Supporting Sustainable Financing and Access to Finance in Armenia

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2023

JAN

WORKING PAPER

IMF Working Paper
Middle East and Central Asia Department

Supporting Sustainable Financing and Access to Finance in Armenia
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Authorized for distribution by Nathan Porter
January 2023

ABSTRACT: In Armenia, both external and domestic financing face challenges. Armenia's share of inward foreign direct investment (FDI) in private external financing has declined significantly over the past decade. Access to domestic finance in Armenia is also moderate and masks important disparities. Against this background, this paper analyses the determinants of inward FDI and examines the impediments to increasing access to domestic finance. The paper confirms empirically that governance-related structural factors have a significant impact on inward FDI. Similar structural factors, informality and poor accounting practices are reported among major challenges for increasing access to finance for firms in Armenia. This paper finds that to improve financing in Armenia include: implementing structural reforms to improve the business environment, maintaining prudent macroeconomic policies, strengthening financial reporting, and improving financial inclusion through reduced informality in the economy.

Supporting Sustainable Financing and Access to Finance in Armenia

Prepared by Maria Atamanchuk and Kiichi Tokuoka[1]

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I. Introduction

Armenia has achieved robust growth during the past 20 years, with real GDP growth averaging 6½ percent during 2000–2019. Historically, external financing, in particular inward foreign direct investment (FDI), has played a key role in supporting this growth, especially before the global financial crisis (GFC), when it reached 6.4 percent of GDP on average during 2003–2007.

The share of inward FDI in private external financing in Armenia, however, has declined significantly over the past decade. The decline in FDI following the GFC was part of a global pattern, driven by the narrowing growth differential between emerging and advanced economies. However, in Armenia, inward FDI continued to decline even after the mid-2010s and by a greater extent than in many emerging and developing economies. In the meantime, Armenia's reliance on other (debt-related) inflows, namely loans and deposits, increased during the 2010s. The decline in inward FDI leaves a larger hole than just the loss of financing for productive capital since FDI expands productive capacity directly and indirectly through knowledge and skill transfers. In addition, its relatively sticky nature contributes to financial and external stability, including through lower pressures on foreign reserves.

Access of the private sector to finance critical for domestic financing in Armenia is moderate by the regional and peer standards, and it masks important disparities. Armenia had made some important progress in financial inclusion over the past few years and now scores better than many other countries in the region. However, it has a substantial gender gap as well as an urban-rural gap in financial inclusion. Businesses, especially small and medium enterprises, face difficulties in accessing finance that undermines their contribution to the economy. Limited transparency, high informality, and low level of financial management are reportedly main factors that limit access to finance for firms.

As both external and domestic financing face challenges in Armenia, this paper provides their overview in recent years, analyses the determinants of inward FDI empirically, looks at impediments for increasing access to finance, and discusses the resulting implications. This analysis suggests three main messages:

First, by running panel regressions the paper empirically confirms that governance-related structural factors have a significant impact on Armenia's attractiveness to inward FDI. The empirical analysis is motivated by previous studies that examined the importance of structural factors in determining inward FDI. They typically used advanced economies' data (e.g., Dellis et al. (2017), Bénassy‐Quéré et al. (2007)) and/or focused on specific institutional factors (e.g., Mistura and Roulet (2019) , Walsh and Yu (2010)). The current paper uses nonadvanced economy data to make the analysis relevant for Armenia, and examines the impact of structural variables that capture governance characteristics in a broad manner. Our analysis suggests that improving the characteristics of Armenia's core governance and business environment to the levels seen at the top 5–25 percent of peer countries in the Caucuses and Central Asia (CCA) and Emerging and Developing Europe (EMDE) could increase inward FDI flows by as much as ¾ percentage points of GDP.

Second, the paper takes stock of financial depth and inclusion in Armenia by reviewing supply- and demand-side constraints. Informality, poor accounting practices, and low level of financial management practices are reported among major challenges for increasing access to finance for firms in Armenia. This could be key to facilitating domestic savings and intermediating these towards investment in Armenia. Lack of sufficient funds, gender gap, financial literacy, and stubborn differences between urban and rural areas are among key bottlenecks for improving household financial inclusion.

Third, the paper outlines possible measures to improve the combination of external and domestic financing, by reinvigorating inward FDI, and expanding and facilitating domestic finance. Such measures could support Armenia's recovery, and accelerate private sector and export sector development through technology transfers. Expanding and facilitating domestic financing helps limit the financial stability risk that arise from greater reliance on non-FDI private flows such as nonresident deposits. Possible measures to boost inward FDI include implementing structural reforms to improve the business environment and maintaining prudent macroeconomic policies. Strengthening financial reporting and reducing informality in the economy could expand and facilitate domestic finance. The paper also argues that development of a high-value-added export sector could achieve higher domestic saving (Karapetyan et al., 2021), helping expand access to domestic finance.

This paper is structured as follows. Section II offers an overview of external and domestic financing in Armenia and Section III conducts empirical analyses on the determinants of inward FDI, and the role of FDI in achieving sustainable growth. Section IV draws policy implications followed by conclusions.

II. Context: External and Domestic Financing in Armenia

This section provides an overview of external and domestic financing in Armenia and discusses the implications of how the nature of Armenia's external financing has changed in recent years.

Saving-Investment Balance and the Composition of Saving

While Armenia's gross investment rate has declined steadily as the economy has developed over the past 15 years, gross saving has been relatively stable since the GFC (Figure 1, top left). Prior to the COVID-19 pandemic, the saving-investment balance worsened, reflecting a rise in investment and decline in saving ratios to GDP. There has been a shift in the composition of gross saving over the past 10 years, with foreign saving (net income and transfers) declining steadily. Relative to peer countries, Armenia's gross saving rate has been lower than those of countries in the CCA and EMDE since around 2010 (Figure 1, top right), while Armenia's gross investment rate has also been lower than that of peer countries in recent years (Figure 1, middle charts), and its decline has been driven by falling private investment (Figure 1, bottom left).

Other things equal, the declining gross saving rate limits Armenia's potential domestic financing available for investment (and other needs). This places a greater emphasis on the need for external

financing of the saving-investment gap (mirrored in the current account deficit), relative to countries in the CCA and EMDE given their smaller saving-investment gaps (Figure 1, bottom right; Table 1).

Figure 1. Armenia: Investment, Saving, and Current Account Balance

Armenia: Gross Investment and Saving
(in percent of GDP)

Domestic saving (GDP minus consumption)
Foreign saving (net income and transfers)
Saving investment balance (CA balance)
Gross saving (domestic + foreign)
Gross invesment

Source: World Bank WDI; National authorities; Haver

Gross Saving
(in percent of GDP)

Gross saving: CCA EM 1/
Gross saving: EMDE 2/
Gross saving: Armenia

Source: World Bank WDI; National authorities
1/ CCA EM are Azerbaijan, Georgia, Kazakhstan, and Turkmenistan (Turkmenistan's data across years and Kazakhstan's 2020 data are not available).
2/ Average of EMDE (Emerging and Developing Europe)

Gross Investment
(in percent of GDP)

Gross investment: CCA EM 1/
Gross investment: EMDE 2/
Gross investment: Armenia

Source: World Bank WDI; National authorities
1/ CCA EM are Azerbaijan, Georgia, Kazakhstan, and Turkmenistan (Turkmenistan's data in 2013 and on, and Kazakhstan's 2020 data are not available).
2/ Average of EMDE (Emerging and Developing Europe)

Gross Investment
(in percent of GDP)

Range betweeen top and bottom 25% of CCA EM+EMDE 1/
Armenia

Source: World Bank WDI; National authorities
1/ CCA EM are CCA EM are Azerbaijan, Georgia, Kazakhstan, and Turkmenistan.
   EMDE referes to Emerging and Developing Europe., whose definition follows IMF WEO.

Armenia: Composition of Gross Investment (in percent of GDP)

Gross public investment
Gross private investment
Gross invesment

Source: National authorities

External Financing 1/
(in pecent of GDP)

Armenia
CCA EM average exc. Armenia 2/
EMDE average 3/
EMDA average 4/

Source: World Bank WDI
1/ Meaured by current account deficits. Excluded countries that have recorded external financing over 30 percent of GDP or below -30 percent GDP since 2000.
2/ CCA EM are CCA EM are Azerbaijan, Georgia, and Kazakhstan (Turkmenistan's data not available).
3/ Emerging and Developing Europe
4/ Emerging and Developing Asia

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Table 1. Armenia and Countries with Similar Income Levels: External Financing

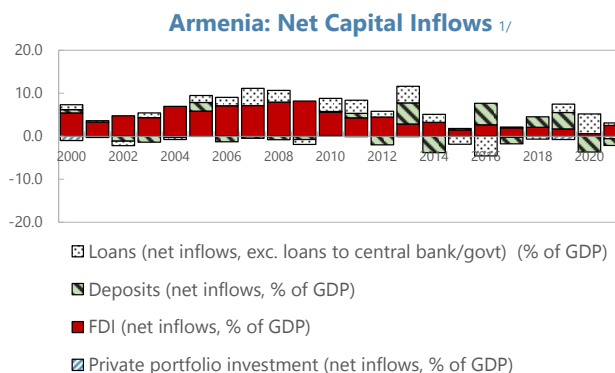|	External Financing 1/ (in percent of GDP)		FDI Inflows (net, in percent of GDP)	
	2020	2018–2020 average	2020	2018–2020 average
Armenia (GNI per capita: US$4,220 (in 2020))	-3.8	-6.1	0.4	1.1
Countries with GNI per capita between US$4,000–6,000 (in 2020)				
Average	-3.3	-2.4	2.2	2.6
Median	-3.5	-1.6	1.3	2.1

Source: World Bank WDI

1/ Meaured by current account deficits, excluding Tuvalu (given the high volatility).

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Changing Nature of Private External Financing in Armenia

In Armenia, there has been a move to debt-based external financing over the past decade.

- Net FDI[1] accounted for the majority of net private capital inflows before the GFC, which supported overall net private inflows during the GFC. However, following the GFC, net FDI started to decline relative to GDP. This reflected a broader global pattern, driven by the narrowing growth differential between emerging and advanced economies (IMF, 2016), although for Armenia net FDI has declined to only about one-third of pre-GFC levels relative to GDP).

Armenia: Net Capital Inflows 1/

⊠ Loans (net inflows, exc. loans to central bank/govt) (% of GDP)

◪ Deposits (net inflows, % of GDP)

■ FDI (net inflows, % of GDP)

▨ Private portfolio investment (net inflows, % of GDP)

Source: National authorities, IMF WEO

1/ Net capital inflows are calculated by net inflows by non-residents minus net outflows by residents.
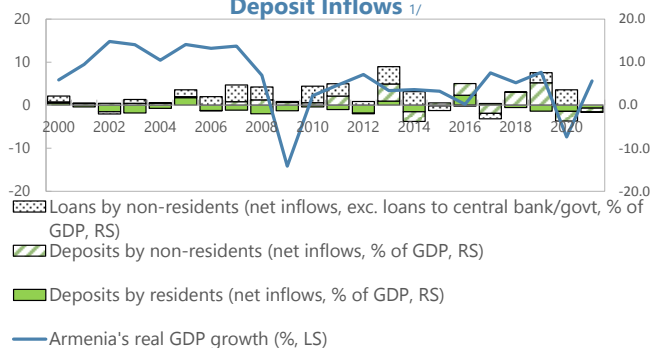
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[1] Measured by net inward FDI by nonresidents minus net outward FDI by residents.

- At the same time, other inflows, namely loans and deposits, have become more important since the GFC. Relative to FDI, other flows are more procyclical and volatile than FDI with the net inflow of deposits by residents and nonresidents positively correlated with global growth (Table 2). Among other inflows, nonresident deposits have become particularly influential since the early 2010s. This may have been driven by a combination of (i) the widening of the interest rate differential with advanced economies since the GCF; and (ii) nonresidents' increased confidence in the health of Armenia's banking sector.

As a result of the diminished role of inward FDI, reliance on external non-FDI liabilities has increased. Over the past 10 years, non-FDI liabilities have risen faster than FDI liabilities (Figure 2, left), with the share of the former in total external liabilities increasing by 10 percentage poi nts to 60 percent between 2010 and 2020. The increase in the share of less stable non-FDI liabilities is concerning given Armenia's relatively large external net liabilities (Figure 2, right). The lower inward FDI also seems consistent with the decline in Armenia's domestically-financed private investment, as gross private capital formation minus FDI flows (net) has also been on a trend decline.

Armenia: Real Growth and Net Loan and Deposit Inflows 1/

- Loans by non-residents (net inflows, exc. loans to central bank/govt, % of GDP, RS)
- Deposits by non-residents (net inflows, % of GDP, RS)
- Deposits by residents (net inflows, % of GDP, RS)
- Armenia's real GDP growth (%, LS)

Source: National authorities, IMF WEO
1/ Net inflows are calculated by gross inflows minus gross outflows.

Interest Rate Differential between Armenia and US (percentage points)

- Interest rate differential   — Armenia policy rate (eop)
- - - - US policy rate (eop)
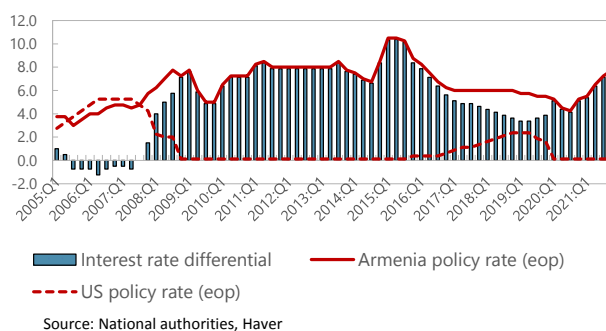
Source: National authorities, Haver

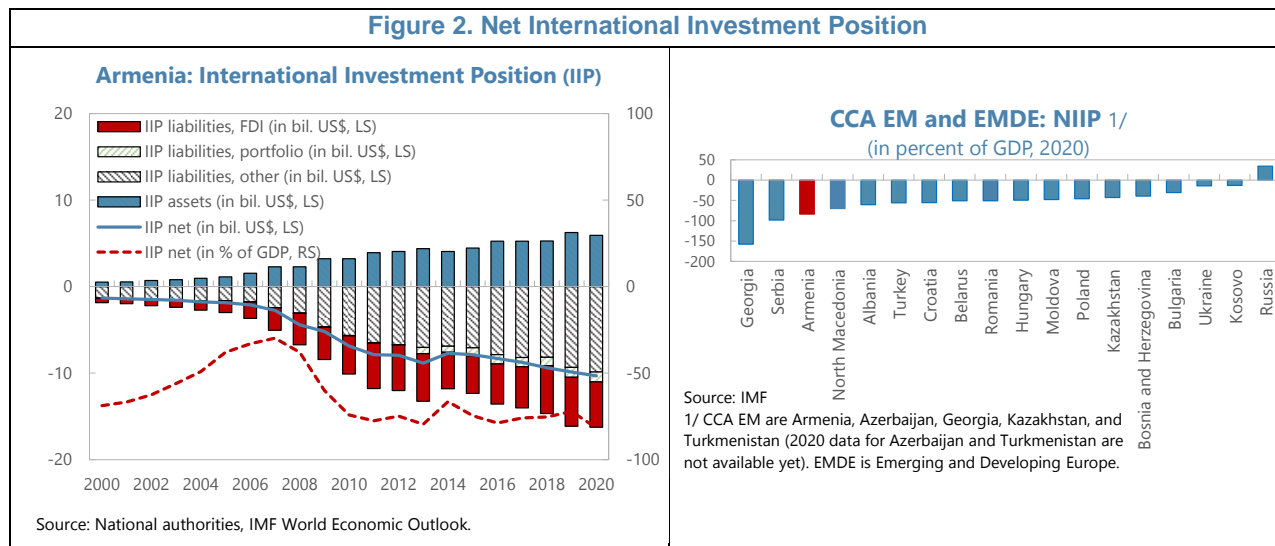| Table 2. Armenia: Correlation of Armenia's Net Capital Inflows with Real GDP Growth 1/				
	Armenia's real GDP growth (%)		Global real GDP growth (%)	
	2000-	2008-	2000-	2008-
FDI + private portfolio + deposits + loans (exc. loans to central bank/govt)	0.17	0.03	0.15	-0.01
Deposits + loans (exc. loans to central bank/govt)	0.09	0.24	0.13	0.11
FDI	0.17	-0.26	0.10	-0.14
Private portfolio investment	-0.03	-0.31	-0.24	-0.27
Deposits	0.02	0.17	0.23	0.27
Deposits by residents	-0.03	0.02	0.26	0.28
Deposits by non-residents	0.05	0.21	0.13	0.18
Loans by non-residents (exc. loans to central bank/govt)	-0.07	-0.04	-0.11	-0.20

Source: National authorities, IMF WEO

1/ Annual data (2000–2021) are used. Net capital inflows (i.e., net inflows by nonresidents minus net outflows by residents) measured in percent of GDP.

The shift away from FDI may also raise financial vulnerabilities through the exchange rate. In Armenia, the exchange rate has been correlated with overall net capital inflows, but not so much with FDI, particularly in more recent years (Table 3). While it is not clear why the correlation between FDI and the exchange rate has been lower in recent years, factors other than the exchange rate (e.g., growth potential) may have become more important for FDI. The exchange rate is highly correlated with the net inflow of deposits by nonresidents or loans to the private sector (Table 3).

Figure 2. Net International Investment Position

Armenia: International Investment Position (IIP)

Legend:
- IIP liabilities, FDI (in bil. US$, LS)
- IIP liabilities, portfolio (in bil. US$, LS)
- IIP liabilities, other (in bil. US$, LS)
- IIP assets (in bil. US$, LS)
- IIP net (in bil. US$, LS)
- IIP net (in % of GDP, RS)

Source: National authorities, IMF World Economic Outlook.

CCA EM and EMDE: NIIP 1/
(in percent of GDP, 2020)

Source: IMF
1/ CCA EM are Armenia, Azerbaijan, Georgia, Kazakhstan, and Turkmenistan (2020 data for Azerbaijan and Turkmenistan are not available yet). EMDE is Emerging and Developing Europe.

Table 3. Armenia: Correlation of Armenia's Net Capital Inflows with Exchange Rates 1/

	Change in REER (change of period average, %)		Appreciation against US$ (change of period average, %)	
	2000-	2008-	2000-	2008-
FDI + private portfolio + deposits + loans (exc. loans to central bank/govt)	0.38	0.03	0.56	0.33
Deposits + loans (exc. loans to central bank/govt)	0.36	0.18	0.37	0.39
FDI	0.15	-0.21	0.41	0.01
Private portfolio investment	0.06	0.07	0.09	-0.01
Deposits	0.12	0.05	0.07	0.12
Deposits by residents	0.10	-0.17	0.08	-0.06
Deposits by non-residents	0.09	0.15	0.05	0.18
Loans by non-residents (exc. loans to central bank/govt)	0.45	0.33	0.40	0.41

Source: National authorities, IMF WEO

1/ Annual data (2000–2021) are used. Net capital inflows (i.e., net inflows by nonresidents minus net outflows by residents) are measures in percent of GDP.

How does the nature of Armenia's private external financing differ from that of its peers? Inward FDI flows from advanced economies to nonadvanced economies expanded during the 1990s (Albuquerque et al., 2005) and the 2000s through the GFC but, following the crisis, such flows suddenly slowed down reflecting narrowing growth differential (IMF, 2016). The decline in Armenia's inward FDI, however, has been more sustained than in other emerging and developing economies (EMDE). For example, in recent years its FDI

decline has been faster than those in EMDE and Emerging and Developing Asia (EMDA) (Figure 3 and Table 4). More specifically, Table 4 indicates that while Armenia's net inward FDI flows fell by 2 percentage points to 1¾ percent of GDP over 2016–2020 from 4 percent of GDP over 2011–2015, the decline over the same period was on average at most 1 percentage point of GDP in peer countries (e.g., CCA EM). Armenia's FDI decline between these two periods is the third largest among CCA and EMDE countries (Figure 3, right). Turkmenistan and Montenegro's declines are larger than Armenia's but from higher levels.

Figure 3. Armenia: Inward FDI Flows

Inward FDI Flows (net) 1/
(in percent of GDP)
Source: World Bank WDI
1/ Net inward FDI flows by non-residents
2/ CCA EM are Azerbaijan, Georgia, Kazakhstan, and Turkmenistan.
3/ EMDE is Emerging and Developing Europe. Hungary is excluded given the high volatility of inward FDI.
4/ EMDA is Emerging and Developing Asia.

CCA EM and EMDE: Inward FDI Flows (net) 1/
(in percent of GDP)
Source: World Bank WDI
1/ Net inward FDI flows by non-residents. CCA EM are Armenia, Azerbaijan, Georgia, Kazakhstan, and Turkmenistan. EMDE is Emerging and Developing Europe excluding Hungary (given its high volatility of inward FDI).

Table 4. Armenia: Inward FDI Flows, 2003–20
(Net, in percent of GDP)

	2003–07	2011–15	2016–20
Armenia	6.4	3.9	1.7
CCA EM average exc. Armenia 1/	15.6	7.2	6.3
EMDE average (exc. Hungary) 2/	6.1	4.0	3.7
EMDA average 3/	3.1	4.2	3.3
World	3.4	2.9	2.1

Source: World Bank WDI

1/ Average of CCA (Caucasus and Central Asia) emerging economies (Azerbaijan, Georgia, Kazakhstan, Turkmenistan).

2/ EMDE is Emerging and Developing Europe. Hungary is excluded given the high volatility of inward FDI.

3/ EMDA is Emerging and Developing Asia.

Access to Domestic Financing

Improving financial literacy and access of households and firms to domestic financing should raise savings and also improve the intermediation of the savings. Together, these efforts will help facilitate greater domestic investment.
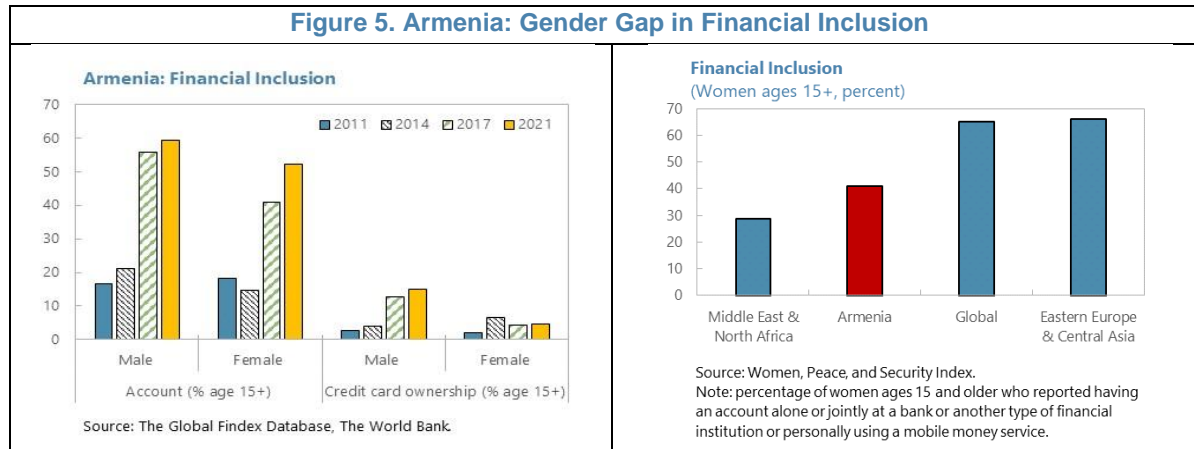
A. Financial Inclusion of Households

Access to finance for households in Armenia is improving and it scores well compared to the CCA average but lags many emerging market peers. The financial system in Armenia is dominated by banks, with their total assets of about 110 percent of GDP. Armenia scores well on account ownership at a financial institution (48 percent of population ages 15+) compared to the CCA average but remains behind many emerging market peers. The number of automated teller machines (ATMs) and commercial bank branches per capita has significantly increased in Armenia over the past few years, reaching an average for Central Europe and the Baltics. Total deposits with commercial banks have also almost doubled to 40 percent of GDP over the last ten years (exceeding the CCA average) suggesting rising depth, although they remain lower than in MENA, EM Europe, and EMDE.


Figure 4. Armenia: Financial Inclusion
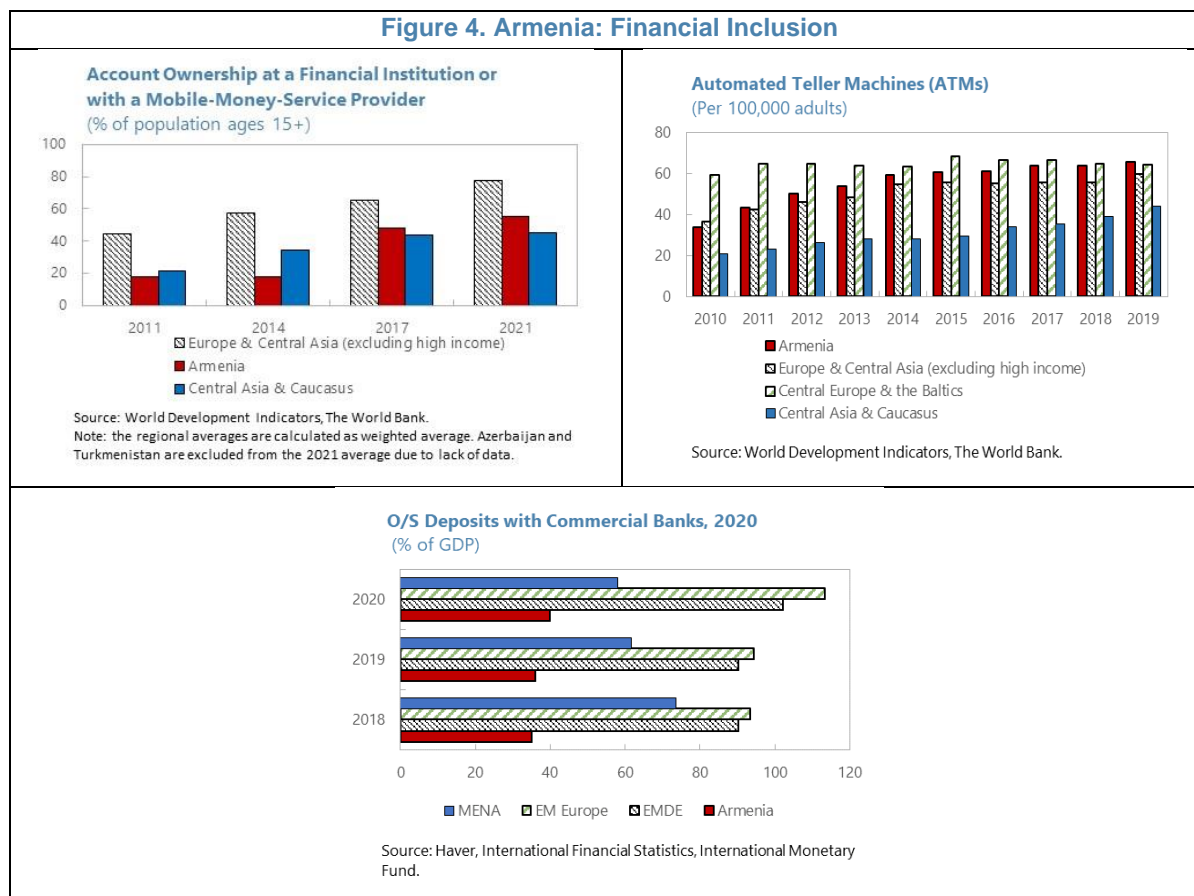
Like countries in Central Asia, Armenia has a gender gap in financial inclusion. In particular, in 2017 only about 40 percent of women had a bank account compared with about 60 percent of men, even though this indicator has improved substantially since 2014. This improvement in account ownership, although insufficient to bridge the gap with the averages for the world (65 percent) and Eastern Europe and Central Asia (66 percent), could reflect the authorities' initiatives to promote financial education programs. The 2014 National Strategy of Financial Education had separate targets for women and included development, implementation, testing, and monitoring of financial education programs (AFI, 2017).

Figure 5. Armenia: Gender Gap in Financial Inclusion

Armenia: Financial Inclusion

Source: The Global Findex Database, The World Bank.

Financial Inclusion
(Women ages 15+, percent)

Source: Women, Peace, and Security Index.
Note: percentage of women ages 15 and older who reported having an account alone or jointly at a bank or another type of financial institution or personally using a mobile money service.

Financial literacy in Armenia has room for improvement. According to the OECD survey of financial literacy, the average literacy score in Armenia is 11.4 (out of a maximum of 21): only 27 percent of adults achieved the minimum target score of at least 4 out of 7 on financial knowledge in Armenia compared with around 60 percent in South East Europe and close to 70 percent in OECD countries (OECD, 2018). The relatively low overall score on financial literacy masks a sizable heterogeneity across urban and rural population, as well as among social, economic, and

Achieving Minimum Target Score for Financial Knowledge
(% of respondents)
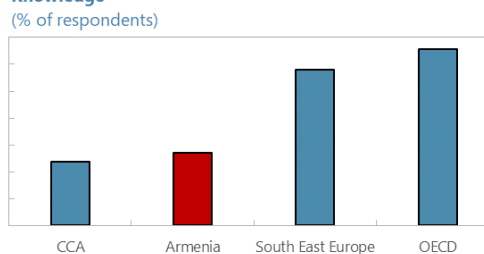
Source: OECD, Levels of Financial Literacy in Eurasia, OECD, 2018; Financial Literacy of Adults in South East Europe, OECD, 2020; OECD/INFE 2020 International Survey of Adult Financial Literacy.

demographic background. This suggests the importance of targeted efforts to improve literacy. This lack of literacy is associated with negative attitudes towards saving, which is a major deterrent since people are less likely to save and instead prioritize short-term needs (Nurbekyan and Hovanessian, 2018).

Stubborn differences between urban and rural areas in financial inclusion continue to limit increases in access to finance in Armenia. Rural areas face specific barriers to financial inclusion, including limited physical infrastructure, large informality, lower "financial literacy, lower income, and a lack of trust in the financial system" (Nurbekyan and Hovanessian, 2018). Rural areas have relatively fewer bank branches and ATMs compared to urban areas due to lower economic activity and the higher costs of providing financing in low, densely populated, areas (Nurbekyan and Hovanessian, 2018).
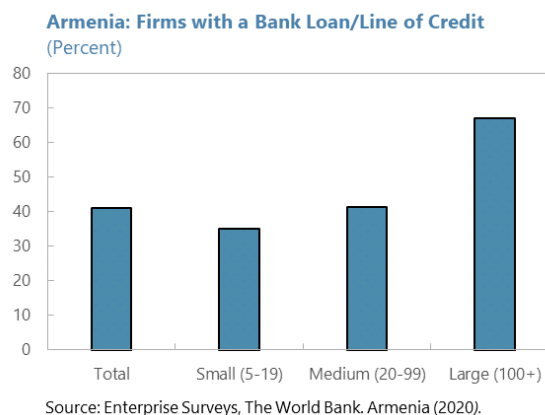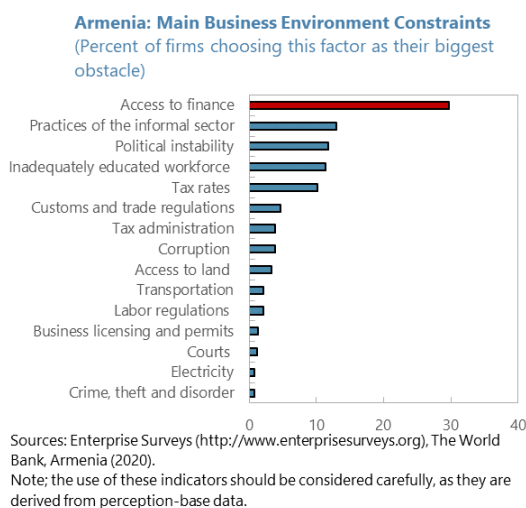

ATM Density for Rural and Urban Areas
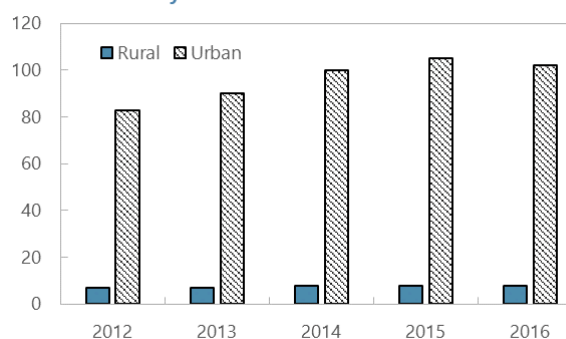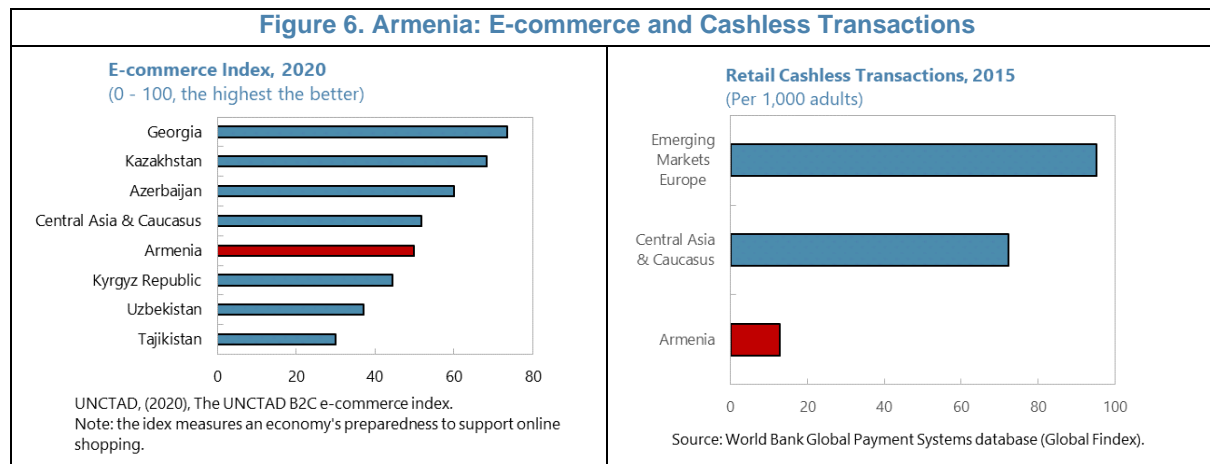
Source: ADBI, 2018

B. Financial Inclusion in Firms

Access to finance is the main challenge for doing business in Armenia. According to the 2020 World Bank Enterprise Survey, access to finance was identified by Armenian business executives as the main obstacle for doing business (30 percent of respondents). The practices of the informal sector were identified as the second main obstacle (15 percent of respondents). Informal firms may have an unfair advantage over the formal firms given that they can compromise on rules, taxes and regulations, which slow down financial inclusion
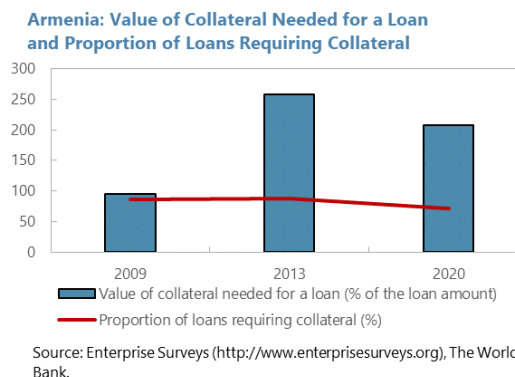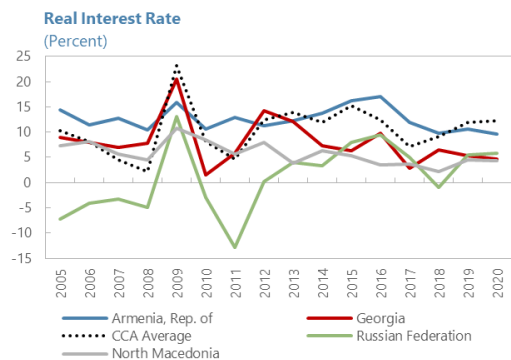

Armenia: Main Business Environment Constraints
(Percent of firms choosing this factor as their biggest obstacle)

Sources: Enterprise Surveys (http://www.enterprisesurveys.org), The World Bank, Armenia (2020).
Note; the use of these indicators should be considered carefully, as they are derived from perception-base data.

Armenia: Firms with a Bank Loan/Line of Credit
(Percent)

Source: Enterprise Surveys, The World Bank. Armenia (2020).

Access to finance is particularly low for small and medium enterprises that often have to rely on internal resources and retained earnings. According to the 2020 Business Environment and Enterprise Performance Survey, about 42 percent of all firms and only about 35 percent of small firms in Armenia had a bank loan or a line of credit (although a much higher share of firms has a checking/savings account). Instead of getting financing through banks, the main source for SMEs is the owner's own funds and internal company resources. Getting start-up financing is also difficult, and often met through informal sources. Excessive reliance on internal funds is a sign of potential inefficiencies in market intermediation.   Major barriers for SMEs' access to affordable finance include lack of transparency and high informality. Both need to be addressed to improve banks' ability to overcome information asymmetries (IMF, 2018).

Payments in Armenia are mainly made in cash. Data suggest that Armenia scores substantially lower than the CCA average and some other peers on cashless transactions. E-commerce is underdeveloped, with less than 20 percent of the total value of payments been cashless. Informality, poor accounting practices and low level of financial management are reported among major challenges for increasing access to finance (IMF, 2018).

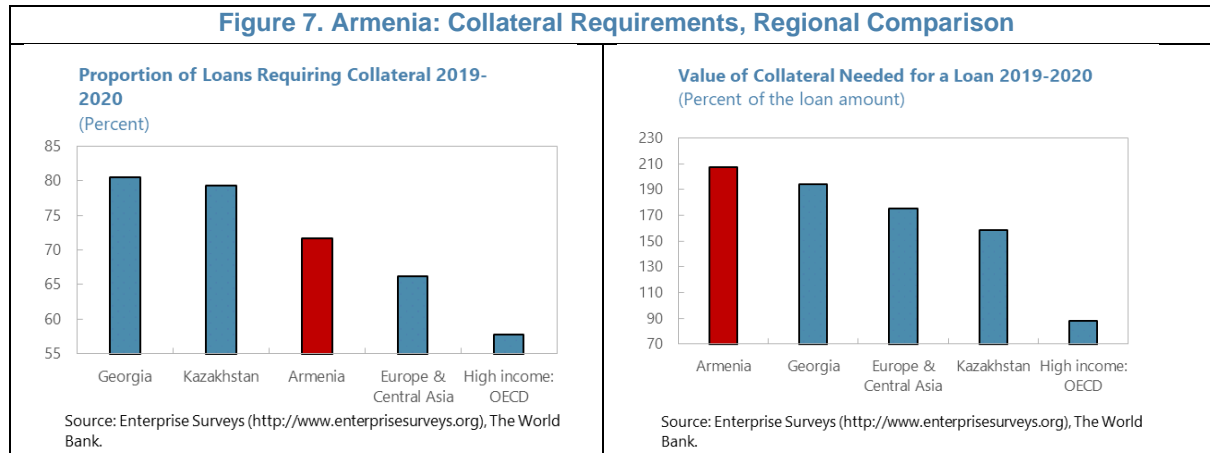**Figure 6. Armenia: E-commerce and Cashless Transactions**

E-commerce Index, 2020
(0 - 100, the highest the better)

UNCTAD, (2020), The UNCTAD B2C e-commerce index.
Note: the idex measures an economy's preparedness to support online shopping.

Retail Cashless Transactions, 2015
(Per 1,000 adults)

Source: World Bank Global Payment Systems database (Global Findex).

Corporate transparency is low in Armenia. Informality and poor financial reporting generate information asymmetries that make it harder for banks to do due diligence and extend financing (IMF, 2018). Also poor transparency among "corporations, sub-national entities and SOEs hampers not only possible issuances on the capital markets but also inhibits growth of products such as factoring and invoice financing that facilitate trade finance and are key for MSME access to finance" (IMF, 2018). Consequently, banks are charging a high premium on loans.

Partly reflecting these constraints, collateral requirements are particularly high in Armenia. The prevalence of cash-based transactions and the lack of transparency due to high informality and poor financial reporting makes it harder for banks to validate potential borrowers' cash flow sources. This, together with a limited efficiency of collateral execution, translates into extensive collateral requirements and larger risk premiums, which, in turn, serves as an impediment to increasing access to finance for the private sector, particularly SMEs. Collateral requirements are particularly high for SMEs (IMF, 2018). Value of collateral needed for a loan in Armenia is second highest in the CCA, and much higher than the EMDEs average (120 percent[2]), even though it has decreased since 2013.

Real Interest Rate
(Percent)

Source: World Development Indicators, The World Bank; International Monetary Fund, International Financial Statistics (IFS).
Note: The real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator.

Armenia: Value of Collateral Needed for a Loan and Proportion of Loans Requiring Collateral

Source: Enterprise Surveys (http://www.enterprisesurveys.org), The World Bank.

[2] Enterprise Surveys (http://www.enterprisesurveys.org), The World Bank.

Figure 7. Armenia: Collateral Requirements, Regional Comparison

Proportion of Loans Requiring Collateral 2019-2020
(Percent)

Source: Enterprise Surveys (http://www.enterprisesurveys.org), The World Bank.

Value of Collateral Needed for a Loan 2019-2020
(Percent of the loan amount)

Source: Enterprise Surveys (http://www.enterprisesurveys.org), The World Bank.

The insolvency regime of private debtors needs to be strengthened to better protect creditors rights. Due to existing weaknesses in the insolvency law and inefficient debt enforcement procedures, the rights of secured creditors are not sufficiently protected. Although the bankruptcy law for firms and households was amended in 2016, "further improvements are necessary to ensure that the main function of insolvency proceedings is to maximize return to creditors through reorganization of the debtor, or as a collective debt collection mechanism" (IMF, 2018). Further reforms should be aimed at increasing the success ratio for rehabilitation cases and creditors recovery as well as "toward resorting to insolvency only as a collective proceeding, among multiple creditors, rather than a collection tool by individual creditors against delinquent debtors, as is currently the case" (IMF, 2018). Such changes would be expected to lower both collateral requirements as well as the cost of finance.

III. Determinants of Inward FDI and Implications of Declining Inward FDI

A. Empirical Analysis

As discussed in the previous section, the decline in Armenia's inward FDI has been greater and more sustained than that in other countries. To gain an insight as to what could be done to stimulate Armenia's inward FDI, this section analyzes the determinants of inward FDI by conducting standard panel regressions on/with macroeconomic and structural variables. Estimated panel coefficients indicate that improving Armenia's core governance and business environment characteristics to the levels of strong peers could increase inward FDI flows by as much as ¾ percentage points of GDP.

To analyze the impact of macroeconomic and governance-related structural factors on inward FDI flows, we use the following fixed effects (FE) panel model, using nonadvanced economy data over 1996–2020:

$$Flows\ of\ inward\ FDI_{i,t} = \beta_1 macroeconomic\ variables_{i,t-1} + \beta_2 Z_{i,t} + \varepsilon_{i,t},$$

where the dependent variable is total flows of inward FDI to country i (net FDI by nonresidents in percent of GDP), $macroeconomic\ variables$ are real GDP growth, log GNI per capita, inflation, general government fiscal balance and current account balance (all one-year lags), and $Z_{i,t}$ is a vector of year dummies (summary statistic of the key variables reported in the appendix). A Housman test rejects consistency of coefficients estimated under the random effects (RE) model at the 1 percent level, favoring the FE model over the RE model (details not reported here). The FE regression results in the first column of Table 5 indicate that real GDP growth has a significant impact on inward FDI flows. By contrast, income levels (measured by GNI per capita) are estimated to have a negative impact on inward FDI but the estimate is not significant. Inflation has a positive significant impact on inward FDI but the size of its coefficient is close to zero. Once the standard deviation of EMBI spreads over the year is included to control for financial volatility, its coefficient is negative as expected but not statistically significant (second column of Table 5). Given the smaller sample size of this specification[3] and the insignificant coefficient on the standard deviation of EMBI spreads, the analysis below excludes this variable from the regressions.

Once we add to the regressions the structural variables, namely control of corruption, government effectiveness, regulatory quality, rule of law, and voice and accountability,[4] the results suggest that improving the business environment may stimulate inward FDI. As noted earlier, inclusion of these structural variables is motivated by existing studies which highlighted the importance of structural factors in determining inward FDI. Unlike some studies that focused on specific institutional factors (e.g., judicial independence and labor market flexibility in Walsh and Yu (2010) and statutory restrictions Mistura and Roulet (2019)), the current analysis intends to capture a wider range of factors other than macroeconomic variables by introducing broad structural variables in the regressions. As expected, each of the five structural variables has a positive coefficient, and among them, the coefficients on rule of law, and voice and accountability are statistically significant (third to seventh columns of Table 5). When running a horse race panel regression with all five structural variables, the rule of law remains significant (last column of Table 5). Even if we limit the sample to that after the global financial crisis (2008–2020) as a robustness check, the statistical significance of the rule of law does not change (not reported here).

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[3] Availability of EMBI spreads is limited for many countries.

[4] The regression results should be interpreted carefully as these structural variables from the Worldwide Governance Indicators (WGI) are derived from perceptions-based data.

Table 5. Armenia: Fixed Effects Panel Regressions of Inward FDI Flows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FE	FE	FE	FE	FE	FE	FE	FE
	Inward FDI Flows (net, % of GDP)	Inward FDI Flows (net, % of GDP)	Inward FDI Flows (net, % of GDP)	Inward FDI Flows (net, % of GDP)	Inward FDI Flows (net, % of GDP)	Inward FDI Flows (net, % of GDP)	Inward FDI Flows (net, % of GDP)	Inward FDI Flows (net, % of GDP)
Real GDP growth (%)	0.05**	0.09**	0.05**	0.05**	0.05**	0.05**	0.04**	0.05**
	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Log GNI per capital (US$)	-0.87	0.69	-0.76	-0.74	-0.91	-1.17*	-0.84	-1.12*
	(0.68)	(0.62)	(0.63)	(0.63)	(0.64)	(0.65)	(0.61)	(0.65)
Inflation (%, period average)	0.00***	0.01	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
General govt fiscal balance (% of GDP)	0.03	-0.00	0.03	0.03	0.03	0.03	0.03	0.03
	(0.03)	(0.06)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Current account balance (% of GDP)	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
	(0.03)	(0.05)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Std of EMBI spreads over the year (bps)		-0.00						
		(0.00)						
Index of control of corruption			0.54					-0.16
			(0.58)					(0.66)
Index of government effectiveness				0.17				-0.75
				(0.53)				(0.61)
Index of regulatory quality					0.66			0.21
					(0.55)			(0.60)
Index of rule of law						1.54***		1.73***
						(0.58)		(0.64)
Index of voice and accountability							0.98**	0.52
							(0.47)	(0.51)
Constant	9.63*	-4.37	8.97*	8.65*	10.19*	12.74**	9.70*	12.25**
	(5.49)	(5.54)	(5.12)	(5.18)	(5.21)	(5.31)	(5.01)	(5.38)
Observations	3,234	887	2,823	2,820	2,821	2,830	2,830	2,820
R-squared	0.08	0.13	0.08	0.08	0.08	0.08	0.08	0.09
Number of country ID	153	65	153	153	153	153	153	153

Source: IMF WEO; World Bank WDI; Worldwide Governance Indicators (WGI): D. Kaufmann (Natural Resource Governance Institute and Brookings Institution) and A. Kraay (World Bank)

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Notes: The data on non-advanced economies over 1996-2020 are used. Observations with Net inward FDI greater than 30 percent of GDP or lower than -30 percent of GDP are dropped. One-year lags of macroeconomic and structrual variables are used to avoid the results from being affected by endogeneity. The five structural variables (control of corruption, government effectiveness, regulatory quality, rule of law, voice and accountability) are from the Worldwide Governance Indicators (WGI). Control variables not reported in the table are year dummies. The results should be interpreted carefully, as the indicators from the WGI are derived from perceptions-based data.

Armenia's inward FDI appears low. Why is this, and what can be done? Inward FDI flows to Armenia are lower than those to peer countries. Over 2017–2020, Armenia's inward FDI, at 1.1 percent of GDP, was on average lower than the peer levels by 1–3 percentage points of GDP (Table 6). For example, the average of countries with similar GNI per capita is 2.8 percent of GDP, which is 1.7 percentage points higher than that of Armenia. The median values of peer groups are lower than the averages, but still above Armenia's level.

Table 6. Armenia: Inward FDI Flows, 2017–19 1/
(Net, in percent of GDP)

		Difference with Armenia
Armenia (GNI per capita at US$4,420 in 2020)	1.1	
Countries with GNI per capita between US$4,000–6,000 (in 2020)		
Average (exc. Armenia)	2.8	1.7
Median (exc. Armenia)	2.6	1.5
CCA (exc. Armenia) EM 2/		
Average	3.9	2.8
Median	3.6	2.5
Emerging and Developing Europe (EMDE) average (exc. Hungary) 3/		
Average	3.6	2.5
Median	2.9	1.8
Emerging and Developing Asia (EMDA)		
Average	3.6	2.5
Median	2.0	0.9

Source: World Bank WDI
1/ Net inward FDI flows by non-residents.
2/ Azerbaijan, Georgia, Kazakhstan, and Turkmenistan.
3/ Hungary is excluded given the high volatility of inward FDI.
Notes: Definitions of EMDE and EMDA follow IMF World Economic Outlook

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Predicted values using the OLS panel regression coefficients also imply underperformance of inward FDI flows to Armenia since the early 2010s.[5] While the predicted values of inward FDI have been flat over the past decade, actual levels have been on a trend decline. As a result, in 2020 the actual level of Armenia's inward FDI flows is 3½ percentage points lower than the predicted level (detailed regression results not reported here).

Armenia: Inward FDI Flows
Actual vs Predicted (in percent of GDP)
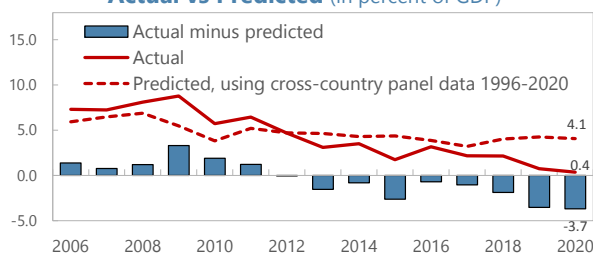
Source: IMF WEO; World Bank WDI; Worldwide Governance Indicators (WGI): D. Kaufmann (Natural Resource Governance Institute and Brookings Institution) and A. Kraay (World Bank)
Notes: The predicted values should be interpreted carefully, as the Worldwide Governance Indicators (WGI) used to estimate the values are derived from perceptions-based data.

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[5] For the regression, the same variables and dataset are used as in Table 5.

Why have inward FDI flows to Armenia been so low in recent years? The sectoral decomposition of FDI indicates that inflows have declined along with the fading of FDI in utility and telecommunication sectors that took place as these sectors were opening up during the post-Soviet transition. Of course, as Armenia's economic transition has advanced, recovering high FDI levels seen before the early 2010s may no longer be realistic. However, the experience in these sectors suggests that stimulating inward FDI requires the development of new investment opportunities that attract inward FDI (e.g., in the manufacturing sector).

The empirical analysis suggests that improving the business environment could also contribute to reversing the decline of inward FDI flows to Armenia. In recent years, Armenia has made greater progress in improving its governance indicators than its CCA peers. The estimated coefficients in the last column of Table 5 imply that improving Armenia's core governance and business environment characteristics[6] further—to the levels seen in the top 5–25 percent among peer (CCA and EMDE) countries—and maintaining them at the higher level could lastingly increase inward FDI flows by up to ¾ percentage points of GDP, which could fill some of the gaps with the peer levels (1–3 percentage points of GDP as reported in Table 6).[7]

B. Implications of Declining Inward FDI

The decline in inward FDI means a loss of many benefits that come with this type of investment. Theoretically, FDI has a positive impact on recipient countries through two channels. First, it has a positive effect on the production function. Inward FDI has beneficial spillovers to total factor productivity (A)

Armenia: Net Inward FDI Flows /1
(in percent of GDP)
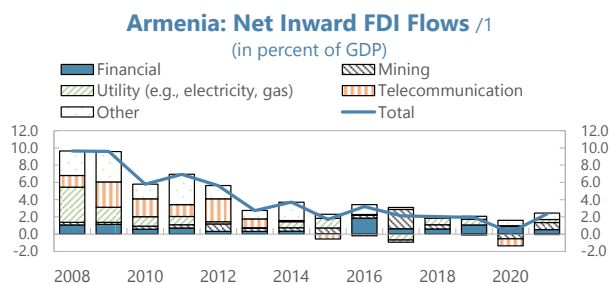
Source: National authorities
1/ Net inward FDI flows by non-residents. For 2008-2013, gross inward FDI flows by non-residents.

Changes in Worldwide Governance Indicators between 2016 and 20201/
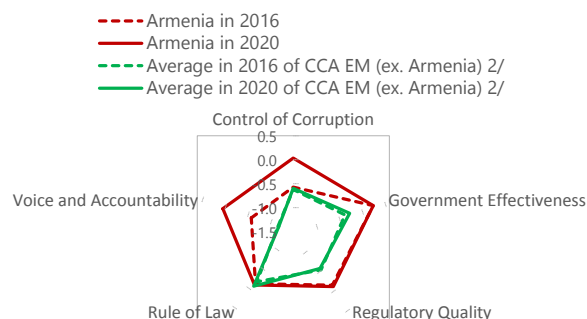
Source: Worldwide Governance Indicators (WGI): D. Kaufmann (Natural Resource Governance Institute and Brookings Institution) and A. Kraay (World Bank). The indicators are produced following the methodology in Kaufmann, Kraay and Mastruzzi (2010).
1/ These indicators should be interpreted carefully, as they are derived from perceptions-based data.
2/ Caucasus and Central Asia emerging economise: Azerbaijan, Georgia, Kazakhstan, and Turkmenistan.

Estimated Impact on Armenia's Inward FDI of Improvement in Structural Variables
(percentage points of GDP) 1/
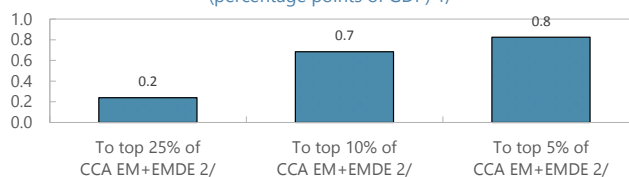
Source: IMF WEO; World Bank WDI; Worldwide Governance Indicators (WGI): D. Kaufmann (Natural Resource Governance Institute and Brookings Institution) and A. Kraay (World Bank)
1/ Improvement of each of five structural variables (control of corruption, government effectiveness, regulatory quality, rule of law, voice and accountability) are assumed. The results shouold be interpreted carefully, as these indicators are derived from perceptions-based data.
2/ CCA EM consists of Azerbaijan, Georgia, Kazakhstan, and Turkmenistan. EMDE is Emerging and Developing Europe.

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[6] Control of corruption, government effectiveness, regulatory quality, rule of law, and voice and accountability.

[7] These estimates should be interpreted carefully as these structural variables (from the WGI) used in the regressions are derived from perceptions-based data.

through knowledge and skill transfers, while providing financing for productive capital (K).[8] Employment could also increase if higher productivity (A) and capital (K) increase the optimal level of labor input (L). Second, inward FDI contributes to financial and external stability as a stable source of foreign reserves.

The shift in external financing from FDI to non-FDI liabilities could also pose greater risks to financial stability, as the former of which is generally more stable. The third column of Table 7 reports that regression analysis, using quarterly data on lagged private flows as independent variables, suggests that there may be a causality from (net) external loans to the private sector to the dram/US$ exchange rate (although its coefficient fall below the significance level once other private flow variables are included in the regression, as reported in the final column of the table).[9] These results imply that the rapid reversal of such external financing might trigger an exchange rate depreciation, which could undermine economic stability.

Table 7. Armenia: Impact of Private Capital Inflows on Exchange Rate

	(1) Dram appreciation against US$ 1/	(2) Dram appreciation against US$ 1/	(3) Dram appreciation against US$ 1/	(4) Dram appreciation against US$ 1/
One-quarter lag of deposits by residents (net inflows, % of quarterly GDP)	-0.32			-0.09
	(0.20)			(0.27)
One-quarter lag of deposits by non-residents (net inflows, % of quarterly GDP)		-0.12		-0.14
		(0.14)		(0.13)
One-quarter lag of loans by non-residents (exc. loans to central bank/govt) (net inflows, % of quarterly GDP)			0.35*	0.31
			(0.17)	(0.24)
Observations	31	31	31	31
R-squared	0.67	0.64	0.69	0.70

Source: Armenian authorities, IMF WEO, Haver
Notes: Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
Due to data availability, data from Q2 2014 are used (through Q4 2021). When calculating variables in percent of quarterly GDP, annual GDP divided by four is used. Control variables not reported in the table are current account balance, net FDI, net portfolio flows, and net public borrowing (each in percent of quarterly GDP); change in Armenia's EMBI spread (basis point, end of period); and change in US-Armenia policy rate differential (percentage point, end of period).

IV. Policy Implications

Given negative implications of the decline in inward FDI, it is desirable to reinvigorate FDI. Main implications are as follows:

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[8] Borensztein et al. (1998) and others have provided evidence of such effects.

[9] Use of lagged variables intends to identify causality from such flows to the exchange rate, but the results should be interpreted with caution because the possibility of reverse causality remains (e.g., expectations of exchange rate could affect capital flows). Testing contemporaneous effects of private flows is even more challenging because sufficiently strong instruments are needed for contemporaneous variables, but such instruments are not available (e.g., in the current case, lagged variables are not sufficiently strong instruments).

- ***Improving the business environment***. Both "pull" (domestic) and "push" (global) factors drive international capital flows in general (Hannan, 2018). "Pull" factors include domestic macroeconomic and structural characteristics, and market imperfections. As noted earlier, the empirical analysis in this paper also indicates that structural factors ("pull" factors) have an impact on inward FDI (Table 5). In recent years, Armenia has made good progress in improving its governance. Continuing its efforts by building on important achievements, including the establishment of a single anti-corruption entity are key in this area.[10] Measures to reduce informality (discussed below) and facilitate human capital development are also important in improving the business environment.

- ***Continued prudent macroeconomic policies*** are also critical to mitigating uncertainty around investment returns. Higher (stable) growth may stimulate inward FDI (e.g., Table 5), suggesting that, if achieved through sound macroeconomic policies, it could create a virtuous cycle between economic growth and inward FDI. As for fiscal policy, efficient development of high-quality infrastructure is a priority.

There is also a need to expand, facilitate, and improve the intermediation of domestic financing, which could compensate for the lower inward FDI and limit the financial stability risk that arises from greater reliance on less stable non-FDI external financing.

- ***Development of a high-value-added export sector*** could help expand domestic saving. High-value-added export growth could be facilitated by reducing nontariff barriers, improving the quality of infrastructure, and strengthening education.[11] Development of such a sector could also attract inward FDI as utility and telecommunication did during the 2000s.

- ***Increasing financial inclusion of households and SMEs*** (for details, IMF, 2019) could expand domestic saving and facilitate access to it. Reducing informality in the economy by providing the necessary incentives for entities to become formal could increase financial inclusion.

- ***Reforms to facilitate corporate finance access*** include (i) improving financial reporting to simplify the due diligence process for banks, which could help reduce high collateral requirements and (ii) strengthening the insolvency regime to help better balance creditors rights.

V.   Conclusions

Sound macroeconomic policies focusing on macroeconomic stability and strengthening the business environment should be at the core of policy agenda to reverse a decline in Armenia's FDI. Over the past decade, inward FDI to Armenia declined in a sharper and more sustained manner than those to other emerging and developing economies. Based on the empirical analysis this paper argued that boosting growth through sound macroeconomic policies and an improved business environment could stimulate inward FDI. Empirical estimates suggest that improving Armenia's core governance and business environment characteristics to the

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[10] For specific reform priorities in the area of anti-corruption, see, for example, French et al. (2019).
[11] See the IMF selected issues paper Karapetyan et al. (2021) "Rebalancing Armenia's Growth Model."

levels seen at the top 5–25 percent among peer countries (CCA and EMDE) could increase inward FDI flows by up to ¾ percentage points of GDP.

Policy priorities should aim at eliminating main constraints for increasing access to finance identified in the paper in Armenia. Lack of sufficient funds, gender gap, financial literacy, and stubborn differences between urban and rural areas are among key bottlenecks for improving household financial inclusion. Informality, poor accounting practices, and low level of financial management practices are reported among major challenges for increasing access to finance for firms. In addition to reforms to improve the business environment, the recommended main measures to improve access to finance include reducing informality and developing capital markets. These measures to expand and facilitate domestic finance could help limit the financial stability risk that arises from greater reliance on other less stable non-FDI private flows.

The COVID pandemic and geopolitical challenging developments underscore the importance of strengthening stable sources of financing such as FDI and domestic financing. The benefits of inward FDI and greater access to domestic finance could become more important particularly because Armenia is now seeking investment-led growth per the new government program, which inevitably requires good access to inward FDI and domestic finance.

Appendix

Table A. Means of the Key Variables in Panel Data

	Mean		Mean
Real GDP growth (%)	4.0	Index of control of corruption	-0.38
Log GNI per capital (US$)	7.7	Index of government effectiveness	-0.38
Inflation (%, period average)	8.2	Index of regulatory quality	-0.35
General govt fiscal balance (% of GDP)	-2.2	Index of rule of law	-0.39
Current account balance (% of GDP)	-2.6	Index of voice and accountability	-0.32

Notes: The data are the panel data used for the analysis in Table 5.

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