE	(2) GLS	(3) GLS	(4) GMM	(5) GMM
Loans to SMEs (log)	0.0169 (0.0222)	-0.0700*** (0.0140)	-0.045*** (0.014)	-0.136*** (0.0472)	-0.131*** (0.042)
Education (log)	-0.212 (0.241)	0.226* (0.125)	0.279** (0.131)	-0.162 (0.205)	-0.278 (0.185)
GDP (log)	-0.448*** (0.0633)	0.00755 (0.0345)	-0.012 (0.034)	-0.230** (0.106)	-0.234*** (0.072)
Population (log)	0.810*** (0.278)	0.00976 (0.0335)	0.006 (0.034)	0.297 (0.225)	0.350 (0.226)
Inflation (log)	-0.0394*** (0.0130)	-0.00763 (0.00838)	-0.008 (0.008)	-0.0144** (0.00717)	-0.021*** (0.005)
Lagged unemployment rate (log)				0.269*** (0.0283)	0.274*** (0.042)
Credit to GDP (log)			-0.094*** (0.034)		0.084 (0.053)
Constant	-8.863** (4.462)	1.768*** (0.639)	1.972*** (0.650)		
Hansen <i>P</i> value				0.232	0.250
Observations	326	325	324	273	273
<i>R</i> squared	0.349				
Number of countries	38	37	37	37	37

Source: IMF staff calculations.

Note: Standard errors are in parentheses. Country and year fixed effects are included but not reported. Generalized least squares (GLS) estimates incorporate AR(1) correction. The list of instruments for generalized method of moments (GMM) is limited to a maximum of four lags to avoid using too many instruments. *P* values of Hansen test of overidentifying restrictions (to test the null hypothesis that the instruments are valid) are reported. FE = fixed effects.

****p* < 0.01; ***p* < 0.05; **p* < 0.1.

Annex Table 3.2. Growth Benefits of SME Financial Inclusion

Variables	Dependent variable: real GDP growth				Real GDP (log)	
	(FE) (1)	(GLS) (2)	(GMM) (3)	(GMM) (4)	FE (5)	FE (6)
Loans to SME growth	0.00516 (0.005)	0.01067*** (0.003)	0.08298*** (0.023)	0.05193*** (0.007)		
SME financial inclusion index (log)					0.056** (0.023)	0.060** (0.024)
Gross fixed K formation growth	0.00035*** (0.000)	0.00039*** (0.000)	0.00028 (0.001)		−0.001 (0.001)	
Health & education	0.00013 (0.000)	0.00022** (0.000)	0.00130** (0.001)	0.00026 (0.000)	0.124*** (0.044)	0.103** (0.043)
Voice & accountability	0.05089*** (0.018)	−0.00262 (0.003)	−0.01819 (0.020)	0.01416** (0.006)	0.368*** (0.095)	0.361*** (0.111)
Political stability	0.00623 (0.010)	0.00174 (0.002)	0.00121 (0.021)	−0.00500 (0.005)	−0.018 (0.052)	−0.034 (0.055)
Inflation	−0.00067*** (0.000)	−0.00052*** (0.000)	0.00066 (0.001)	0.00049* (0.000)	0.001 (0.002)	0.001 (0.004)
Money growth	0.00190*** (0.000)	0.00125*** (0.000)	0.00062 (0.001)	0.00166*** (0.000)	0.009*** (0.002)	
Global competitiveness	−0.00117*** (0.000)	−0.00041*** (0.000)	−0.00147 (0.001)	−0.00081*** (0.000)	−0.003*** (0.001)	−0.003 (0.002)
2007–09 global financial crisis	−0.03242*** (0.005)	−0.02836*** (0.004)	−0.03729*** (0.009)	−0.03635*** (0.002)	−0.167*** (0.019)	−0.114* (0.062)
Low income	0.04194* (0.023)	0.04049*** (0.009)	−0.05051 (0.076)	0.09595*** (0.013)	0.148*** (0.047)	0.084 (0.066)
Lower middle income	0.04354*** (0.015)	0.04067*** (0.008)	−0.06293 (0.051)	0.06238*** (0.010)	0.189*** (0.029)	0.119*** (0.036)
Upper middle income	0.02215** (0.010)	0.01809*** (0.006)	−0.06221 (0.041)	0.03459*** (0.009)	0.235*** (0.016)	0.148*** (0.026)
Private credit (log)				−0.00016 (0.002)		0.051 (0.093)
Lagged real GDP growth			0.76060*** (0.260)	0.20632*** (0.032)		
Constant	0.07976*** (0.024)	0.02693*** (0.004)	0.04838 (0.051)	0.01672 (0.019)	6.626*** (0.290)	6.499*** (0.748)
Observations	302	300	302	316	104	103
R squared	0.259				0.986	
Number of countries	46	44	46	48	89	89
Wald test <i>P</i> value	.		0	0		
Hansen <i>P</i> value	.		0.244	0.691		

Source: IMF staff calculations.

Note: Standard errors are in parentheses. Country and year fixed effects are included but not reported. Generalized least squares (GLS) estimates incorporate AR(1) correction. The list of instruments for generalized method of moments (GMM) is limited to the maximum of four lags to avoid using too many instruments. *P* values of Hansen test of overidentifying restrictions (to test the null hypothesis that the instruments are valid) are reported.

****p* < 0.01; ***p* < 0.05; **p* < 0.1.

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Annex 4. Benefits from Relaxing Constraints on SME Financial Inclusion: Country-Specific Analysis

Using the dynamic stochastic general equilibrium (DSGE) model in Dabla-Norris and others (2015b), we analyzed specific financial inclusion constraints facing individual countries and the possible macroeconomic impact of their relaxation.¹

Sample: Based on *World Bank Enterprise Survey* data, the sample covers six MENAP countries (Egypt, Jordan, Lebanon, Morocco, Pakistan, Tunisia) and seven CCA countries (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, Uzbekistan).

Overview of simulated results: Limited financial inclusion could weigh on economic prosperity by discouraging productive firms or forcing them to operate below optimal scale owing to insufficient financing. These are the key variables used to assess constraints to SME financial access:

- *Fixed financial access cost* (ψ) incorporates several factors that prevent entrepreneurs from accessing credit, including asymmetric information; higher cost of serving the SME sector; and limited financial literacy, which affects SME credit demand. Relaxing these constraints could significantly boost the share of firms with access to credit and raise economic potential. Countries such as Egypt, Pakistan, and Uzbekistan could improve long-term output by several percentage points by mitigating such constraints.
- *Collateral requirements* (λ) limit borrower moral hazard and contribute to greater financial stability. However, they may also force small entrepreneurs (with few resources of their own to put down as collateral) out of the market or to operate at a suboptimal scale. In countries such as Armenia and

¹Results from the model should be interpreted carefully. For instance, the model applies the same probability of failure (p) to all entrepreneurs, irrespective of their talent or firm size. As a result, greater financial inclusion does not lead to riskier credit portfolios, which in some cases may not be a realistic assumption.

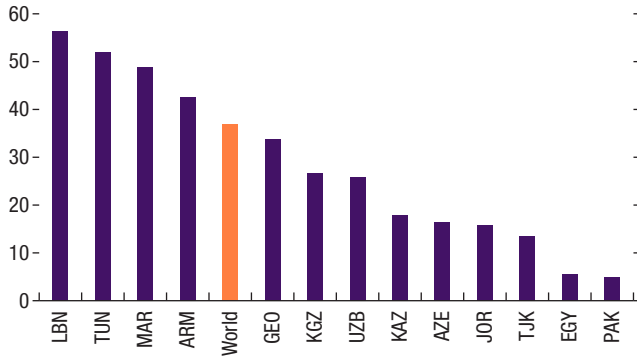
Georgia, policies to loosen collateral constraints could help reap significant benefits from greater SME financial inclusion.

- *Monitoring cost* (χ) captures how efficiently banks can assess credit risk (including collateral recovery), which contributes to the margin between interest rates applied to highly leveraged borrowers and the cost of funding (savings rate). Low interest rate margins encourage highly productive SMEs to expand their production toward the optimal scale. However, they may also lead to excessive risk taking and rising nonperforming loans. This channel appears to have a relatively small macroeconomic impact for countries in the sample.

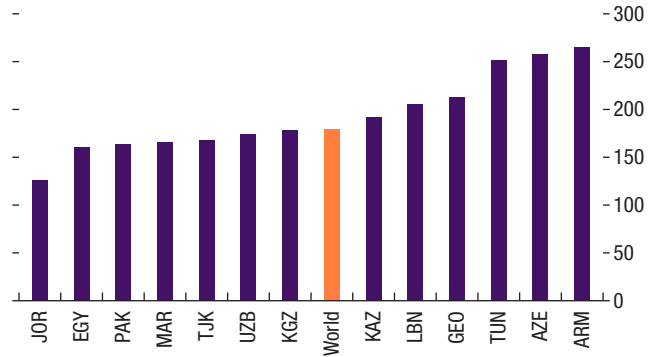
Annex Figure 4.1. Stylized Facts and Model Simulation

Part I. Financial Inclusion Indicators¹

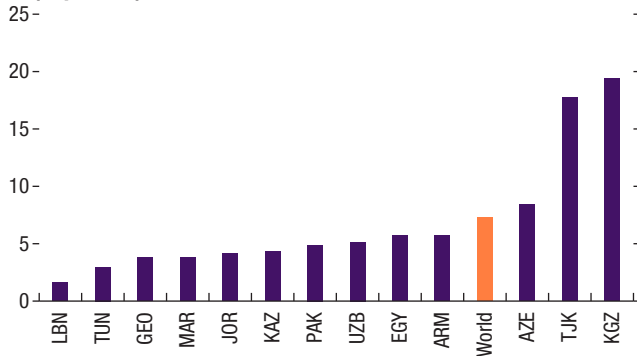
1. Firms with a Bank Loan/Line of Credit
(In percent of total firms)



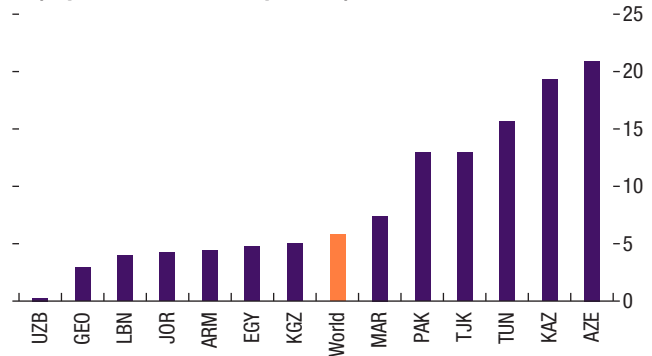
2. Value of Collateral Needed for a Loan
(In percent of the loan amount)



3. Lending-Deposit Interest Rate Spread
(In percent)



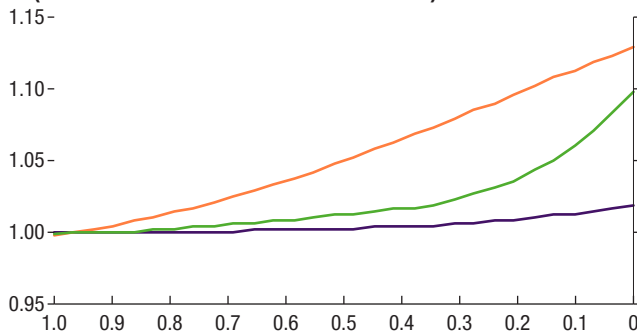
4. Nonperforming Loans
(In percent of total loan portfolio)



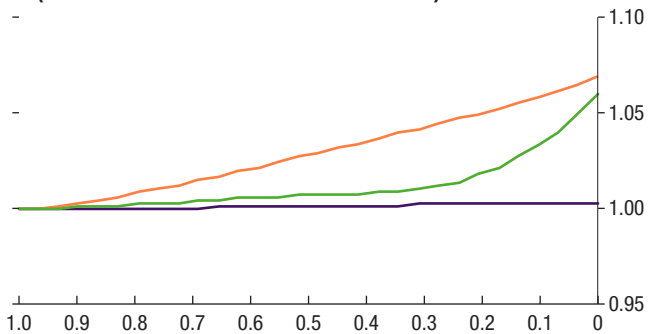
Part II. Model Simulated Comparative Statics: MCD Average^{2,3}

— Reducing monitoring cost — Relaxing collateral constraint — Reducing financial access cost

5. Gross Domestic Product
(Ratio relative to the most constraint case)



6. Total Factor Productivity
(Ratio relative to the most constraint case)



Sources: World Bank Enterprise Survey, World Development Indicators, and IMF staff calculation.

Note: ISO country codes are used for abbreviations. MENAP = Middle East, North Africa, Afghanistan, and Pakistan; CCA = Caucasus and Central Asia; MCD = Middle East and Central Asia.

¹World average is calculated based on information for all country-year combination for which an enterprise survey has been conducted. The survey covers mainly emerging markets and low-income countries.

²MCD aggregate is constructed using simulated comparative statics for six MENAP countries (Egypt, Jordan, Lebanon, Morocco, Pakistan, and Tunisia) and seven CCA countries (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, and Uzbekistan). Simulation is done using the most recent World Bank Enterprise Survey data. Individual country outcome is weighted by relative GDP share computed using 2013 nominal GDP in U.S. dollar.

³Horizontal axis shows the magnitude of three financial frictions, normalized to be between 0 (least constraining case) and 1 (most constraining case). Parameter for monitoring cost (χ) ranges from 0.5 (implying a lending-deposit spread as high as 60 percent in some countries) and 0 (implying almost zero spread). Collateral requirement is captured by leverage ratio (λ)-calculated inclusive of collateral which varies between 1 (no borrowing) and 2 (borrowing allowed up to the amount of collateral). Financial access cost (ψ) varies from 3 (share of firms with credit approaching 0 percent) to 0 (share of firms with credit approaching 100 percent).

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Annex 5. Access to Financing and Firm-Level Employment, Sales, and Productivity Growth

To assess the impact of access to financing on firm-level employment and labor productivity growth in MENAP and CCA countries, we employ the following specification, as in Ayyagari and others (2016), using data from the *World Bank Enterprise Surveys*:¹

$$\Delta E_{ijt} = \alpha F_{ijt} + BX_{ijt} + Z_{jt} + C_j + Y_t + \varepsilon_{ijt},$$

where ΔE_{ijt} is the annual employment (or labor productivity) growth for firm i in country j in year t ; F_{ijt} is an indicator variable capturing whether a particular firm in a particular country surveyed in a particular year had a formal loan outstanding; X_{ijt} and Z_{jt} are firm-level and country-level controls, respectively; C_j and Y_t are country and year fixed effects. We estimated separately for (1) SMEs and large firms to test whether employment gains from access to financing are larger for smaller firms, and for (2) SMEs only. The results are consistent with our hypotheses. The point estimates for α are positive and statistically significant with p -values below 10 percent for each of them, and their relative magnitudes are consistent with our hypotheses regarding firm size as well (see Figure 3).

We used the point estimates for SMEs to estimate macroeconomic gains from SME financial inclusion through a simple growth accounting exercise. This suggests that the additional 1.3 percent in SME employment growth, added to a gain from augmented labor productivity of 2.3 percent (with a labor share equal to two-thirds) implies an additional 1 percent of GDP growth. Such an increase in employment represents about 16.5 million new jobs in MENAP and CCA countries (14.3 million in MENAP and 2.3 million in CCA) by 2025 above the baseline employment projection that follows the

¹The data cover Armenia, Azerbaijan, Djibouti, Egypt, Georgia, Iraq, Jordan, Kazakhstan, Kyrgyz Republic, Lebanon, Morocco, Tajikistan, Tunisia, Uzbekistan, and Yemen, for different years from 2008 to 2016.

average annual growth rate from 2012 to 2017 (using employment data from the International Labour Organization).

Finally, we explore the introduction of credit bureaus as a supply-side policy change following Ayyagari and others (2016). For this, we replace F_{ijt} in the above equation with CB_{jt} , a proxy for SME credit bureau coverage based on the share of adults covered by credit bureaus (using data from the World Bank's Doing Business Indicators). The results are consistent with the finding that financial inclusion has a positive impact on employment growth, with SMEs being a key driver.² We used the point estimates of α to calculate the average employment growth gains from closing the credit bureau coverage gap with respect to the average emerging market and developing economy and to the average advanced economy for countries in our sample that are below each of these thresholds (see Figure 8).

²The α point estimate for SMEs is similar to that for the overall sample, with similar statistical significance.

Annex 6. SME Financial Inclusion and Macroeconomic Policy

To test the link between macroeconomic policies and SME financial inclusion, we separate MENAP and CCA countries into those with high and low SME financial inclusion, estimate two separate panel vector autoregressions at the country level, and test if the estimates for those with higher SME financial inclusion present dynamics consistent with more effective policy. We include the countries for which we have the needed annual macroeconomic time series from 1990 to 2017, using Haver Analytics data and the SME financial inclusion index as in Annex 1.¹

In the case of fiscal policy, we explore the link between SME financial inclusion and the efficiency of tax collection. We estimate the following panel vector autoregression separately for firms in the top and bottom quartiles of SME financial inclusion:

$$Y_{it} = AY_{it-1} + u_i + v_t + e_{it}$$

where $Y = \left\{ \frac{Tax}{GDP}, output\ gap, inflation \right\}$, which gives the recursive ordering for identifying structural shocks. We measure the efficiency of tax collection as the impulse response of $\frac{Tax}{GDP}$ to a structural positive shock to the output gap. The result confirms the hypothesis that SME financial inclusion makes tax collection more effective: high-financial-inclusion countries present a statistically significant (at 10 percent level) first lag response, but the same parameter is not statistically significant for low-financial-inclusion countries.²

¹Countries covered are Armenia, Azerbaijan, Egypt, Georgia, Iraq, Jordan, Kazakhstan, the Kyrgyz Republic, Lebanon, Morocco, Tajikistan, Tunisia, Uzbekistan, and Yemen.

²Top and bottom halves did not present statistically significant results.

We test the strength of monetary policy transmission estimating the same panel vector autoregression following Mehrotra and Yetman (2014) and IMF (2018a), with the same equation as above but with $Y = \{output\ gap, inflation, nominal\ interest\ rate\}$. In this case, the recursive ordering for identifying structural shocks allows us to measure the strength of monetary transmission by the magnitude of the impulse response of the output gap to a 100 basis point structural shock to the nominal interest rate, which, as in the case of fiscal policy, is statistically significant at the 10 percent level only for the high-financial-inclusion countries. The ratio of the variance of the output gap to inflation is higher for the group of countries with higher SME financial inclusion, providing evidence in support of the hypothesis that SME financial inclusion strengthens monetary policy effectiveness (see Figure 4).

Annex 7. Drivers of SME Financial Inclusion

This analysis aims to (1) identify the main determinants of SME access to formal (bank) financial services and (2) provide evidence about key constraints to SME financial inclusion in MENAP and CCA countries specifically. The empirical tests rely on the following two equations:

$$(1) FI_{it} = \alpha + \beta X_{it} + \lambda region_dummy + \rho z_{it} + \varepsilon_{it}$$

$$(2) FI_{it} = \alpha + \beta X_{it} + \lambda region_dummy + \delta region_dummy * z_{it} + \rho z_{it} + \varepsilon_{it}$$

where the dependent variable (FI) is the composite index of SME financial inclusion. X is a vector of control variables that includes total investment (in percent of GDP), inflation, SME share of employment (in percent of total employment), and the level of economic development. The region dummy is either a CCA or MENAP dummy variable, which takes the value of 1 for MENAP or CCA countries and 0 otherwise. Both equations are estimated with CCA and MENAP dummies, separately. The baseline specification is extended to control successively for additional characteristics (z) capturing¹

- **Broader macroeconomic environment:** diversification, informality, competition, quality of infrastructure, saving behavior, interest rate restrictions, public investment (percent of total investment), fiscal balance, and an oil-exporter country dummy.²

A more detailed discussion is provided in Ndoye and others (IMF Working Paper, forthcoming).

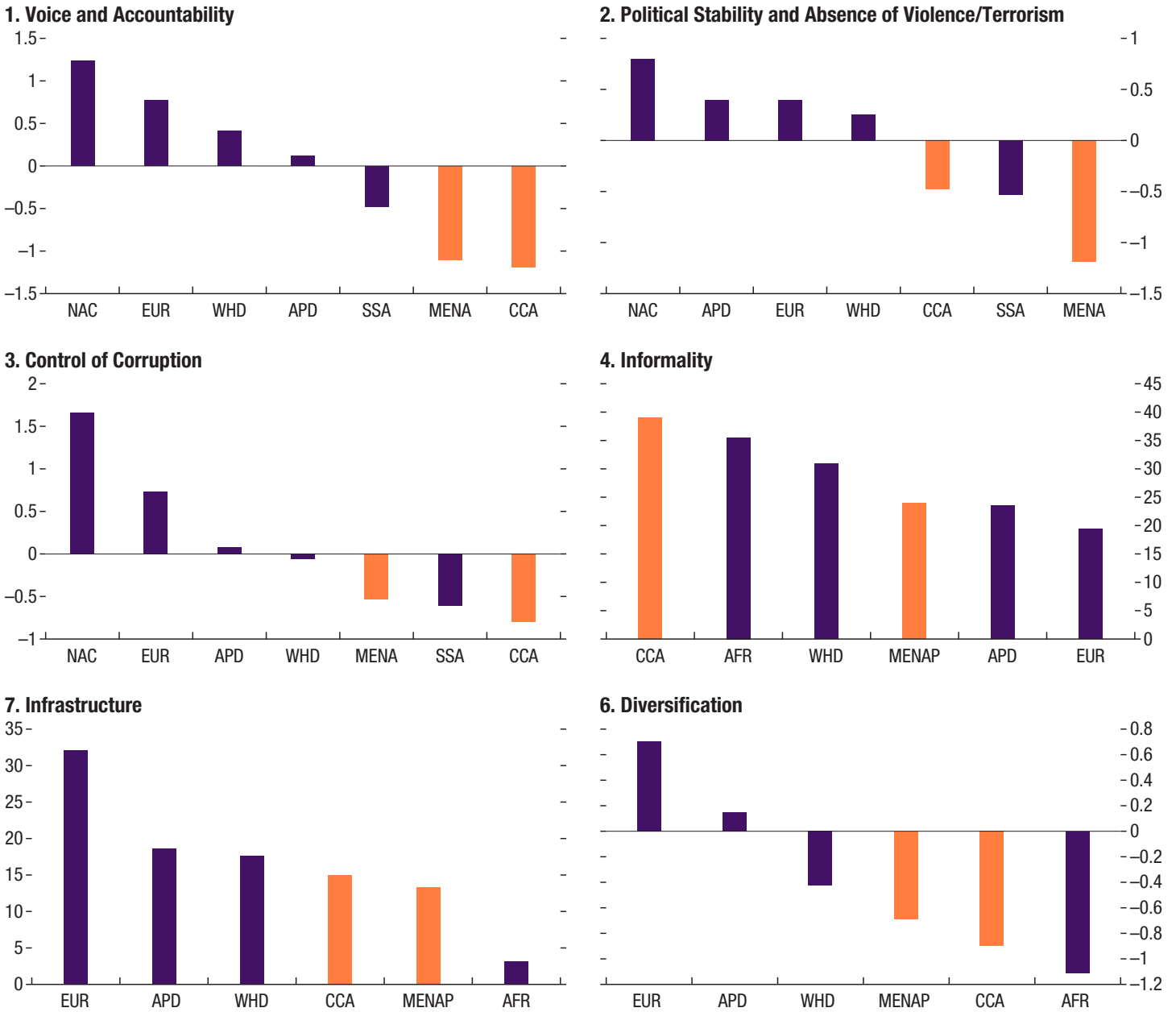
¹A larger set of controls was tested. This appendix only reports only on the variables that were found to have a statistically significant relationship with SME financial inclusion.

²Diversification is proxied by the Economic Complexity Index (OECD); infrastructure by the share of telephone lines in the population, and, informality by the share of the shadow economy (in percentage of total GDP).

- **Quality of institutions:** voice and accountability, political stability, government effectiveness, and control of corruption.
- **Banking sector characteristics:** return on equity, asset quality (nonperforming loan ratios), bank deposits, banking sector stability, and banking sector concentration.
- **Business environment:** taxation (percent of profit), cost of starting a business and registering property, time to enforce a contract, public credit registry coverage, and property rights.

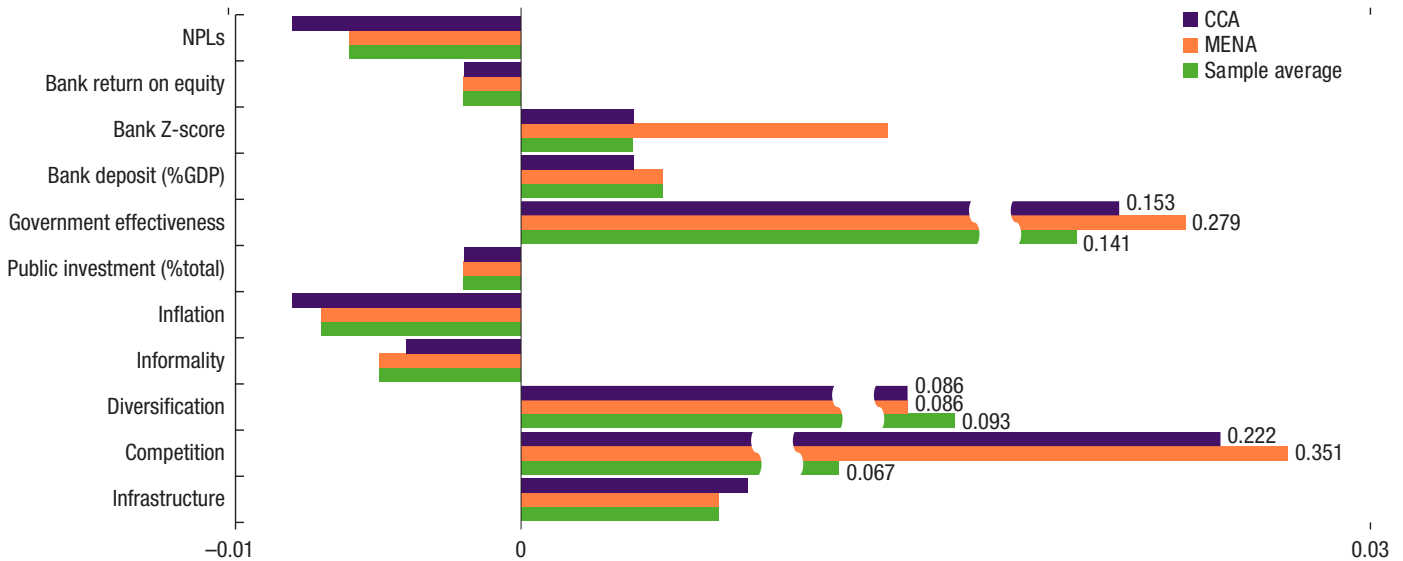
Equation (1) describes a linear relationship between financial inclusion and its determinants, while equation (2) explores potential nonlinearities, especially with respect to the MENAP region. Both equations are estimated using ordinary least squares. Annex Figure 7.1 provides some preliminary stylized facts on the governance and structural characteristics across regions. Overall, the MENAP and CCA regions generally perform poorly compared with their peers. Annex Figures 7.2 and 7.3 report the estimated coefficients (statistically significant at the 10 percent level or lower) for the full sample as well as specifically for the MENAP and CCA regions.

Annex Figure 7.1. Selected Governance and Structural Indicators

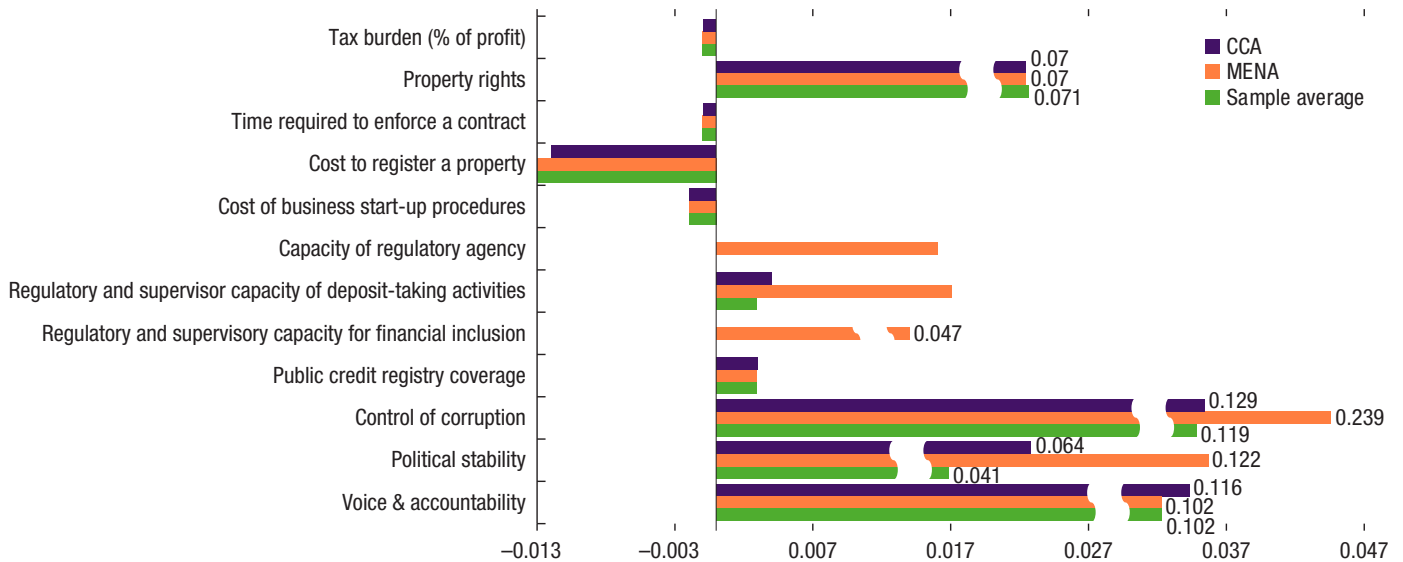


Sources: Worldwide Governance Indicators; Global Competitiveness Index, OECD—latest available data.

Annex Figure 7.2. The MacroFinancial Environment and SME Financial Inclusion



Annex Figure 7.3. Institutions, Business Environment, and SME Financial Inclusion



Source: IMF staff estimates.

Note: Coefficient estimates from equations (1) and (2), based on OLS panel fixed effects. The coefficients are statistically significant at a minimum level of 10%, with robust standard errors.

References

- Abraham F, and S. Schmukler. 2017. "Addressing the SME Finance Problem." Research and Policy Brief 9, World Bank Malaysia Hub, World Bank, Washington, DC.
- Albuquerque, R., and H. A. Hopenhayn. 2004. "Optimal Lending Contracts and Firm Dynamics." *Review of Economic Studies* 71 (2): 285–315.
- Allen, F., A. Demirguc-Kunt, L. Klapper, and M. Soledad. 2012. "The Foundations of Financial Inclusion: Understanding Ownership and Use of Formal Accounts." World Bank Policy Research Working Paper 6290, Washington, DC.
- Anzoategui, D., M. Martinez Peria, and R. Rocha, 2010. "Bank Competition in the Middle East and Northern Africa Region." *Review of Middle East Economics and Finance* 6 (2).
- Arcand, J., E. Berkes, and U. Panizza. 2015. "Too Much Finance?" *Journal of Economic Growth* 20:105-48.
- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies*, 58 (2), 277-297.
- Asian Development Bank (ADB). 2014. "Capital Market Financing for SMEs: A Growing Need in Emerging Asia." ADB Working Paper Series on Regional Economic Integration, Manila.
- Ayyagari, M., A. Demirguc-Kunt, and V. Maksimovic. 2014. "Who Creates Jobs in Developing Countries?" *Small Business Economics* 43 (1): 75–99.
- Ayyagari, M., P. Juarros, M. Peria, and S. Singh. 2016. "Access to Finance and Job Growth: Firm-Level Evidence across Developing Countries." World Bank Policy Research Working Paper 7604, Washington, DC.
- Baduel and others
- Beck, T., A. Demirguc-Kunt, L. Laeven, and R. Levine. 2008. "Finance, Firm Size and Growth." *Journal of Money Credit and Banking* 40 (October).
- Beck, T., A. Demirguc-Kunt, and V. Maksimovic. 2005. "Financial and Legal Constraints to Growth: Does Firm Size Matter?" *Journal of Finance* LX (1).
- . 2008. "Financing Patterns around the World: Are Small Firms Different?" *Journal of Financial Economics* 89:467–87.
- Beck, T., A. Demirguc-Kunt, and D. Singer. 2013. "Is Small Beautiful? Financial Structure, Size and Access to Finance." *World Development* 52:19–33.

- Bank for International Settlements (BIS). 2018. “Sound Practices: Implications of Fintech Developments for Banks and Bank Supervisors.” Basel.
- Berton, F., S. Mocetti, A. Presbitero and M. Richiardi. 2018. “Banks, Firms, and Jobs.” *Review of Financial Studies* 31:2113–56.
- Bhattacharya, R., and H. Wolde. 2010. “Constraints on Growth in the MENA Region.” IMF Working Paper 10/30, International Monetary Fund, Washington, DC.
- Blundell, R. et Bond, S. (1998). “Initial conditions and moment restrictions in dynamic panel data models”, *Journal of Econometrics* 87, pp. 115-143
- Bos, J. W. B., R. De Haas, and M. Millone. 2016. “Show Me Yours and I’ll Show You Mine: Sharing Borrower Information in a Competitive Credit Market.” BAFFI CAREFIN Centre Research Paper 2015–8, Milan.
- Brown, M., T. Jappelli, and M. Pagano. 2009. “Information Sharing and Credit: Firm-Level Evidence from Transition Countries.” *Journal of Financial Intermediation* 18:151–72.
- Calice, P. 2016. “Assessing Implementation of the Principles for Public Credit Guarantees for SMEs.” World Bank Group Finance and Markets Global Practice Group, Washington, DC.
- Chatzouz. M., A. Gereben, F. Lang, and W. Toufs. 2017. “Credit Guarantee Schemes for SME Lending in Western Europe.” EIF Research & Market Analysis Working Paper 2017/42, European Investment Fund, Luxembourg.
- Chodorow-Reich, G. 2014. “The Employment Effects of Credit Market Disruptions: Firm-Level Evidence from the 2008–9 Financial Crisis.” *Quarterly Journal of Economics* 129 (1): 1–59.
- Cihak, Martin; Mare, Davide Salvatore; Melecky, Martin. 2016. *The Nexus of financial inclusion and financial stability : a study of trade-offs and synergies* (English). Policy Research working paper; no. WPS 7722. Washington, D.C. : World Bank Group.
- Clarke, G., R. Cull, M. Martinez Peria, and S. Sanchez. 2003. “Foreign Bank Entry: Experience, Implications for Developing Economies and Agenda for Further Research.” *World Bank Research Observer* 18 (1): 25–59.
- Clementi, G. L., and H. A. Hopenhayn. 2006. “A Theory of Financing Constraints and Firm Dynamics.” *Quarterly Journal of Economics* 121 (1): 229–65.
- Dabla-Norris, E., Y. Deng, A. Ivanova, I. Karpowicz, F. Unsal, E. VanLeemput, and J. Wong. 2015a. “Financial Inclusion: Zooming in on Latin America.” IMF Working Paper 15/206, International Monetary Fund, Washington, DC.

- Dabla-Norris, E. Y. Ji, R. Townsend, and F. Unsal. 2015b. “Identifying Constraints to Financial Inclusion and Their Impact on GDP and Inequality: A Structural Framework for Policy.” IMF Working Paper 15/22, International Monetary Fund, Washington, DC.
- de la Torre, A., A. Ize, A. and S. Schmukler. 2011. “Financial Development in Latin America and the Caribbean: The Road Ahead.” World Bank, Washington, DC.
- Djankov, S., O. Hart, C. McLiesh, and A. Shleifer. 2008. “Debt Enforcement around the World.” *Journal of Political Economy* 116 (6).
- Djankov, S., C. McLiesh, and A. Shleifer. 2007. “Private Credit in 129 Countries.” *Journal of Financial Economics* 84:299–329.
- Duygan-Bump, B., A. Levkov, and J. Montoriol-Garriga. 2015. “Financing Constraints and Unemployment: Evidence from the Great Recession.” *Journal of Monetary Economics* 75:89–105.
- European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), and World Bank (WB). 2016. “What’s Holding Back the Private Sector in Mena? Lessons from the Enterprise Survey.” Washington, DC.
- Faccio, M. 2006. “Politically Connected Firms.” *American Economic Review* 96:369–86.
- Farazi, S. 2014. “Informal Firms and Financial Inclusion: Status and Determinants.” World Bank Policy Research Working Paper 6778, Washington, DC.
- Ferrari, A., O. Masetti, and J. Ren. “Interest Rate Caps: The Theory and The Practice.” World Bank Policy Research Working Paper 8398, Washington, DC.
- Federation of European Securities Exchanges (FESE). 2012. “SME Access to Capital Markets Funding.” Brussels.
- Financial Stability Board (FSB). 2017. “FinTech Credit: Market Structure, Business Models and Financial Stability Implications.” Report prepared by a Committee on the Global Financial System and Financial Stability Board working group. Basel.
- Gormley, T. 2010. “The Impact of Foreign Bank Entry in Emerging Markets: Evidence from India.” *Journal of Financial Intermediation* 19:26–51.
- Harwood, A., and T. Konidaris. 2015. “SME Exchanges in Emerging Market Economies: A Stocktaking of Development Practices.” Finance and Markets Global Practice Group, World Bank, Washington, DC.

- International Finance Corporation (IFC). 2011. "SME Finance Policy Guide." Washington, DC.
- International Monetary Fund (IMF). 2017a. "Ensuring Financial Stability in Countries with Islamic Banking." IMF policy paper, Washington, DC.
- . 2017b. "Fintech and Financial Services: Initial Considerations." IMF staff discussion note, Washington, DC.
- . 2017c. "Recent Trends in Correspondent Banking Relationships: Further Considerations." IMF policy paper, Washington, DC.
- . 2017d. *Regional Economic Outlook: Middle East and Central Asia*. Washington, DC, October.
- . 2017e. "Supporting Growth and Inclusion through Financial Development." IMF Country Report 17/213, Pakistan Selected Issues Paper, Washington, DC.
- . 2018a. "Finance and Fintech: Invigorating Investment and Inclusion in India." Remarks by IMF Deputy Managing Director Tao Zhang, Mumbai, March 12.
- . 2018b. "Financial Inclusion in Asia Pacific." IMF Departmental Paper 18/17, Washington, DC.
- . 2018c. *Regional Economic Outlook: Middle East and Central Asia*. Washington, DC, October.
- . Forthcoming. "SME Financial Inclusion in the MCD Region." IMF Working Paper, Washington, DC.
- International Organization of Securities Commissions (IOSCO). 2014. "Market-Based Long-Term Financing Solutions for SMEs and Infrastructure." Madrid.
- . "SME Financing through Capital Markets: Final Report." Madrid.
- Kumar, R. 2017. "Targeted SME Financing and Employment Effects: What Do We Know and What Can We Do Differently?" *Jobs Working Paper* (3) World Bank, Washington, DC.
- Kuntchev, V., R. Ramalho, J. Rodriguez-Meza, and J. Yang. 2013. "What Have We Learned from the Enterprise Surveys Regarding Access to Credit by SMEs?" Policy Research Working Paper 6670, Enterprise Analysis Unit, Financial and Private Sector Development, World Bank, Washington, DC.
- Love, I., and M. Martinez Peria. 2015. "How Bank Competition Affects Firms' Access to Finance." *World Bank Economic Review* 29 (3): 413–48.
- Love, I., M. Martinez Peria, and S. Singh. 2016. "Collateral Registries for Movable Assets: Does Their Introduction Spur Firms' Access to Bank Financing?" *Journal of Financial Services Research* 49:1–37.

- Lukonga, I. 2018. “Fintech, Inclusive Growth and Cyber Risks: A Focus on the MENAP and CCA Regions.” IMF Working Paper, Washington, DC.
- Lyman, T., and W. Noor. 2014. “AML/CFT and Financial Inclusion: New Opportunities Emerge from Recent FATF Action.” CGAP Focus Note 98, World Bank, Washington, DC.
- Mehrotra, A., and J. Yetman. 2014. “Financial Inclusion and Optimal Monetary Policy.” BIS Working Paper 476, Bank for International Settlements, Basel.
- Melecky, M., and A. Podpiera. 2018. “Financial Sector Strategies and Financial Sector Outcomes. Do the Strategies Perform?” World Bank Policy Research Paper 8315, Washington, DC.
- Mills, K. G., and B. McCarthy. 2017. “The State of Small Business Lending: Innovation and Technology and the Implications for Regulation.” Harvard Business School, Cambridge, MA.
- Organization for Economic Co-operation and Development (OECD). 2015. “Opportunities and Constraints of Market-Based Financing for SMEs.” OECD report to G20 finance ministers and central bank governors. Paris.
- . 2017. “Evaluating Publicly Supported Credit Guarantee Programs for SMEs.” Paris.
- , European Commission, and European Training Foundation. 2018. “SME Index—The Mediterranean Middle East and North Africa 2018—Interim Assessment of Key SME Reforms.” Paris.
- Polish Agency for Enterprise Development (PARP). 2014. “Report on the Condition of Small and Medium-Sized Enterprise Sector in Poland in 2012–2013.” Warsaw.
- Popov, A., and J. Rocholl. 2016. “Do Credit Shocks Affect Labor Demand? Evidence for Employment and Wages during the Financial Crisis.” *Journal of Financial Intermediation* 36 (October): 16–27.
- Reuters. 2018. “Alibaba-Backed Online Lender MYbank Owes Cost-Savings to Home-Made Tech.” Reuters Business News. <https://www.reuters.com/article/us-china-banking-mybank/alibaba-backed-online-lender-mybank-owes-cost-savings-to-home-made-tech-idUSKBN1FL3S6>.
- Rocha, R., S. Farazi, R. Khouri, and D. Pearce. 2010. “The Status of Bank Lending to SMEs in the Middle East and North Africa Region: The Results of a Joint Survey of the Union of Arab Banks and the World Bank.” World Bank and Union of Arab Banks, Washington, DC.

- Rojas-Suárez, L. 2016. “Financial Inclusion in Latin America: Facts, Obstacles and Central Banks’ Policy Issues.” Discussion Paper IDB-DP-464, Inter-American Development Bank, Washington, DC.
- , and M. Amado. 2014. “Understanding Latin America’s Financial Inclusion Gap.” Center for Global Development Working Paper 367, Washington, DC.
- Sahay, R., M. Čihák, P. N’Diaye, A. Barajas, S. Mitra, A. Kyobe, Y. Mooi, and S. Yousefi. 2015. “Financial Inclusion: Can It Meet Multiple Macroeconomic Goals?” IMF Staff Discussion Note 15/17, International Monetary Fund, Washington, DC.
- Toronto Centre. 2017. “FinTech, RegTech and SupTech: What They Mean for Financial Supervision.” *TC Notes* (August).
- UK Government. 2014. “SME Finance: Help to Match SMEs Rejected for Finance with Alternative Lenders.” London.
- World Bank. 2015. “Principles for Public Credit Guarantee Schemes for SMEs.” Task Force for the Design, Implementation and Evaluation of Public Credit Guarantee Schemes for Small and Medium Enterprises, Washington, DC.
- . 2016. “Competition in the GCC SME Lending Markets: An Initial Assessment.” Middle East and North Africa Region GCC Country Unit report, Washington, DC.
- World Bank. 2018a. “Bankers without Borders.” Global Financial Development Report, Washington, DC.
- . 2018b. “The World Bank Group’s Joint Capital Market Program.” Washington, DC.
- , International Monetary Fund (IMF), and Organization for Economic Co-operation and Development (OECD). 2015. “Capital Market Instruments to Mobilize Institutional Investors to Infrastructure and SME Financing in Emerging Market Economies: Report for the G20.” Washington, DC.
- Zarutskie, R. 2006. “Evidence on the Effects of Bank Competition on Firm Borrowing and Investment.” *Journal of Financial Economics* 81:503–37.