



# REPUBLIC OF ARMENIA

## SELECTED ISSUES

June 2019

This Selected Issues paper on the Republic of Armenia was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on May 3, 2019.

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**International Monetary Fund**  
**Washington, D.C.**



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## SELECTED ISSUES

May 3, 2019

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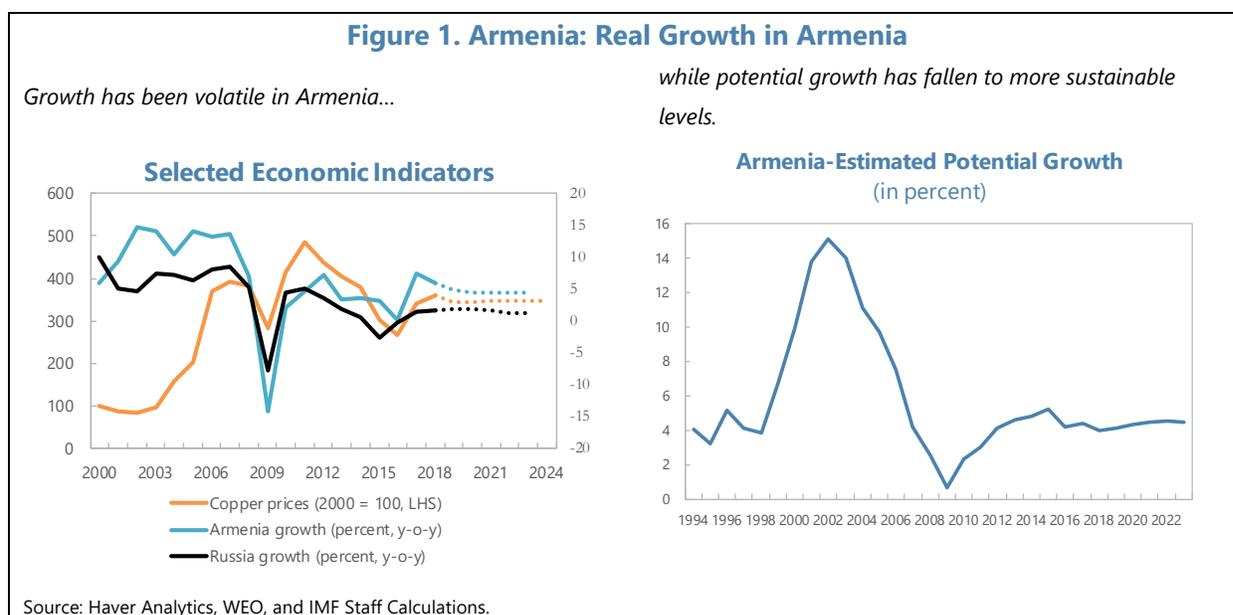
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# MACROECONOMIC IMPACT OF STRUCTURAL REFORMS IN ARMENIA<sup>1</sup>

This chapter seeks to quantify the macroeconomic impact of the government's reform agenda, which covers three broad areas: (i) tax policy and pension; (ii) governance, government efficiency, and corruption; and (iii) labor market and competition. The results suggest that a full implementation of the reform package would yield substantial benefits for the economy. In particular, it could increase real GDP by as much as 7 percent over the long run.

## A. Background

**1. Armenia's economy has performed well since independence, but GDP growth has been volatile and productivity gains limited.** Although the country has made good progress in macroeconomic stabilization, and the overall growth performance has been satisfactory, external shocks remain a significant source of vulnerability and volatility. Being a landlocked country with only two open borders out of four, the economy is narrowly based and remains dependent on remittances and commodity export revenues. For these reasons, growth has been volatile, especially after the global crisis. On the other hand, after relative boom years of the 2000s, potential growth is estimated to have fallen, mainly due to a decline or limited growth in total factor productivity.



**2. However, Armenia has potential for higher and more stable growth.** In the medium run, Armenia has the opportunity to improve economic conditions by implementing reforms in

<sup>1</sup> Prepared by Hamid Reza Tabarraei (MCD) and Michal Andrle (RES).

fiscal policy design and administration and in the labor market. In the long run, the country also needs to address its structural issues to enhance the business climate and competition to improve governance, tackle corruption, and boost government efficiency.

**3. Strengthening growth and competitiveness and addressing governance problems requires comprehensive reform efforts.** The new government has made it clear that fighting corruption and improving governance remain top priorities. Many reforms have been proposed to improve government efficiency and the business environment, including (1) establishing an anti-corruption body; (2) reviewing the law on protection of economic competition; and (3) promoting digitalization to facilitate the fight against corruption and the shadow economy. The authorities also intend to prepare an annual action plan to improve the business environment. Additionally, measures have been proposed to enhance corporate transparency, including through accounting and auditing reforms. A more systematic support program for small and medium-sized enterprises (SMEs), along with labor market reforms, should also help alleviate unemployment difficulties.

## B. Reform Program

**4. The note uses the Middle East and Central Asia Department Module (MCDMOD), one of the modules of the IMF’s Flexible System of Global Models (FSGM), to simulate the impact of key fiscal and structural reforms on output and competitiveness.** An explicit structural model is useful when assessing the effectiveness of structural reforms since simulating counterfactual scenarios, for which it is hard or impossible to carry out empirical estimates, would be possible. The rich structure of the model also allows complex reforms to be analyzed, tracing their impact on important macroeconomic variables. The parameters of the model are calibrated to match the key characteristics and stylized facts of the Armenian economy. These include, for instance, key “great ratios” in the economy (labor share, structure of GDP, remittances/GDP, etc.), structure of government spending and revenues, or the monetary policy regime. The model also benefitted from the previous work of IMF staff with the Central Bank of Armenia staff and the findings of past IMF technical assistance. The Annex 1 describes the main elements of the MCDMOD module of FSGM. FSGM itself is documented in Andrle et al. (2015).

**5. The policy package includes a number of measures:**

### Fiscal Policy

- **Tax policy:** To simplify the taxation system, a revenue-neutral tax policy reform is proposed, which includes a migration toward a flatter tax system by changing the personal income tax rate brackets from 23/28/36 percent to a single rate of 23 percent. This would cost 0.7 percent of GDP for the budget, which should be compensated by some specific offsetting measures, improved tax compliance, and revenue administration.
- **Pension reform:** Armenia has set up a new self-financing defined contribution pension system, which is mandatory for the population born after 1973. Eventually, the government

will match the contribution of employees at 5 percent of their payrolls. The reform could increase national saving by up to 3 percent of GDP in the long term.

- Reduction in current spending: Following the new fiscal rule, current spending decline by around 1.5 percent of GDP over three years.
- Increase in capital investment: Accordingly, and following the fiscal rule, public investment will increase by 0.8 percent of GDP over the next three years beginning from 2018. The implementation of the new PPP law would help scale up public infrastructure investment in energy, power, and transport, boosting medium-term economic growth as well as increasing international competitiveness.

### **Governance, Corruption, and Government Efficiency**

- The new government has pledged to fight corruption and improve governance. We assume that government efficiency as measured by the World Governance Indicators and the business environment measured by the Doing Business Indicators improve gradually, and the distance to the frontier is cut in half over 10 years, similar to some peer countries which have implemented extensive reforms.

### **Labor Markets**

- The authorities are developing measures to make salaries and wages more flexible and market determined. Also, the government is shifting from a passive employment program to a more active one. This includes enhancing compensation for employers for training, strengthening youth unemployment programs, increasing internship opportunities, and bringing back the long-term unemployed population into the labor force. Given the high unemployment rate, these reforms could increase the steady-state labor force and employment by 2-4 percent.

### **Competition**

- Planned reforms aim to remove barriers to entry in the tradable sector by enlarging criteria on anti-competitive and anti-monopolistic activities and improving contract enforcements, which would help reduce monopolies and oligopolies. Tax policy will also be used as a tool to create a more level playing field between the tradable and non-tradable sectors. This should improve profitability and encourage investment in the tradable sector. According to the authorities' diagnostics, profitability in the non-tradable sector is estimated to be about 16 percentage points higher than in the tradable sector. Enhancing competition could close the gap in profitability. This is incorporated in the model as a 3 percent increase in tradable sector productivity, gradually phased in over 10 years.

## C. Fiscal Reforms Package Simulation Results

### Tax Reform

**6. The simulations suggest that the government's tax policy reform can have a positive impact on output in the medium run if it is accompanied by supporting measures.**

The revenue-neutral tax reform consists of a lower income tax by 0.7 percent of GDP, accompanied by offsetting measures and improved compliance and revenue administration. The reform would allow for higher disposable income and wealth, private consumption and investment, which increases the capital stock and the production capacity. Because this is a permanent shock, real GDP increases by almost 0.4 percent in the long run in converging to the new steady state.

**7. As a result of higher domestic demand and production capacity, labor force and employment would rise.** As the labor force increases by 0.5 percent, the real wage declines because of more competition in the labor market, which would ultimately attenuate the impact on initial consumption hike. The current account also deteriorates due to stronger domestic demand despite some depreciation of the real effective exchange rate (REER).

### Tax and Spending Reforms

**8. The tax and spending reform combines the revenue-neutral tax reform with the changes in the composition of government spending.** By lowering current spending and increasing productive public investment, the government chooses a more pro-growth composition of public spending, in addition to pro-growth tax rebalancing. This would lead to a significant increase of output in the medium and long run. By reducing the deficit by 0.7 percent over three years, the government's debt-to-GDP ratio will decline by more than 5 percentage points over 10 years. By resulting in a lower deficit but a more pro-growth composition of public finance, the fiscal reforms have a mild negative and temporary impact on GDP but with permanently higher output in the medium and long run and a permanently lower debt-to-GDP ratio.

**9. A lower fiscal deficit is consistent with the improved current account due to lower imports and higher exports.** The depreciated real exchange rate stimulates exports and curbs the demand for imports, together with flat consumption and lower private investment. The trade balance and the current account-to-GDP ratios increase and improve the net-foreign-asset position of the country. Private investment declines in part because households smooth their consumption and partly because of the crowding out due to higher public investment. In the short run, the private investment decline overshadows the public investment rise.

### Pension Reform

**10. Pension reform will increase the long-term saving of the country, with only a mild impact on output and growth in the short run.** A permanent increase of private saving by 1 percent of GDP would lower households' disposable income in the short run and force them to

reduce investment and consumption. GDP shrinks by 0.16 percent at its lowest point, but consumption and investment, and as a result output, recover in the long run (10 years).

**11. Higher national savings will increase the country's capital stock in the long run.**

Although the benefits of higher saving will manifest in the long run, the current account improves immediately as savings increase and the real exchange rate depreciates. In the short and medium run, the increase in savings must lower household spending. Firms react to lower demand and decrease their investment initially, but gradually resume investing later when demand recovers. Therefore, with more available resources, investment will surpass the initial level, increasing the capital stock and the productive capacity of the country. Assuming that the shock is only on private saving, the impact on the fiscal sector remains limited and temporary.

## **D. Improvement in Governance, Tackling Corruption, and Enhancing Competition**

### **Improvement in Governance**

**12. Enhanced governance has a permanent impact on GDP, consumption, and investment.** Enhanced governance, expressed as a change in the Doing Business indicators, is mapped to the model as a gradual increase of total factor productivity (TFP) by 1.5 percent (Egert and Gal, (2016)), translating into higher GDP and potential output in the new steady state. This would result in higher growth during the transition period until the new equilibrium is reached. Thanks to higher productivity, the economy expands its productive capacity, with higher marginal products of labor and capital and thus higher real wages, consumption, and private investment.

**13. An economy-wide gain in productivity would have a marginal negative impact on the current account.** The economy-wide nature of the productivity increase leads to a real exchange rate depreciation. However, imports increase faster than exports due to higher domestic consumption and investment. This is because higher productivity makes investing more profitable and raises households' consumption with higher real wages. Therefore, the net export and current account balance marginally deteriorate because higher domestic demand offsets the impact of the depreciated real exchange rate. However, a deteriorated current account balance is not a sign of disequilibrium but an expected and desirable outcome in response to higher productivity in the future (Obstfeld and Rogoff, 1994).

### **Labor Reform**

**14. The increased labor force has a significant impact on GDP and potential output.** If labor reform measures can bring about structural changes in the economy, such that the unemployment rate falls by 3 percentage points over the next decade, GDP and potential output would also increase by close to 2.5 percent. Consumption follows the same trend as labor, although with a smaller magnitude, because real wages are suppressed due to higher labor supply. On the other hand, more abundant labor supply raises the marginal product of capital,

increasing the demand for investment. With some real exchange rate depreciation, the current account balance only slightly worsens with the pickup in domestic demand.

### Improvement in Competitiveness

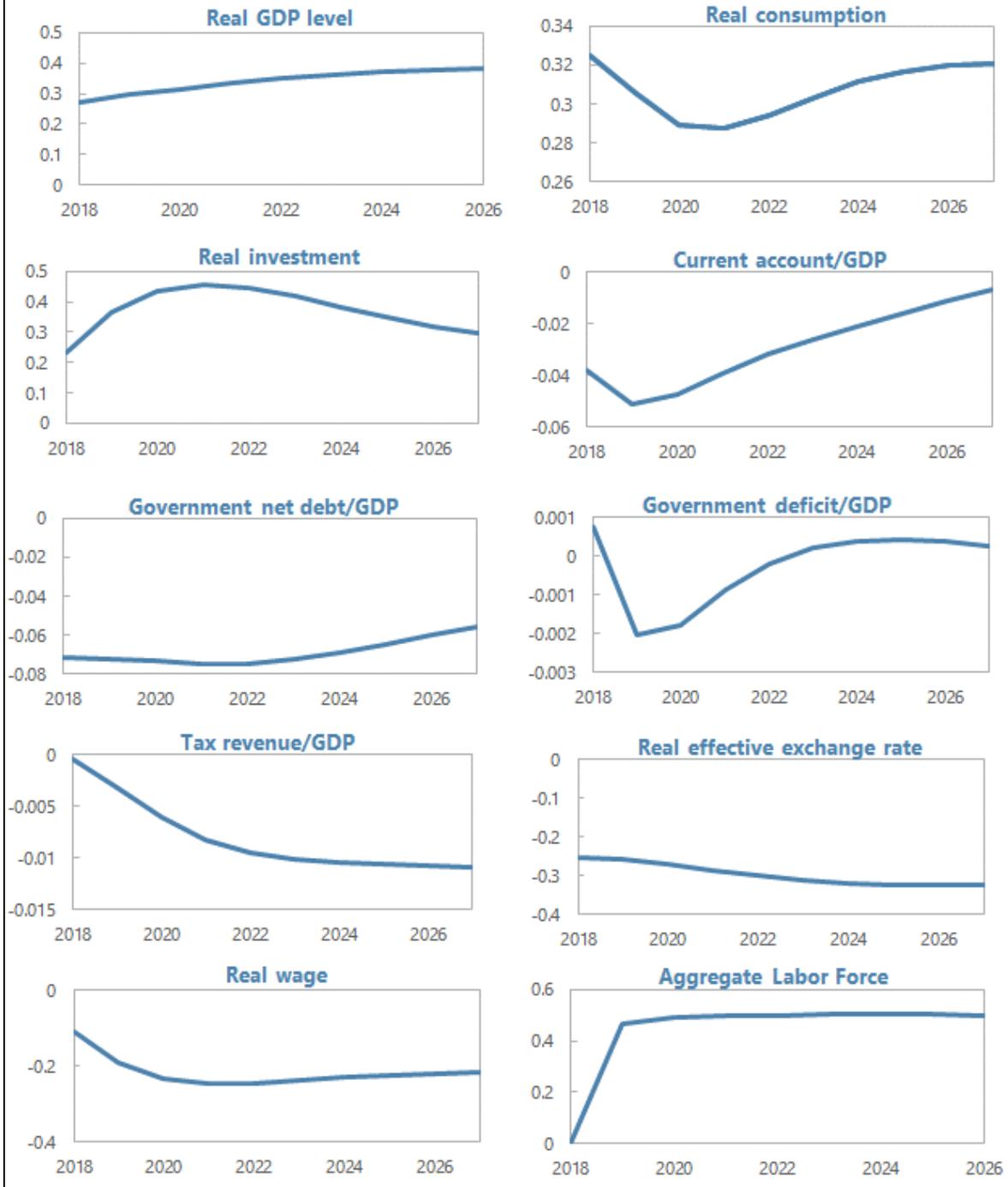
**15. With a more competitive tradable sector, output grows.** The shock consists of a gradual 3 percent increase in total factor productivity in the tradable sector. A positive shock to the tradable sector will increase domestic consumption and investment. Higher TFP in the tradable sector implies a reduction in the production cost of tradable goods. With higher production levels in this sector, the demand for labor and capital intensifies. Since the non-tradable and tradable sectors compete over labor, wages and disposable income also rise. The surge in consumption is therefore a result of higher labor force as well as current and expected wages in the economy.

**16. The gain on the current account would be temporary.** Because of a positive productivity shock in the tradable goods sector, producing tradable goods becomes cheaper and its price relative to non-traded goods declines. Given the assumption of labor mobility between traded and non-traded sectors, the wages in non-traded sector must increase, further widening the price gap between the traded and non-traded goods. This shift in relative prices results in the appreciation of the real effective exchange rate to maintain the external balance (Harrod-Balassa-Samuelson effect). The exchange rate partially counteracts the increased price competitiveness of the domestic tradable goods. The appreciated real exchange rate supports the mild deterioration of the current account after a temporary improvement.

## E. Conclusion

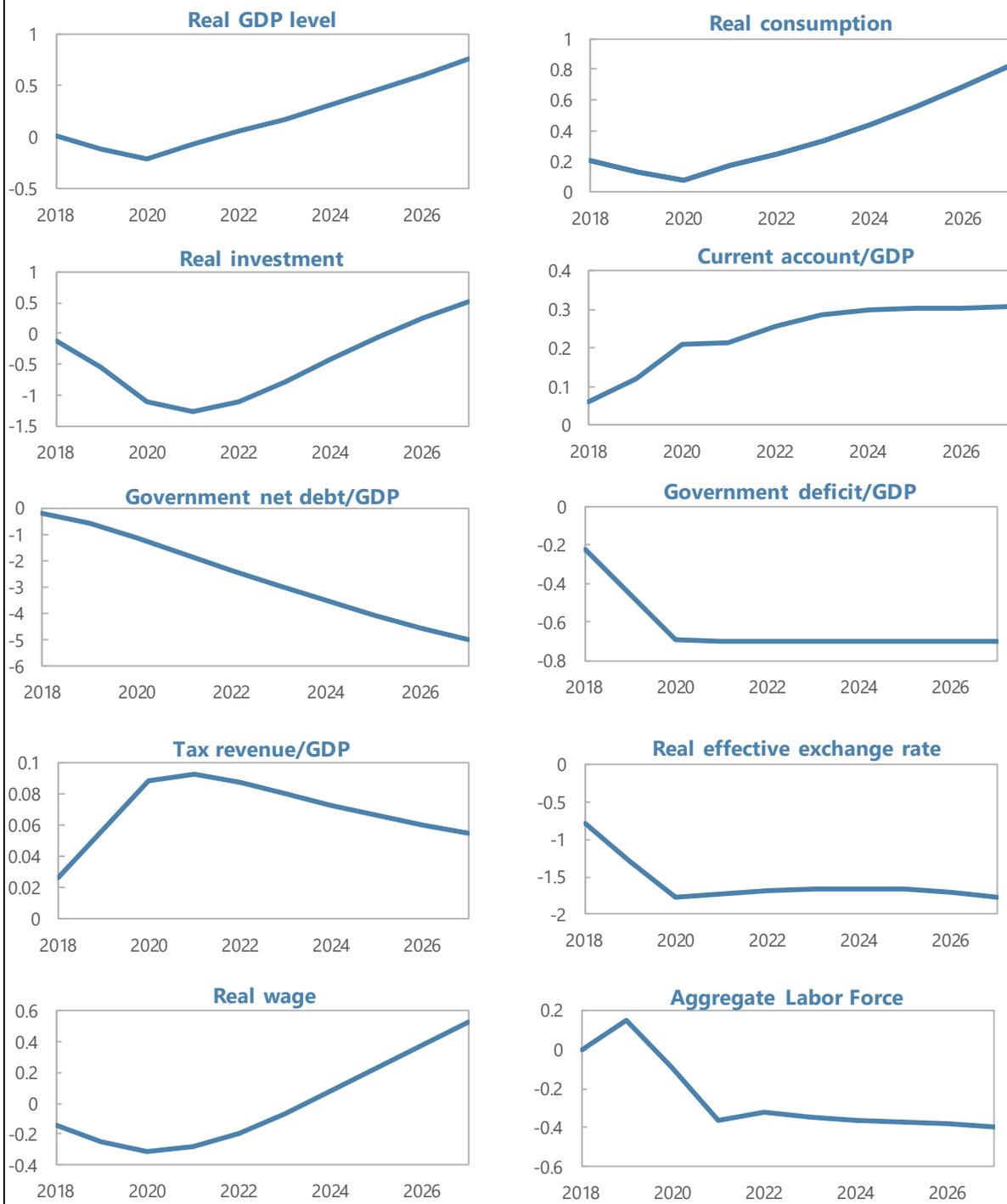
**17. The impact of implementing a comprehensive structural reforms package on growth, public finance, and external accounts can be substantial.** The macroeconomic model employed in this study suggests that a change in the composition of fiscal spending and reducing the deficit would have a significant impact on debt reduction. Higher public capital investment, if well targeted to infrastructure or human capital development projects, can raise the potential output. The tax policy reform, accompanied by firm measures to improve tax administration, can have a considerable impact on compliance and tax efficiencies. The pension reform has critical roles not only in ensuring the future of pensioners, but also in future fiscal sustainability and capital market developments. On the structural front, an economy-wide improvement in governance would increase potential output permanently and lead to higher growth in the transition process. Labor market reforms are important to tackle high unemployment, and they will have large impacts on consumption and investment too. Finally, it is important that Armenia uses its export potential and addresses weaknesses in the tradeable sector. All in all, based on the scenarios in this chapter and upon successful implementation of all the reforms, real GDP can increase by more than 7 percent.

Figure 2. Armenia: Tax Reform



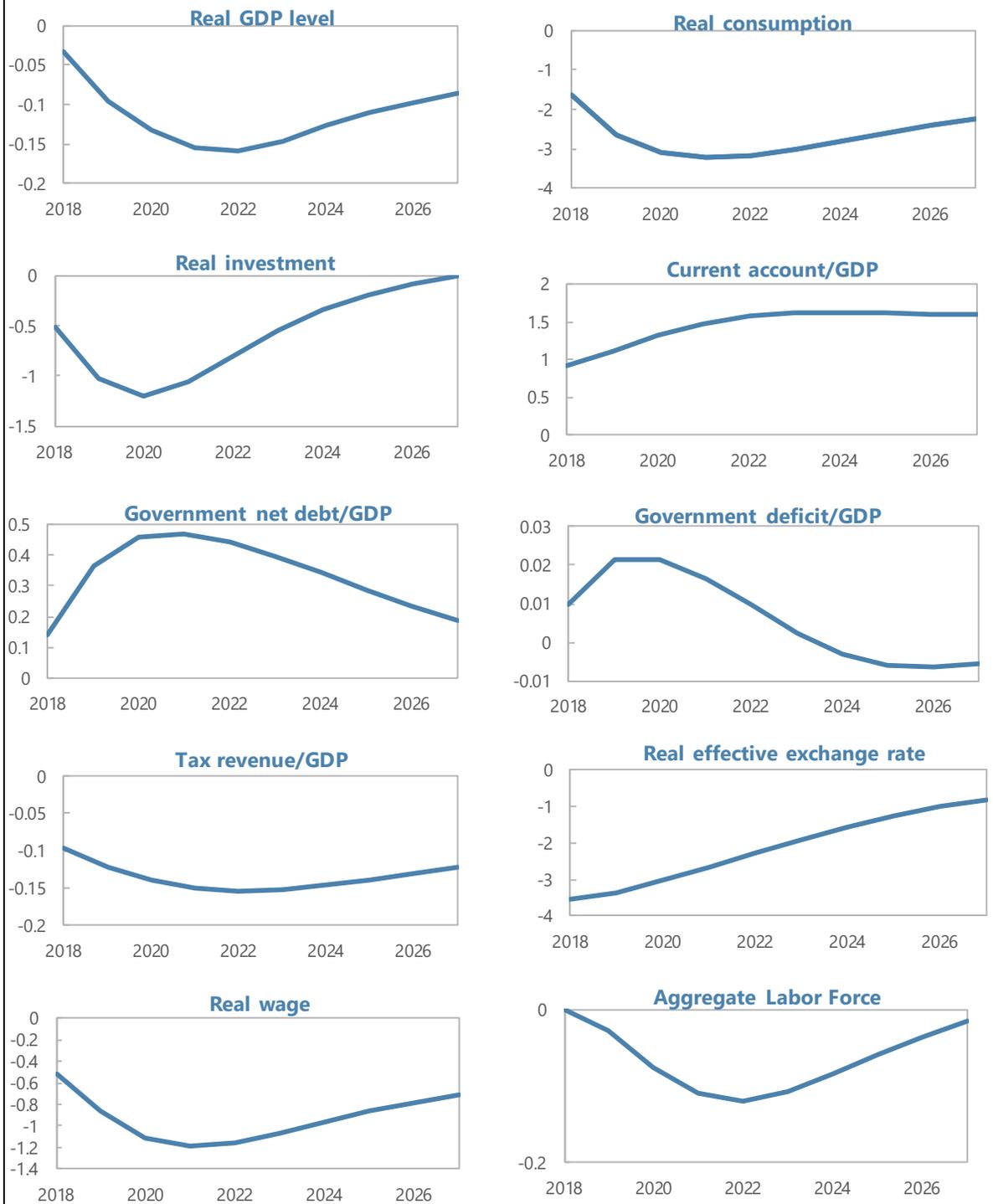
Source: IMF Staff Calculations

**Figure 3. Armenia: Fiscal Reform**



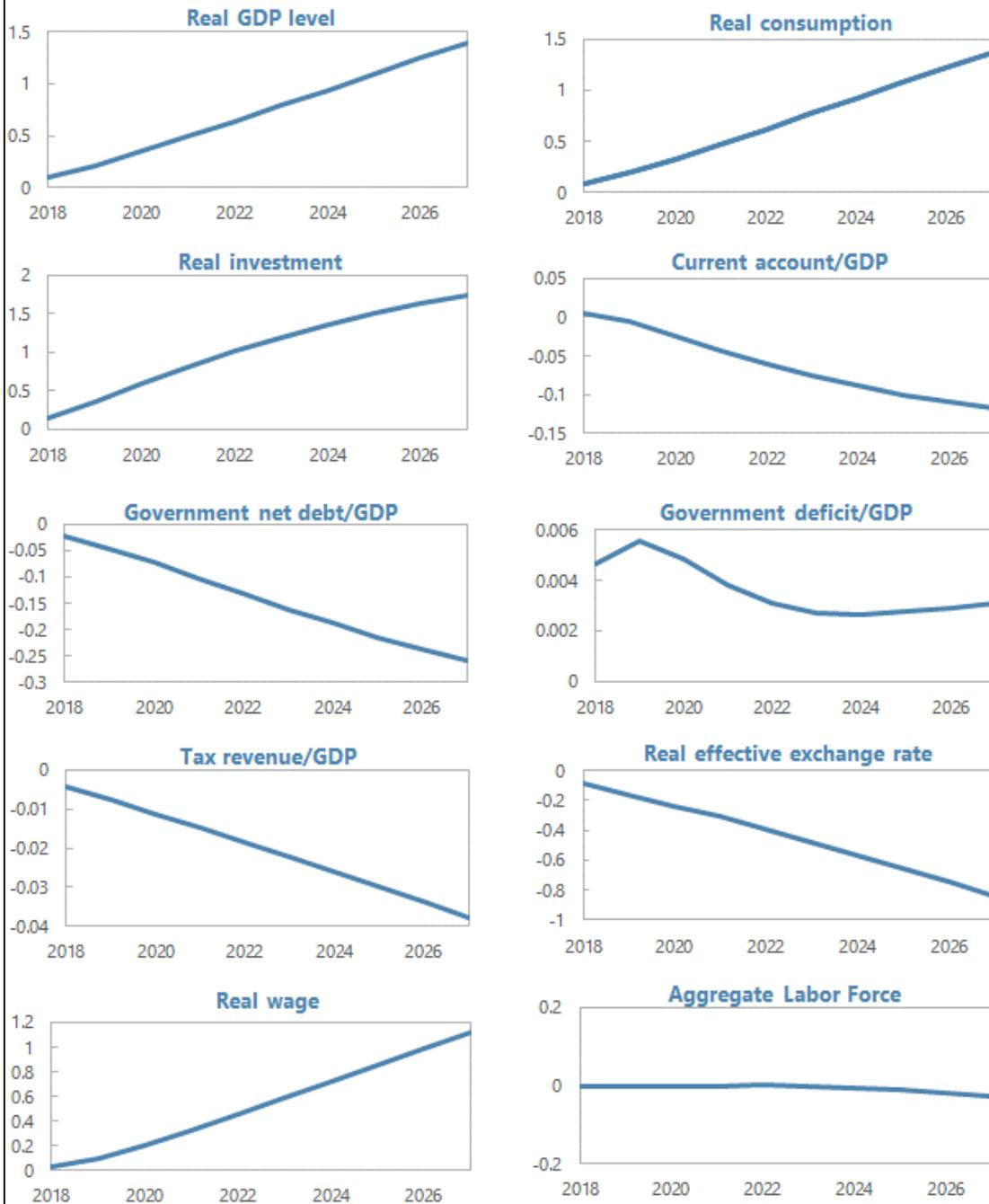
Source: IMF Staff Calculations

**Figure 4. Armenia: Pension Reform**



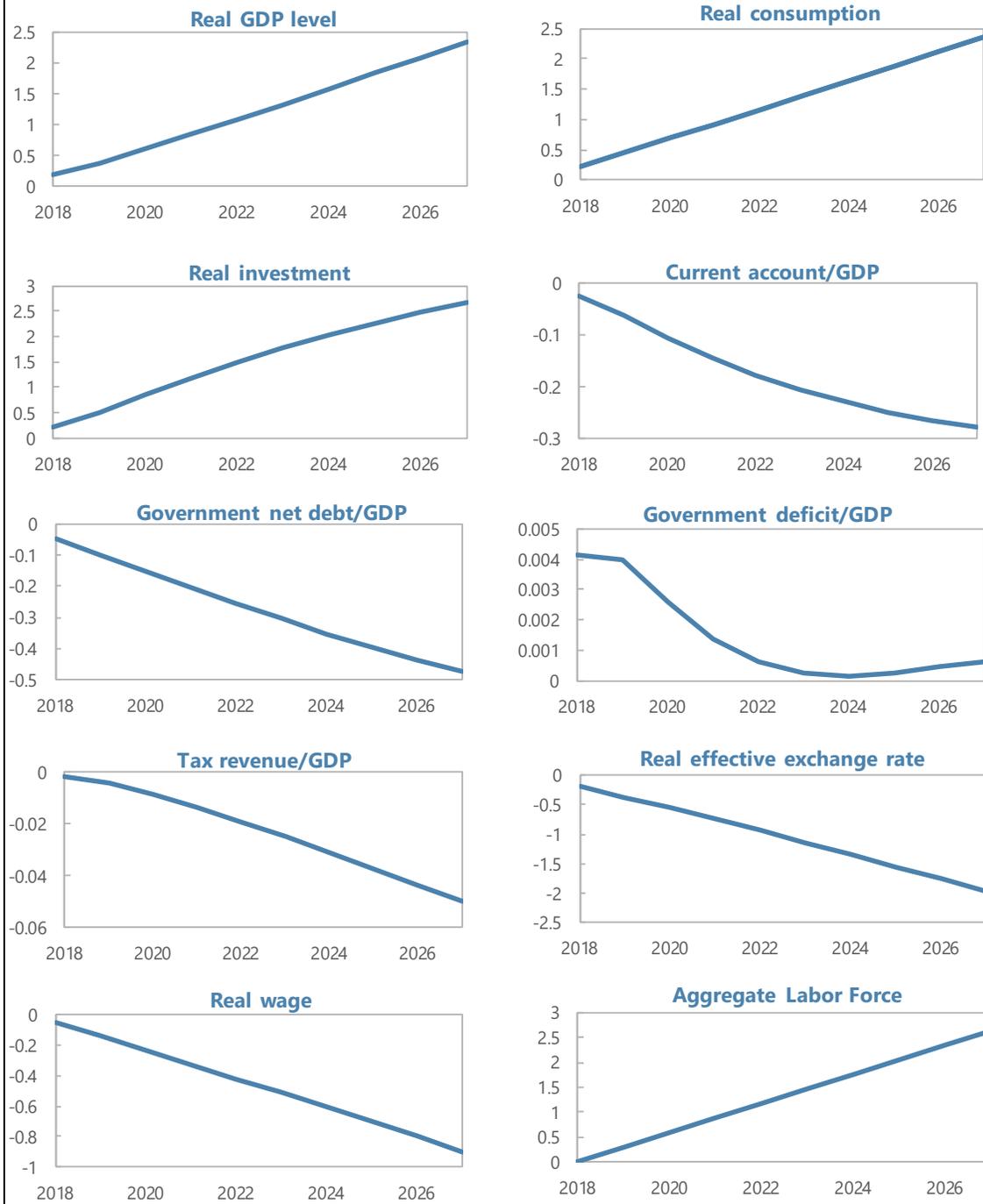
Source: IMF Staff Calculations

**Figure 5. Armenia: Improved Governance**



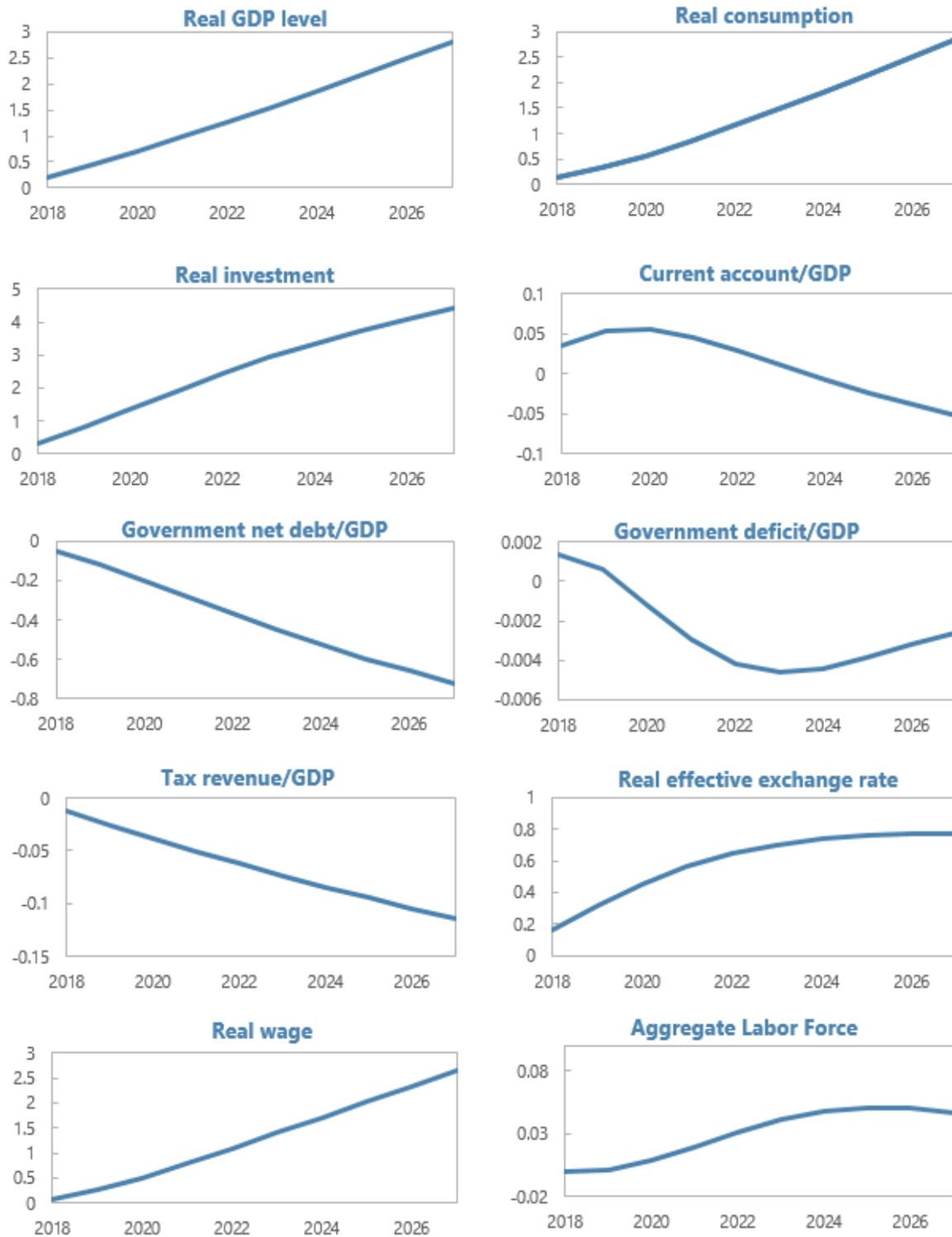
Source: IMF Staff Calculations

**Figure 6. Armenia: Labor Reform**



Source: IMF Staff Calculations

Figure 7. Armenia: Enhancing Competition



Source: IMF Staff Calculations

## Annex I. Flexible System of Global Models/Middle East and Central Asia Department Module

1. **This annex provides a broad summary of MCDMOD, one of the modules of the IMF’s Flexible System of Global Models (FSGM).** The model is presented in greater detail in Andrieu and others (2015).
2. **MCDMOD is an annual, multi-economy, forward-looking, model of the global economy combining both micro-founded and reduced-form formulations of economic sectors.** MCDMOD contains individual blocks for the countries in the Middle East and Central Asia regions, and additional regions to cover the remaining countries in the world. The key features of a typical MCDMOD country model are outlined below, noting any special circumstances that are applied for Armenia.<sup>1</sup>
3. **Consumption and investment have microeconomic foundations.** Specifically, consumption features overlapping-generations households that can save and smooth consumption, and liquidity-constrained households that must consume all their current income every period. Firms’ investment is determined by a Tobin’s Q model. Firms are net borrowers and their risk premia rise during periods of excess capacity, when the output gap is negative, and fall during booms, when the output gap is positive.
4. **Trade is pinned down by reduced-form equations.** They are a function of a competitiveness indicator (relative prices) and domestic or foreign demand. The competitiveness indicator improves one-for-one with domestic prices—there is no local-market pricing.
5. **Potential output is endogenous.** It is modeled by a Cobb-Douglas production function with exogenous trend total factor productivity (TFP), but endogenous capital and equilibrium employed labor. The equilibrium labor is determined by equilibrium rate of unemployment, given the labor force. The labor force participation itself is endogenous and will vary with changes in the incentives to work.
6. **Consumer price and wage inflation are modeled by forward-looking Phillips’ curves.** They include weights on a lag and a lead of inflation and a weight on the output gap. Consumer price inflation also has a weight on the real effective exchange rate and second-round effects from food and oil prices.
7. **Monetary policy is governed by an interest rate reaction function.** For most countries, it is an inflation-forecast-based rule working to achieve a long-run inflation target. Armenia is assumed to follow a flexible inflation-forecast targeting.

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<sup>1</sup> The individual countries are Armenia, Egypt, Georgia, Iran, Kazakhstan, Morocco, Pakistan, Saudi Arabia, together with China, Japan, Russia, and the United States. Other countries are members of larger country aggregates.

**8. MCDMOD captures a complete set of bilateral migration and remittance flows.** The population, labor force, and employment distinguish between “domestic” and “foreign” households. The wage differential between the two groups is used as a proxy for the relative productivity of the two groups. The relative productivity of both types of labor are reflected in the potential output of the economy. Foreign workers are assumed to remit a fraction of their disposable income to the countries of their origin. All expat workers are assumed to be liquidity constrained, consuming all their disposable income left after sending the remittances.

**9. There are three commodities in the model—oil, metals, and food.** This allows for a distinction between headline and core consumer price inflation, and it provides a richer analysis of the macroeconomic differences between commodity-exporting and importing regions. The demand for commodities is driven by the world demand and is relatively price inelastic in the short run due to limited substitutability of the commodity classes considered. The supply of commodities is also price inelastic in the short run. Countries can trade in commodities, and households consume food and oil explicitly, allowing for the distinction between headline and core CPI inflation. All have global real prices determined by a global output gap (only a short-run effect), the overall level of global demand, and global production of the commodity in question.

**10. Countries are largely distinguished from one another in MCDMOD by their unique parameterizations.** Each economy in the model is structurally identical (except for commodities), but with different key steady-state ratios and different behavioral parameters to reflect the policy regime, individual country characteristics, and the data available.

## References

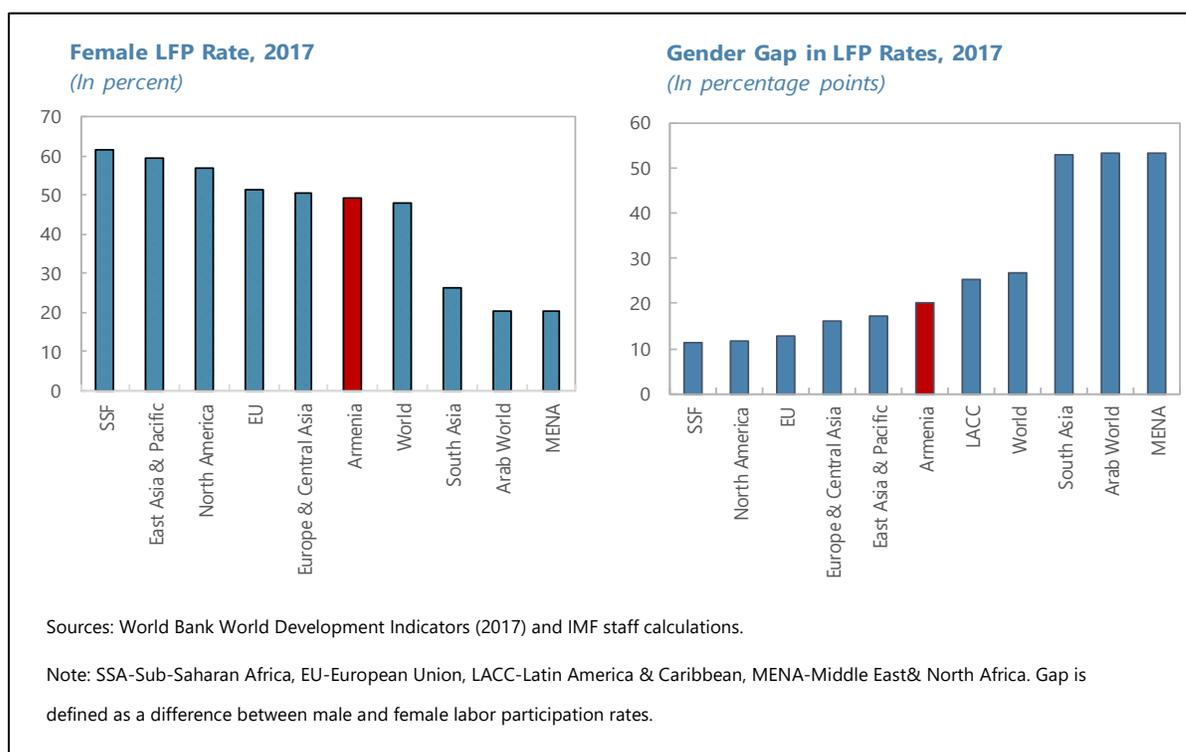
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## EXPANDING WOMEN'S ROLE IN THE ECONOMY<sup>1</sup>

Women can make significant additional contribution to economic activity in Armenia. They can help counterbalance the severe demographic pressure on economic growth from shrinking and aging labor force by boosting labor supply, as well as reverse the decline in labor productivity growth given their higher educational attainment of compared to men. Promoting female employment requires an integrated set of policies, including (i) improving the provision of childcare and care for people with disabilities; (ii) promoting better access to information technology to facilitate job search and increase opportunities for flexible work arrangements; (iii) improving education system to provide equal opportunities to succeed in the labor market for both males and females; and (iv) implementing gender budgeting. These should coincide with efforts to tackle the slack in the labor market and promote job creation. Results presented in this chapter strongly supports the economic benefits of promoting gender parity in labor force participation.

### A. Introduction

**1. A large portion of Armenian women do not participate in the labor market and economic activity.** Armenia's female labor force participation (LFP) rate at around 53 percent is broadly in line with the average indicators globally and among peers, and below the average male LFP rate. As of 2017, the gender gap in LFP rates stood at about 18 percentage points,<sup>2</sup> suggesting that there is a significant potential economic contribution from women in Armenia that remains untapped.



<sup>1</sup> Prepared by Lili Karapetyan (Armenia IMF ResRep office) and Yulia Ustyugova (MCD).

<sup>2</sup> This note uses the data for the LFP and gender gap for the age group above 15.

**2. The issue of weaker participation of women in labor markets is particularly acute for Armenia, given that it faces high male emigration and a declining working-age population.**

The population is projected to decline to 2.7 million by 2050 (UN, 2017) from about 3 million in 2018 (Armstat, 2018a), and the percentage of people aged 65 and above is expected to increase from about 12 percent in 2018 (Armstat, 2018a) to about 23 percent by 2050 (UN, 2017). Therefore, bringing more females to the

workplace could, by increasing labor supply, effectively help counterbalance the severe demographic pressure on economic growth while also alleviating fiscal pressure.

**3. Stronger female LFP could also help boost economic growth by raising labor productivity, given the higher educational attainment of women in Armenia.**

With 1.3 women for every man with tertiary education, women in Armenia are better educated than men. The components of the World Bank human development index (HDI) for Armenia suggest that women’s contribution to productivity as future workers is expected to exceed the contribution of men due to better educational and health indicators. Yet almost half the women with intermediate education, and more than one-third of the women with advanced education, do not participate in the labor market.

**Table 1. Armenia: Human Development Index, by Component**

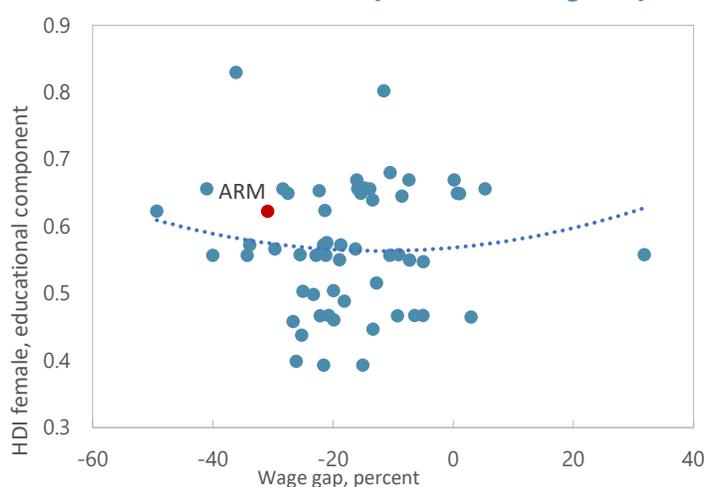
	Armenia		World Average	
	Men	Women	Men	Women
<b>Component 1: Survival</b>				
Probability of Survival to Age 5 (0-1)	0.99	0.99	0.96	0.96
<b>Contribution to productivity as future worker (A)</b>	<b>0.99</b>	<b>0.99</b>	<b>0.96</b>	<b>0.96</b>
<b>Component 2: School</b>				
Expected Years of School (0-14)	10.9	11.3	10.3	10.2
Harmonized Test Score (300-625)	439	448	388	393
<b>Contribution to productivity as future worker (B)</b>	<b>0.60</b>	<b>0.62</b>	<b>0.54</b>	<b>0.55</b>
<b>Component 3: Health</b>				
Fraction of Children Under 5 Not Stunted (0-1)	0.89	0.92	0.75	0.78
Fraction of 15-Year Olds Who Survive to Age 60 (0-1)	0.83	0.93	0.79	0.85
<b>Contribution to productivity as future worker (C)</b>	<b>0.93</b>	<b>0.96</b>	<b>0.89</b>	<b>0.92</b>
<b>Human Capital Index (A x B x C)</b>	<b>0.55</b>	<b>0.59</b>	<b>0.46</b>	<b>0.48</b>

Source: World Bank Human Capital Index (October 2018) and IMF staff calculations

**4. Gender gaps in Armenia go beyond labor force participation, even though legislation provides for equal economic opportunities among men and women.**

Armenia ranks 98 out of 149 countries in the World Economic Forum’s Global Gender Gap Index (WEF, 2018) with its general score of 68 percent (matching the global average) suggesting that there is a 32 percent gender gap to close. While Armenia has the highest score on the subcomponent of

**HDI, Educational Component and Wage Gap**



Sources: World Bank Human Capital Index (October 2018), International Labor Organization (2017) and IMF staff calculations. For the countries that are included in HDI and have the wage gap data.

Note: Wage gap is defined as a difference between female and male wages in percent of male wages.

education attainment, its rank on economic participation and opportunities<sup>3</sup> for women is at the bottom of the regional group. Indeed, progress in promoting women’s representation in senior management has been slow, with women making up only 29 percent in total senior managers (Armstat, 2018b), while gender wage gap remains high.

**5. This note seeks to outline the drivers of female LFP participation in Armenia and the possible policy actions to raise it.** It analyses (1) the main determinants of female LFP rates; (2) potential economic benefits from higher female LFP; and finally (3) what can be done to further integrate women in Armenia’s labor market.

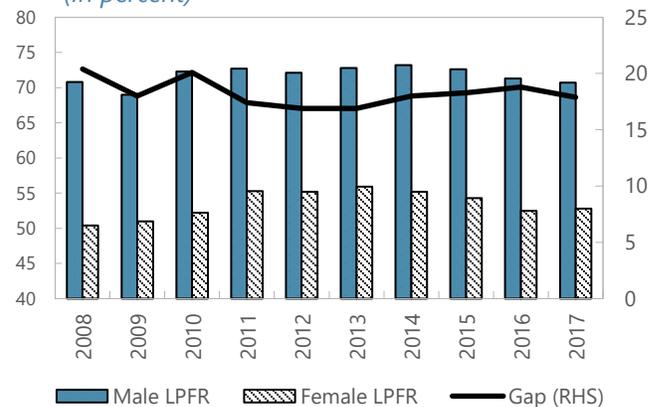
## B. Selected Stylized Facts

**6. Female LFP remained broadly unchanged over the last decade.** The female LFP was rising until 2014 but rolled back to about 53 percent in 2017. As a result, the LFP gap—the difference between the male and female LFP rates—has widened from 2012-13 lows to around 18 percentage points.

**7. The level of female LFP in Armenia seems to be consistent with Armenia’s middle-income status.** The literature suggests a U-shaped relationship between the level of economic development (e.g., GDP per capita) and female LFP rate (Goldin, 1994). While in low-income countries women work out of necessity in subsistence agriculture or home-based production, in middle-income countries the activity shifts from agriculture to industry, with jobs that are away from the home, making it more difficult for women to juggle home production and children with a market job. In the more advanced economies, as education levels rise, fertility rates fall, and social stigma weakens, women have historically shifted into the growing service sector (Rendall, 2010).

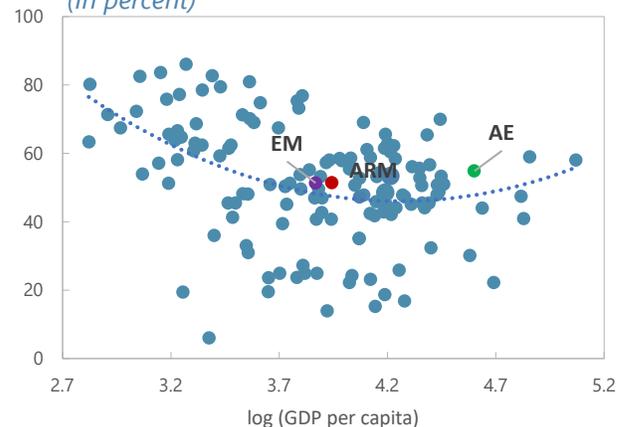
**8. Armenia’s women are well-educated, but this does not seem to have played a positive role in raising female LFP rates.**

**Armenia: LFP Rate**  
(In percent)



Source: Statistical Committee of Armenia and IMF staff calculations.

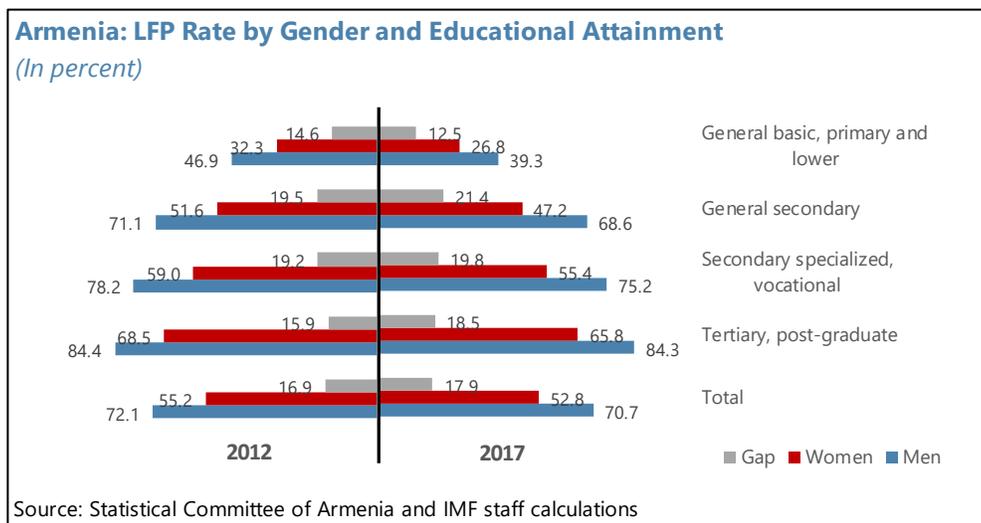
**Female LFP Rates**  
(In percent)



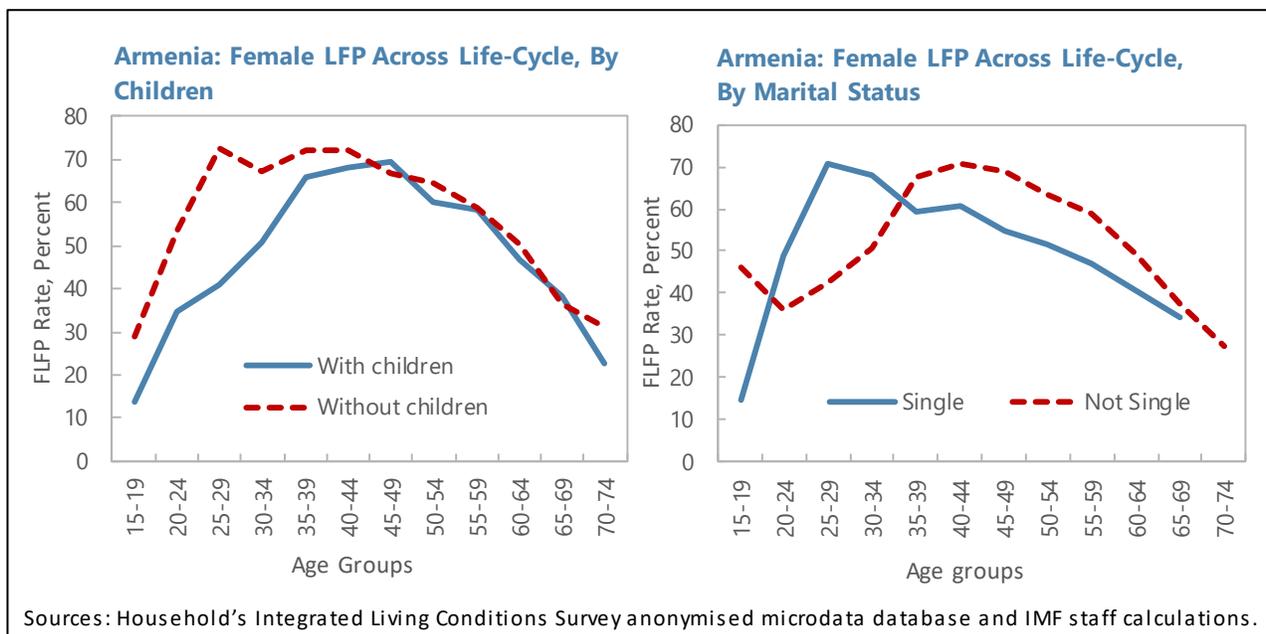
Sources: World Bank World Development Indicators (2017), Statistical Committee of Armenia and IMF staff calculations.

<sup>3</sup> Economic participation and opportunities subindex contains three concepts: the participation gap, the remuneration gap and the advancement gap.

The literature suggests that tertiary education for women plays a significantly larger role in their decision to participate in the labor force than for men (Grigoli, Koczan, and Topalova, 2018). The gap in labor force participation in Armenia between women and men, however, does not significantly differ across all levels of education, except for basic education, for which it lower. What is surprising is that it increased since 2012—again, across all but the basic levels of education.

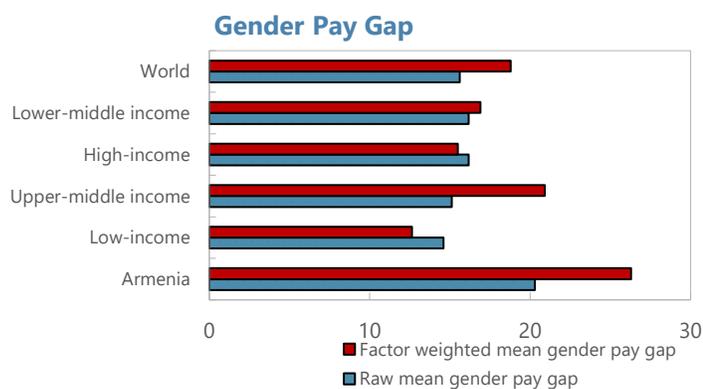


**9. Like elsewhere, LFP rates in Armenia differ significantly between women with and without children.** The difference in participation rates is particularly large for women aged between 20 and 35. Also, there is a similar difference between married and unmarried women, with differences reaching nearly 30 percentage points during ages 20 to 30.



### 10. Gender pay gap in Armenia is strikingly large.

According to the ILO estimates, Armenia's raw gender pay gap stands at 20.3 percent, while the factor-weighted gender pay gap is even higher, at 26.3 percent, exceeding the averages for all the country groups.<sup>4</sup> The pay gap could be a factor discouraging women in Armenia from participating in the labor market, although policies to address it are beyond the scope of this paper.



Source: International Labour Office, Global Wage Report 2018/2019

## C. Determinants of Female Labor Force Participation in Armenia: Evidence from Microdata

11. To analyze the drivers of female LFP, we estimate a logit model using a 2016 Household's Integrated Living Condition Survey (ILCS) for Armenia. The simplified form of the regression is the following:

$$\Phi(S_i = 1) = \beta^j X^{ij} + \epsilon_{ij}$$

where  $\Phi$  is the probability function and  $S$  is a dependent dummy variable on woman's participation in labor force (1 if participates, 0 otherwise). The explanatory variables are in line with the literature and include:

- Individual characteristics: 1) *age* - age (for the 15-75 age group); 2) *edu* - the highest level of completed education (values 1 to 9, where 9 is the highest level, in line with the ILCS); 3) *experience* - previous work experience (1 if woman has had a profitable employment before, 0 otherwise).

Measures of family composition: 1) *mstatus* - marital status (1 if not married, 0 otherwise), 2) *child* - presence of children of different age groups (age groups 0-3, 4-5, 6-11, 12-17) in the family (1 if there is a child, 0 otherwise); 3) *disabled* - whether there are disabled people in the household (1 if there is a disabled person, 0 otherwise).

<sup>4</sup> The *raw gender pay gap* refers to the difference in pay between women and men at a specific point in time and is usually calculated as the margin by which women's pay falls short of men's. *Factor-weighted gender pay gap* is arrived at by first selecting a set of indicators (factors), which are important determinants of wage structures, to cluster women and men in comparable subgroups. Four factors have been highlighted as particularly relevant for that purpose. These are "education," "age," "working-time status" (that is, full time versus part time), and "private-sector versus public-sector employment."

- Household's economic well-being, *ewellbeing* (values 1 to 6, where 6 is the poorest).
- Access to opportunities, *access* (index for access to computer/internet/cellphone/credit).

**12. Regression results (Table 2) confirm that previous occupation, family composition, and educational attainment are correlated with a woman's decision to participate in the labor force.<sup>5</sup>**

- *Individual characteristics.* The results show the usual "hump-shaped" relationship between female LFP rates across the life-cycle, with the age terms being significant and with the expected signs. A higher educational attainment is related to a higher participation rate among women. The relationship is particularly strong in secondary cities and in rural area. Having previous working experience is also a statistically significant factor for a woman's decision to participated in the labor force.
- *Family composition.* Being married has a negative and significant association with female LFP, and women's childcare responsibilities are an important constraint to their labor force participation. This negative relationship is particularly strong for the youngest group of children up to 3-years-old in all regions of the country and for the group of children of 4-5-years-old in rural and secondary cities. The presence of disabled family members also weighs on women's decision to participate in the labor force. This relationship is strong and robust across all the regions.

	Yerevan			Other urban			Rural			Armenia		
	coef.	z-Stat.	P value	coef.	z-Stat.	P value	coef.	z-Stat.	P value	coef.	z-Stat.	P value
<b>Individual characteristics</b>												
<i>age</i>	0.091	3.874	0.000	0.097	4.767	0.000	0.049	1.737	0.082	0.014	1.860	-0.063
<i>age^2</i>	-0.001	-4.588	0.000	-0.001	-5.677	0.000	-0.001	-2.172	0.030	-0.001	-4.146	0.010
<i>edu</i>	0.095	2.944	0.004	0.188	6.120	0.000	0.219	4.738	0.000	0.076	4.425	0.000
<i>experience</i>	0.542	4.793	0.000	0.662	6.431	0.000	0.264	1.600	0.110	0.652	9.737	0.000
<b>Measures of family composition</b>												
<i>mstatus</i>	0.510	3.479	0.001	0.669	4.464	0.000	0.585	3.515	0.000	0.121	1.678	0.09
<i>child_0_3</i>	-0.323	-3.036	0.002	-3.683	-7.096	0.000	-3.404	-5.257	0.000	-0.195	-3.815	0.00
<i>child_4_5</i>	-0.114	-0.894	0.379	-0.218	-2.323	0.020	-0.460	-3.602	0.000	-0.460	-7.865	0.00
<i>child_6_11</i>	-0.115	-1.111	0.267	0.023	0.196	0.845	-0.033	-0.223	0.823	-0.058	-0.797	0.43
<i>child_12_17</i>	0.039	0.378	0.716	0.014	0.159	0.874	0.015	0.112	0.911	-0.067	-1.177	0.24
<i>disabled</i>	-0.579	-4.484	0.000	-0.579	-5.412	0.000	-0.871	-4.968	0.000	-0.768	-11.274	0.00
<b>Household's level of economic well-being</b>												
<i>ewellbeing</i>	0.263	4.611	0.000	0.114	2.377	0.018	0.312	4.241	0.000	0.049	1.732	0.08
<b>Opportunities</b>												
<i>access</i>	0.125	1.721	0.085	-0.001	-1.828	0.068	-0.094	-3.038	0.002	0.096	6.004	0.000
Obs.	1144			1392			711			3247		
McFadden R-squared	0.191			0.214			0.214			0.22		

- *Economic well-being.* Lower economic well-being of a household is associated with the higher female LFP.

<sup>5</sup> Remittances are not included into the final selection of explanatory variables, as the preliminary estimated did not yield statistically significant coefficients.

- *Access to opportunities.* Finally, access to cellphones, computers, internet, and credit seems to be significantly associated with higher female LFP rate in Yerevan, but not in the other urban and rural areas. One possible explanation is that in a country where the bulk of economic activity is concentrated in the capital city, physical proximity to jobs could be more important than access to information and finance.

## D. Economic Benefits from Gender Parity in Labor Force Participation: How Large?

**13. How large could the economic benefits be from achieving gender parity in labor force participation?** To roughly estimate such benefits, we use a simple growth accounting framework and decompose GDP growth into the change in labor and the labor productivity growth. The predicted impact on GDP can be calculated by estimating the direct impact due to an increase in labor input and the indirect impact through the productivity enhancing channel. To estimate the importance of productivity channel associated with higher female labor force participation, we turn to regression analysis outlined below.

**14. The analysis uses panel data for Armenia's 11 regions (marzes) based on national accounts and labor force surveys by Statistical Committee of Armenia.** The sample period is from 2008 to 2017. The full list of variables is presented in Annex 1. Labor productivity is calculated as *real value added per worker* because the hours worked are not available by marz).

**15. The regression model follows the setup used in growth studies, including those focused on female labor force participation.**

$$\Delta LP_{it} = \alpha + \beta[\text{female labor force participation variables}]_{it} + \gamma[\text{control variables}]_{it} + \mu_i + \varepsilon_{it}$$

where  $i$  and  $t$  denote region and time, respectively;  $\mu_i$  denotes an unobserved fixed effect capturing time-invariable heterogeneity across marzes; and  $\varepsilon_{it}$  is a white-noise error term. The dependent variable  $\Delta LP_{it}$  is labor productivity growth. Explanatory variables are divided into female labor participation variables and a set of control variables that are relevant to productivity growth. Following the growth literature (e.g., Mankiw, Romer, and Weil, 1992; Petersson, Mariscal, and Ishi, 2017), they include the level of labor productivity; the growth rate of exports; the growth rate of capital stock per worker; the rule of law index and regulatory quality score as proxies for the quality of institutions; and output gap to control the economic cycle.

**16. We estimate the regression using the generalized method of moment (GMM) estimator.** Specifically, we choose the difference GMM estimator (Arellano and Bond, 1991; Arellano and Bover, 1995), because it addresses problems related to inconsistent estimators due to endogeneity in variables and a relatively short sample period. For instruments, we use lagged explanatory variables, fertility rate, voice and accountability index, the percentage share of female legislators, and that of female senior officials and managers.<sup>6</sup>

<sup>6</sup> See Annex II for the OLS estimates.

**17. The regression results are presented in Table 3.** The results from all four specifications suggest that female labor force participation rates are positively and significantly correlated with labor productivity growth. The contribution by women with high educational attainment is particularly large. The coefficient on “females with high educational attainment” remains solid and statistically significant even when we control for “males with high educational attainment,” as in model 3.

**Table 3. Armenia: Regression Results**

*Dependent variable: labor productivity growth*

<i>Estimation method</i>	<i>Arellano-Bond GMM 1/</i>			
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Level of labor productivity (t-1)	-0.464** (2.599)	-0.538*** (3.846)	-0.595*** (6.555)	-0.567*** (5.201)
Exports growth	-0.079 (0.686)	0.038 (0.533)	0.006 (0.068)	-0.153 (1.233)
Growth of capital stock per worker	0.448*** (4.153)	0.375*** (4.798)	1.126*** (5.111)	0.527*** (2.784)
Regulatory quality (t-1)	0.169** (2.129)	0.469*** (4.249)	0.319** (3.189)	0.273** (2.631)
Rule_of_law	0.25** (2.024)	0.682*** (8.159)	0.498** (2.562)	0.525*** (4.661)
GDP_gap	0.001* (1.862)	0.002*** (3.451)	0.015** (2.638)	0.002 (1.144)
<i>Labor force participation rate</i>				
All females	0.261** (2.023)			
Females with high educational attainment		0.483*** (5.759)	0.256*** (3.742)	
Males with high educational attainment			0.418*** (3.933)	
Females with low educational attainment				0.194* (1.943)
<i>Memorandum items:</i>				
Number of Observations	77	77	77	77
Number of Provinces	11	11	11	11
AR(1) p-value	0.006	0.002	0.010	0.007
AR(2) p-value	0.073	0.210	0.099	0.085
Sargan p-value	0.071	0.170	0.071	0.104

1/GMM specifications. Lagged explanatory variables, "fertility rate," "voice and accountability index," and "share of female legislators, senior officials and managers," are used for instrumenting female labor force variables. Notes: T-statistics are in parentheses. The symbols \*, \*\* and \*\*\* indicate that the estimated coefficients are significantly different from zero at the 10, 5 and 1 percent confidence level, respectively.

**18. A rough simulation of the impact of higher female labor participation on GDP using the regression results demonstrates the significant contribution that higher female participation can make to Armenia’s economy.**

- For men and women with high educational attainment, the gender participation gap averaged 18.3 percentage points in 2008-2017. If the gender gap were closed, the number of highly educated female workers could potentially increase by up to 50,000, depending on the labor market capacity to absorb new labor, which is equivalent to 3.7 percent of total labor force (including both men and women with all levels of educational attainment at all ages).
- We use the models with the lowest and highest coefficients to calculate the impact on productivity. The estimated coefficients are 0.26-0.48 (with the standard errors of 0.068 and 0.084). If the participation rate of females with high educational attainment increases to close the gender gap, labor productivity growth would be higher by 0.8-2.5 percentage points.
- Adding the labor supply and productivity effects, the level GDP would be higher by about 4 to 6 percent, depending on the labor market capacity to absorb new labor.<sup>7</sup>

## E. Policies to Promote Higher Female Labor Force Participation

**19. Improving gender equality and further integrating women into Armenia’s labor market requires efforts on multiple fronts.** While individual circumstances and preferences do affect women’s decision to work, policies to raise women’s role in the economy can also help. The impact of such policies, however, may only be visible over a generation. This calls for early action.

**20. First and foremost, policies to close the LFP gap should aim at improving the provision of childcare, as well as care for those with disabilities.** Lower levels of female LFP among women with young children, as revealed by microdata, combined with low fertility rates in Armenia could be indicative of some weaknesses in the system of childcare. Indeed, studies point to a limited number of preschools and childcare facilities in rural communities of Armenia (Inoue, Bailey, and Aedo Inostroza, 2017; ICHD, 2017). According to the UNESCO database, public spending on pre-primary education in Armenia has been at about 0.3 percent of GDP, which is comparable to Georgia, but well below Moldova, Kyrgyz Republic, and the countries of Eastern Europe.<sup>8</sup>

**21. Moreover, as confirmed by microdata, promoting better access to information technology will facilitate job search.** It will also increase opportunities for flexible work arrangements. The latter will enable women to successfully combine family and paid work<sup>9</sup> and provide more balanced opportunities for both women and men.

<sup>7</sup> Cuberes and Teignier, 2012 find that for Europe and Central Asia, the gender gaps result in about 14 percent of GDP per capita loss.

<sup>8</sup> Latest available data at <http://data.uis.unesco.org/>. Pre-primary education is defined as formalized early learning immediately preceding primary school.

<sup>9</sup> According to a World Bank survey in Armenia, “female students stressed that a career path has to provide opportunities to combine family and paid work, without damaging the traditional family unit” (WB, 2017).

**22. It is important to ensure that the education system provides equal opportunities to succeed in the labor market for both boys and girls.** Demoting “gender streaming” in the choice of subjects would help girls acquire skills that match the labor market demands. A recent WB study (Inoue, Bailey, and Aedo Inostroza, 2017) emphasizes that “...much of the work to increase women in STEM must take place at school, starting at a young age (primary). Decisions made early on can drastically affect the pipeline of women studying STEM fields at the tertiary level and choosing STEM as a career field.” Job training policies should also support reducing occupational segregation by gender and contribute to improving gender equality in the labor market.

**23. Fiscal policy may also have a role in empowering women through gender budgeting.** Armenia has been transitioning to program budgeting that tends to fare better than traditional input-based budgeting to incorporating themes, such as achieving gender-oriented objectives, into the budget process. Effective gender budgeting requires that spending ministries (e.g., education, health, justice, and so on) that are responsible for developing and administering key spending programs of the government take the lead in identifying gender-oriented goals that fall within their area of responsibility and developing programs and requesting budgets for them to bring about the achievement of these goals.

**24. Finally, promoting female labor participation will not produce meaningful economic benefits unless there is comprehensive effort to tackle the slack in the labor market.** The unemployment rate in Armenia has hovered around 18 percent since 2009 despite generally solid economic performance. And total employment contracted by about 15 percent since 2010 against the traditionally positive relationship between growth and job creation. Promoting the creation of jobs while addressing structural bottlenecks, including those related to vertical and horizontal skill mismatches on the labor market, would help tackle the slack in the labor market overall and support higher female LFP in particular.

## F. Conclusion

**25. There is a large potential economic contribution from women in Armenia that remains untapped.** Women can help address the key challenges facing Armenia: they can help offset the shrinking labor force, reverse the decline in labor productivity growth, and significantly boost the GDP. Our analysis suggests that eliminating the current gap of 18.3 percentage points between male and female labor force participation with high educational attainment could raise the GDP level by about 4 to 6 percent, depending on the labor market capacity to absorb new labor.

**26. Unleashing the full potential of the female labor force will require an integrated set of policies to promote and support female employment.** Elements of policy actions in this direction include (i) improving the provision of childcare and care for people with disabilities, (ii) promoting better access to information technology, (iii) improving education system to provide equal opportunities to succeed in the labor market for both boys and girls, (iv) implementing gender budgeting. The impact of policy action to raise women’s role in economy is likely to take time to materialize. This calls for early action on the policy front.

## Annex I. Data Description

1. **Labor productivity growth.** In percent. The first difference of the logarithm of real value added per worker (from 15 years old and over). Value added is calculated based on the gross production by sectors and marzes adjusted by coefficients of national gross production to value added by sectors, expressed in real terms.
2. **Female/male labor force participation rate (LP) defined as the number of female labor force participants (*LW*) as a percentage of female/male working age population (*PW*).** The labor force participation rate for a specific subgroup—for example, females with high educational attainment—is calculated as the number of labor force participants with a specific characteristic as a percentage of the total population with the same characteristic. The subgroups are the following:
  - High degree: Tertiary, post-graduate.
  - Low degree: Secondary specialized, vocational, general secondary, general basic, primary and lower.
3. **Level of labor productivity (*t*-1).** In logarithm.
4. **Exports growth. In percent.** The growth rate of exports of goods in real terms. Data by marzes are available in value terms. It is transformed to volume terms using country level export prices.
5. **Growth of capital stock per hour worked.** In percent. The first difference of the logarithm of real capital stock per worker. Data is available at country and sectors level. The stock for each marz is calculated using fixed assets data in real terms by sectors and its marz shares.
6. **Regulatory quality.** Calculated by the Worldwide Governance Indicators for Armenia as a whole. This variable is a proxy for the quality of institutions.
7. **Index of rule of law.** Calculated by the Worldwide Governance Indicators for Armenia as a whole. This variable is a proxy for the quality of institutions.
8. **Fertility rates.** In logarithm. The number of births to the female population. This variable is used as an instrument for female labor participation variables. This captures the long-term decisions of women's career. Rates at marz level are calculated using rural/urban population shares for each marz.
9. **Index of voice and accountability.** Calculated by the Worldwide Governance Indicators for all Armenia. This reflects perceptions of the extent to which a country's citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. This is used as a proxy for female-friendly environment and an instrument for female labor participation variables.

**10. Female legislators, senior officials and managers.** In percent. The share of legislators, executives, and managers who are women, and for Armenia as a whole. This serves as a proxy for the role model effect, expected career improvement, and a measure of female access to nontraditional jobs, and is used as an instrument for female labor participation variables.

**11. GDP gap calculated using HP filter with  $\lambda = 50$ , to control for business cycle.**

## Annex II. Ordinary Least Squares Regression Results

<i>Dependent variable: labor productivity growth</i>		
<i>Estimation method</i>	<i>OLS (fixed effects)</i>	
	Model 1	Model 2
Level of labor productivity (t-1)	-0.591*** (-4.077)	-0.612*** (-5.094)
Exports growth	-0.008 (-0.092)	0.024 (0.305)
Growth of capital stock per worker	0.318*** (3.561)	0.255*** (3.174)
Regulatory quality (t-1)	0.246** (2.154)	0.521*** (4.768)
Rule_of_law	0.408*** (3.047)	0.645*** (5.229)
GDP_gap	0.004*** (3.622)	0.004*** (3.727)
<i>Labor force participation rate</i>		
All females	0.181** (2.049)	
Females with high educational attainment		0.408*** (4.673)
<i>Memorandum items:</i>		
Number of Observations	99	99
Number of Provinces	11	11
R squared	0.527	0.640
<p>Note: T-statistics are in parentheses. The symbols *, ** and *** indicate that the estimated coefficients are significantly different from zero at the 10, 5 and 1 percent confidence level, respectively.</p>		

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# ANTI-CORRUPTION ENFORCEMENT PRIORITIES<sup>1</sup>

*Successive Armenian governments have acknowledged corruption as a problem and taken steps to develop anti-corruption strategies and strengthen the statutory framework. However, implementation has lagged behind government commitment and a core challenge for the new administration is to close the implementation gap. Anti-corruption efforts are fragmented with investigative responsibilities spread over several different agencies leading to a dilution of resources and skill-sets that weakens investigative capacity and undermines the ability to detect entrenched and institutionalized corruption networks. Enacting legislation to concentrate resources into a single, autonomous anti-corruption agency with responsibility for investigating corruption will streamline and focus anti-corruption efforts is a priority. Other areas are also in need of improvement. With respect to the processing of corruption cases, both investigation and prosecution stages are subject to high attrition rates. Some improvements in the statutory framework are also required and Armenia is in the process of revising its criminal procedure code. The following paper identifies some key issues, both institutional and statutory, and recommendations where Armenia can strengthen its anti-corruption enforcement framework to better enable law enforcement agencies to detect, investigate and prosecute cases of corruption.*

## A. Introduction

### 1. **Armenia’s so-called “Velvet Revolution” of 2018 was in large part the result of popular dissatisfaction with corruption, social inequality and a poor business climate.**

Despite successive governments since 2003 having invested in anti-corruption reforms, limited progress was made. Inadequate governance and the weak business climate, as well as the absence of key growth drivers, constrained the economy’s capacity for growth. In addition, limited achievements in poverty reduction and unemployment added to overall social discontent.

### 2. **A new government came to power in May 2018 after a peaceful political transition, on a pledge to tackle corruption and bring about “economic revolution.”**

By cementing a solid majority in the National Assembly, following a snap parliamentary election in December 2018, the new government now has an opportunity to build the momentum needed for positive and sustainable change and, particularly, to be able to bear down on state corruption as prioritized in the five-year government program.

### 3. **A key priority is to anchor a renewed anti-corruption drive within a strong anti-corruption framework by including the prevention, investigation, detection, and prosecution of corruption cases.**

While recognizing that many areas need to be addressed in a coordinated way to achieve a sustainable reform package and overhaul of governance vulnerabilities, this note focuses on the main challenges inherent in the current

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anti-corruption framework, particularly in relation to investigations and prosecution, and sets out the priorities for reform.

## B. Armenia's Efforts in Fighting Corruption

**4. Armenia has made significant efforts to strengthen its anti-corruption framework over many years.** In particular, the last decade has seen development of new strategies and the enactment of key legislation. Efforts intensified post-2015, when according to an OECD assessment – more precise measures for prevention of corruption, criminalization and law enforcement were put forward and partially enacted. These focused on civil service and public administration reform, enhanced transparency and accountability and an improved process for civil society participation.

**5. The impact of these efforts in building legal and institutional frameworks has, however, been limited.** Thanks to the simplification of regulations and introduction of e-governance, there have been improvements in the business climate, government effectiveness, regulatory quality, property rights protection, and judicial independence and a marginal decrease in perceived levels of petty corruption (as reflected by the international rankings— see Annex 1). With the support of international development partners, Armenia has also strengthened its corruption prevention and law enforcement institutions. However, enforcement of anti-corruption laws has been weak, including in the judiciary, tax and customs, health, education and military areas.<sup>2</sup> While human and financial constraints are contributory factors, a deficit of political will has been an important underlying cause of governmental inertia.

**6. The new government has recognized the challenges and has strengthened implementation of anti-corruption efforts.** The authorities have already launched widespread investigation and prosecution of high-profile corruption cases and unearthed cases of tax fraud by companies, including some controlled by former public officials or their affiliates.<sup>3</sup> They have also initiated investigations into a number of foreign-financed public and private sector projects, including in mining and infrastructure. In particular, the Armenian authorities have set out an anti-corruption strategy for 2019-2022 that ensures sustainability of efforts and has strong emphasis on implementation. The strategy – which has broad support from society and political institutions - appropriately aims to address conflicts of interest in policy-making bodies, to ensure judicial and prosecutorial

<sup>2</sup> Anti-corruption reforms in Armenia: 4<sup>th</sup> round of monitoring of the Istanbul Anti-Corruption Action Plan, OECD, 2018.

<sup>3</sup> Prosecutor General's Office reports that in 2018 the number of initiated cases and the officials prosecuted for corruption has increased by almost 4 times compared to 2017, while the number of convicted increased by more than 3 times. During the nine months of 2018, the anti-corruption campaign revealed damage to the state at about AMD 64 bln. The State Revenue Committee reports to have recovered about AMD 21 bln. (1.7 % of annual tax revenue target for 2018) by fighting corruption and shadow economy in 2018H1.

independence and integrity, and to guide efforts to detect, investigate and prosecute corruption cases. The key challenge for the government is to implement these policies.

**7. Supporting reforms to combat corruption and improve governance is a priority for Armenia’s donors and development partners.** Anti-corruption efforts have been supported by the OECD’s Anti-Corruption Network for Eastern Europe and Central Asia (ACN) in the context of the Istanbul Anti-Corruption Action Plan in 2003. Armenia has also cooperated with the OECD as a member of the Group of States against corruption (GRECO) since 2004. Other donors and IFIs have also been engaged in reforming Armenia’s judiciary systems and strengthening the institutions and mechanisms for combatting economic and political corruption, and improving public finance management, public administration, service delivery, etc.

## C. Institutional Framework Reform Priorities

### Enhancing Corruption Prevention and Detection

**8. Armenia has operated a centralized electronic system of asset declarations since 2014, regulated mainly by the Law on Public Service.** The system, introduced with the World Bank support, is multi-faceted and includes a registry of declarant public officials (and related persons), an online system for completion and submission of declarations, and statistical reporting and declaration analysis. In 2018, over 11,000 declarants and related persons were processed through the online system. As a result of declaration analysis, the authorities have initiated administrative disciplinary proceedings against 419 officials resulting in 219 warnings and 68 fines (see Annex 1, Table 1).

**9. The declaration system needs to be strengthened.** Effective verification faces a number of statutory constraints. The commission lacks powers to conduct forensic reconciliation of declarations between different years or ownership identification (property sitting with siblings cannot be investigated and there is no requirement to disclose beneficially-owned assets).<sup>4</sup> Also, the crime of illicit enrichment has only existed since 2016 and is seldom used - only 4 cases have been brought before the courts over the past years. The day-to-day reality is, therefore, that verification of asset declarations is formalistic and limited to investigating whether declarations have been filed in time and have been properly completed. The cases brought to court are almost all administrative in nature with no criminal sanctioning.

**10. The new 2017/18 Corruption Prevention Law (CPC) has had the unintended consequence of interrupting asset declarations, with important implications for anti-corruption efforts.** Before the law was passed, the declaration system was managed by the Commission on Ethics of High-Ranking Officials (CEHRO) which had responsibility for

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<sup>4</sup> Beneficial owner refers to the natural person(s) who ultimately owns or controls a customer and/or the natural person on whose behalf a transaction is being conducted. It also includes those persons who exercise ultimate effective control over a legal person or arrangement.

maintaining the declarations register for senior public officials, analyzing and publishing data on income and property declarations, instigating proceedings for violations and imposing administrative and other sanctions.<sup>5</sup> The CPC Law formally replaces CEHRO with the Corruption Prevention Agency (CPC) and as of 2018, state officials are required to file asset declarations with the new agency. However, because the CPC has yet to become operational, state officials have nowhere to report to—the CEHRO’s 17 staff and underlying IT system have not yet transited to the non-existent CPC. Additionally, CEHRO’s management is reluctant to transit because of CPC’s recruitment procedures, with the attendant loss of experience and expertise. Also, facing this uncertainty, some CEHRO managers have already left the agency. The system is at risk of collapse in the very short term unless a way is found for it to continue to operate regardless of the institutional changes. At present, CEHRO’s staff continue to be paid.

**11. With the CPC law not yet in effect, there is currently no preventive body.**

Reinvigoration of the asset declaration system urgently requires enactment of the CPC law which will also establish a preventive body for anti-corruption—a function currently missing in Armenia. Although the CPC law does not establish an anti-corruption agency with powers of investigation and prosecution, it does bestow other subsidiary powers including “participation in the development of an anti-corruption policy.” The commission has not yet been established and the selection of the five commissioners (through a separate “competition board”) has not commenced. Moreover, with the statutory requirements for selection - which involves soliciting potential candidates through a public process, a two-step test and appointment by parliament – the process is likely to require at least six months.

### **Streamlining Investigative Services**

**12. Investigation of corruption offences and officials engaged in corruption-related conduct is currently spread across several agencies with overlapping mandates.**

A division of the Special Investigation Service (SIS) was formed in 2014 (Investigation Department for Corruption, Organized and Official Crimes) with 43 staff specialized in corruption cases and mandated to conduct pre-investigation inquiries in corruption offences. The Investigative Committee - the largest of the agencies - has some 680 investigators in Yerevan and other major cities/regions but not all work on corruption cases.<sup>6</sup> The State Revenue Committee has 29 investigators assigned to three investigative departments based in Yerevan with responsibility for investigations across the entire country, but with no specific specialization in corruption offences. The Investigation

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<sup>5</sup> CEHRO analysis was concerned predominantly with compliance checking and it had only limited follow-up powers.

<sup>6</sup> Although not all of these work on corruption cases, as well as units devoted to military investigations - is responsible for investigating corruption-related offences (including bribery, trading in influence, abuse of office, commercial bribery, etc.) not specifically assigned for investigation by the SIS. Currently, however, only 4 of its investigators are specialized in corruption-related crimes as specified within the Prosecutor General’s Order of 19 January 2017.

Department of the National Security Service has 20 agents in a new department which handles corruption and economic crimes, pre-investigating offences on a 10-day case preparation basis after which cases are transferred to the other investigative bodies.

**13. The way in which cases of corruption are currently investigated by the various agencies is sub-optimal and leads to ineffective results.** Fragmentation is inefficient in use of available resources. It leads to a dilution of analysis and lack of coordination - each of the services investigates other crimes so that analytical capabilities are spread thinly, and each transaction is processed in its own right rather than as part of a wider, discernable pattern. Crucially, there is limited analytical capacity for understanding complex financial transactions and, consequently, focus tends to be on smaller-scale and simple transactional corruption, rather than the more complicated and larger network transactions. Cases of infringement can also arise where the law permits services to follow an investigation thread, even if it leads into the jurisdiction of another service. Furthermore, the investigative competence of each of the agencies is determined by the Criminal Procedure Code and none enjoys the independence demanded by international standards.

**14. The need for a single autonomous anti-corruption agency (or “unified body”) was repeatedly identified by the current administration (when in opposition) and supported by counterparts and civil society partners.** A single specialized agency would optimize use of resources by developing expertise in undercover operations, classical investigation techniques, financial investigations, asset analyses, analysis of public information concerning corruption and by facilitating effective and efficient handling of cases. The agency could embrace both investigative and prosecutorial functions.

### **Strengthening Governance**

**15. There is a need for greater transparency and accountability in the processing of corruption cases.** Despite inefficiencies in investigating potential corruption, the number of cases detected and investigated in Armenia is significantly higher than the number of prosecutions, while the number of cases decided by the courts is markedly lower still. There is also, as previously mentioned, a noticeable dearth of illicit enrichment cases (19). While attrition rates are common in other countries, the fall-off in Armenia is particularly sharp, most notably in specialized corruption cases. In 2016, the attrition rates were 81% for prosecution (i.e. only 19% of the corruption cases investigated were prosecuted) and 87% for adjudication (i.e. only 13% of the corruption cases investigated were adjudicated), with 2017 attrition rates only marginally better (see table below). The reasons for such high attrition rates are not entirely clear. However, the process by which it is decided to discontinue the enforcement process of corruption cases is vulnerable to abuse, and greater transparency and accountability is required.

**Table 1. Armenia: Completion Rates for Corruption Cases in Criminal Enforcement Process**

Year	Investigation	Prosecution	Adjudication
<b>2016</b>	<b>262</b>	<b>50 (19%)</b>	<b>34 (13%)</b>
<b>2017</b>	<b>287</b>	<b>72 (25%)</b>	<b>41 (14%)</b>

Source: Authorities' response to IMF questionnaire.

**16. Armenia's judicial procedures need to be more efficient in managing workload.** The cause of current inefficiencies may be partly down to staffing, but inefficient procedures and outdated working methods are also factors. Overall court delays are worsening - the clearance rate of corruption cases halved over 2017-2018, and now stands at 53%, with backlogs continuing to build. The courts are unable to handle the inflow of cases and it is unrealistic to expect them to cope with the increased inflow projected for 2018-2019.

**17. There are no specialized anti-corruption judges or prosecutorial body for anti-corruption, although there is some specialization within the Prosecutor General's Office.** Corruption cases are examined in the courts of general jurisdiction of the first instance. The absence of effective specialization - as is the international standard - may be a factor in the broader problems in the judiciary as specialization tends to improve both efficiency and quality. An insolvency court has recently been established.

**18. Slow and unpredictable processing of debt enforcement cases in the courts creates uncertainties in the market and contribute to governance vulnerabilities.** Most cases processed by the courts in Armenia are related to debt enforcement/unpaid bills. Cases typically take a long time to process - in extreme cases up to 10-12 years - with poor judicial management of workload, time allocation, and resources. Moreover, recovery rates reportedly are low, which can impact access to credit (and thus investment and growth) and create governance vulnerabilities as parties attempt to influence the courts to speed up a case (or delay it), and steer outcomes. The efficiency of state bailiffs (who enforce court decisions) also seems to be an issue, in which the compensation system may be a factor. In many countries with public enforcement services (e.g. Germany, Sweden) bailiffs have a pay component based on a percentage of actual recovery as an incentive to chase down claims. This does not apply in Armenia. A further issue is that recovery is mostly physical (i.e. through the seizure and liquidation of physical assets through public auctions), a high-cost, inefficient process that is also vulnerable to fraud. In advanced economies where recovery is mostly through salary or bank account liquid recovery (garnishment or levy), enforcement is simple and a computerized process, with low transaction costs and high recovery rates. Since Armenia (according to reports) has a robust IT infrastructure, computerized processing of simple debt claims is an approach that could cut down

vulnerabilities to corruption and fraud, speed up the process and reduce court workload. New management structures in the courts system for ensuring higher performance accountability - both in speed and in substantive outcomes - are also long overdue.

**Table 2. Armenia: Corruption Cases Closed for Violating the SoL**

Year	Number of cases	Percentage of Prosecutions
<b>2016</b>	<b>15</b>	<b>30%</b>
<b>2017</b>	<b>7</b>	<b>9.7%</b>

Source: OECD, 2018 Anti-corruption reforms in Armenia, 4th round of monitoring of the Istanbul Anti-Corruption Action Plan

## Improving Statutory System

**19. Statute of limitations provisions could be hindering investigation and prosecution of corruption crimes.**<sup>7</sup> One important factor behind the high attrition rates within the enforcement of corruption cases is identified in the OECD's 2018 report and concerns Armenia's statute of limitations (SoLs), which forces the prosecution services to terminate many cases for running out the statutory clock. In fact, the IMF estimates such dismissals to be as high as 30 percent in some years (see table below). There is a problem with both the way in which SoLs function and their durations. In particular, the trigger based on "completion of the corrupt act" in Armenia can impact time available for effective enforcement and prosecution. Since corruption is typically a concealed crime, its discovery may occur well after the occurrence of the act, reducing the time available for enforcement and prosecution. In some complex corruption crimes, the overall SoL times specified in Armenian law are also simply too short. Depending on severity, Art.75 of the Criminal Code (CC) specifies that the SoL commences at the time the criminal offense is regarded as having occurred (see Annex 1, Table 1). Importantly, the SoL runs from the *completion* of the corrupt act until final appeals have been fully exhausted and is a straightforward time count that does not distinguish between the different phases of the criminal enforcement process. Unlike in some countries, Armenia does not have separate SoL time periods for investigation, prosecution, and adjudication stages, nor for the various stages in the court decision-making process (first instance, appeal, supreme court). Moreover, the SoL runs

<sup>7</sup> A statute of limitations is a law (or clause in a Code) which sets the maximum time in which parties involved must initiate (or complete) legal proceedings from the date of an alleged offense.

(continued)

uninterrupted without the possibility of suspension or other interim stops.<sup>8</sup> This creates incentives for suspects to be non-cooperative, even after they are in the criminal process, in an attempt to outrun the statutory clock.

**20. UNCAC and OECD conventions, to both of which Armenia is a signatory, provide for SoLs but with duration being a critical factor.** UNCAC suggests that the SoL needs to be “long” while the OECD specifies that their duration must be “adequate”.<sup>9</sup> In fact, durations of SoLs also forms part of the OECD and GRECO (Council of Europe) review process and are widely discussed in the literature.<sup>10</sup> The experiences of various countries with short duration SoLs are useful when it comes to highlighting problems for effective criminal enforcement.<sup>11</sup> If this is not addressed with the appropriate legal, policy and operational changes, the number of corruption cases stopped in Armenia for SoL reasons will increase in the mid-term with important implications to anti-corruption enforcement efforts:

- Already slow processing will result in a disproportionate number of corruption cases being dismissed/terminated due to SoL deadlines - even when cases may have substantive merit. A declining clearance rate and an increasing backlog of corruption cases in the courts is adding to that concern.
- SoLs are incentivizing suspects to delay corruption cases by refusing cooperation, applying for deferments or filing spurious appeals. Their sole objective is to outrun the SoL. This will continue to undermine the efficient and effective enforcement of corruption cases.
- Prosecution of high value cases have the greatest likelihood of being terminated early due to violation of SOL rules. These tend to be more complicated and involve more sophisticated perpetrators with most incentive to exhaust legal remedies. The failure rate, therefore, is – and will continue to be - disproportionately weighted towards high value and high-profile corruption cases.

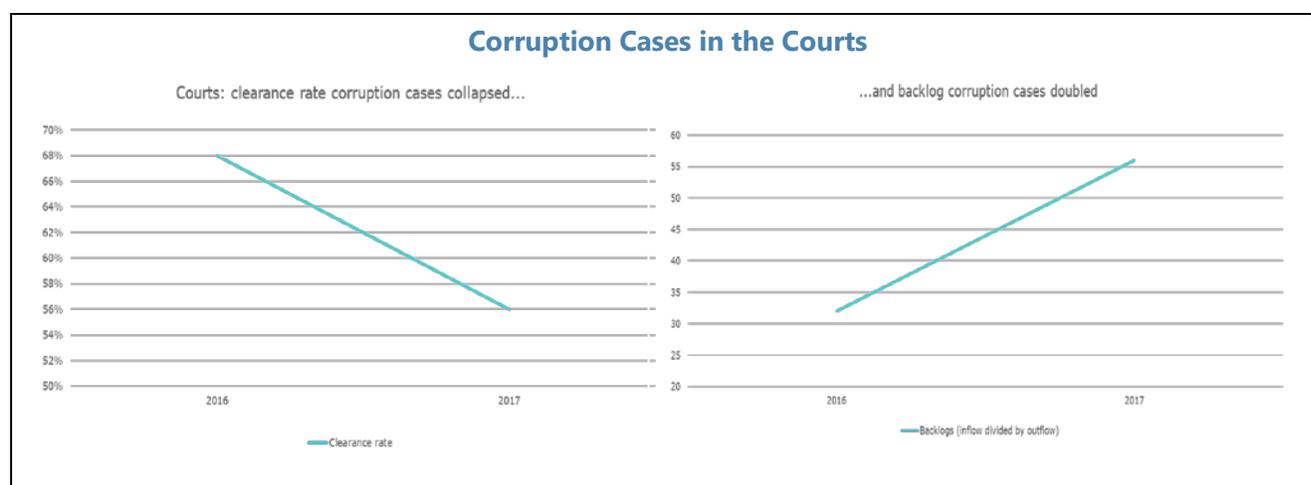
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<sup>8</sup> In most EU countries, the SoL runs until the decision of the first instance court when it either comes to an end or is suspended (e.g. Germany, Portugal). In Slovakia an appeal restarts the SoL from the beginning. In certain countries (e.g. Greece, Italy), the SoL runs until the court decision comes into force, and therefore covers the appellate, although this is a long period and cases are often dismissed for SoL reasons. Other countries (e.g. Rwanda) have taken an entirely different approach and declared statute of limitations not to be applicable to corruption offenses, and in Austria all offenses with severe penalties are exempted from SoL.

<sup>9</sup> Article 29 UNCAC: ‘[e]ach State Party shall, where appropriate, establish under its domestic law a long statute of limitations period in which to commence proceedings for any offence established in accordance with this Convention and establish a longer statute of limitations period or provide for the suspension of the statute of limitations where the alleged offender has evaded the administration of justice’. Article 6 OECD: ‘any statute of limitations applicable to the offence of bribery of a foreign public official shall allow an adequate period of time for the investigation and prosecution of the offence’.

<sup>10</sup> Transparency International, Timed out: statutes of limitations and prosecuting corruption in EU countries (2011).

<sup>11</sup> In the large Italian corruption trials of the 1990s (Tangentopoli), 49% of the acquittals occurred because of SoL (314 acquittals).



**21. Armenian law also restricts the criminality of certain corrupt acts to value thresholds.** The critical issue here is that the value thresholds are referenced in general terms only and are not clearly defined. For embezzlement, for example, the act is qualified as a criminal offense only if the property involved is of a “significant scale” defined in the law based on a certain exponential value of the minimum salary (Articles 179 and 175 Criminal Code). In cases of abuse of office, the act is qualified as a criminal offense only if this resulted in “essential damage” (Articles 308, 309, 375 and 214 Criminal Code), a term not explicitly defined in Armenian law.<sup>12</sup> Since what constitutes “significant scale” or “essential damages” are difficult to pin down, litigators have been forced to focus on non-pecuniary damages, such as moral damage including to organizations, violation of rights and freedoms and the degree of institutional disruption. In the assessment of observers, however, such litigation has failed to fully resolve the issue.<sup>13</sup>

**22. Value threshold restrictions in Armenia are viewed as not in line with UNCAC, which takes the approach that the criminality of corrupt acts should be ensured even if prosecution remains discretionary for acts resulting in limited damage.** As regards embezzlement, the interpretative note to Article 17 UNCAC states that the Article “is not intended to require the prosecution of *de minimis* offenses”.<sup>14</sup> This is generally understood to mean that the drafters call on states parties not to decriminalize *de minimis* acts, or explicitly exclude them from the legislative provisions. Instead, the drafters appear to have intended that prosecutors should apply their discretion to decide that some acts of embezzlement or misappropriation are too minor to merit enforcement action.<sup>15</sup> As far as

<sup>12</sup> See OECD (2018), Anti-Corruption Reforms in Armenia (4<sup>th</sup> Round of the Istanbul Anti-Corruption Action Plan), 2018, p. 121-123. The report cites an Armenian Constitutional Court decision on the Abuse of Office article, which is not deemed to have given satisfactory guidance on it.

<sup>13</sup> See OECD p. 123.

<sup>14</sup> UNCAC, Travaux Préparatoires Article 17, p.181.

<sup>15</sup> See also: C. Rose, M. Kubiciel and O. Landwehr (eds), *The United Nations Convention Against Corruption: A Commentary* (2019), p. 188.

(continued)

abuse of office is concerned, stipulation in the Armenian Criminal Code that “essential damage” has to accrue, in addition to suffering from the same definitional problem as embezzlement, is generally viewed as a “most significant deviation from the text of the Convention”. A broadly shared view (backed by international good practice) is that such clauses are a restriction of Article 19 UNCAC and should be eliminated.<sup>16</sup> Although it is reported that the qualifications for both clauses have been dropped in the draft Criminal Code that has been in development for several years, there is no indication that this will be passed anytime soon.

**23. International practice in relation to both Articles 17 and 19 of UNCAC is to qualify all corrupt acts of embezzlement and abuse of office as criminal regardless of the material impact of such acts.** The Fund follows the UNCAC recommendation made in the *travaux préparatoires* to Article 17 that it should be left to the prosecution to decide if acts are of such significance that they should be prosecuted. In line with country practice, the prosecution authorities may develop guidelines on these matters to ensure consistency in application and enhance legal certainty for the administration and society more generally.

## D. Conclusion

**24. It is widely acknowledged that Armenia has reached a watershed, one in which its government is invested with the political determination, public support and practical mechanisms required to achieve meaningful reform in the anti-corruption space.** Multiple stakeholders are looking to the incumbent administration to advance a progressive agenda that will address governance weaknesses and corruption at all levels. With ambitious plans currently under discussion and the elements needed for change present, it is now important that the entire public administration coalesce around plans that will require significant coordination and sequencing of efforts. Above all, in order to demonstrate to the citizenship that good governance is a key priority for Armenia, it is essential that this unique window of opportunity for reform is not lost.

**25. Against this background, in order to promote sustainable economic growth, it is critical that market and societal trust in government institutions is strengthened speedily.** To achieve this, the implementation gap which marked the decade of anti-corruption strategies and plans prior to the revolution should be closed with measures that are concrete and clear for all to see. The focus should be on four areas:

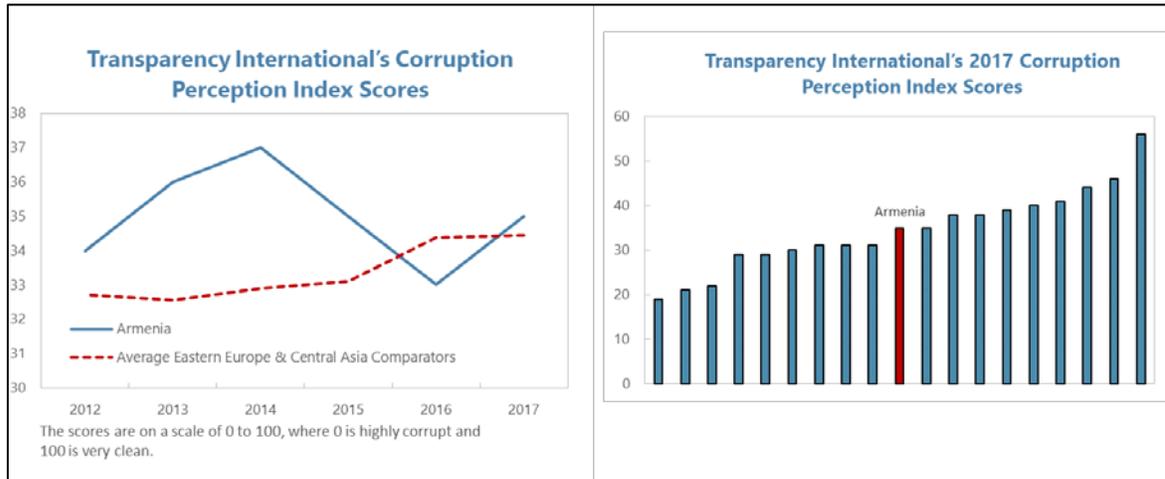
- With regard to asset declarations, immediate measures are required to ensure that the reporting system through 2018/2019 can continue uninterrupted, the verification process be affected through a newly-established CPC, and that the sanctioning mechanism is implemented through an effective application of notably illicit enrichment.

<sup>16</sup> UNODC, State of Implementation of the United Nations Convention against Corruption, p.42.

- On institutions, following up on prior commitments of this government, immediate measures should be taken to address the current fragmentation of investigations and weak specialization of prosecutions through the establishment of a single autonomous anti-corruption agency.
- On substantive law, measures should be directed to address key impediments to effective investigation and prosecution of corruption crimes, including by changing the terms of the Statute of Limitations and Value Thresholds for prosecution.
- On public accountability, steps should be taken to enhance performance transparency and accountability of anti-corruption institutions, including through a regular publication of key performance data.

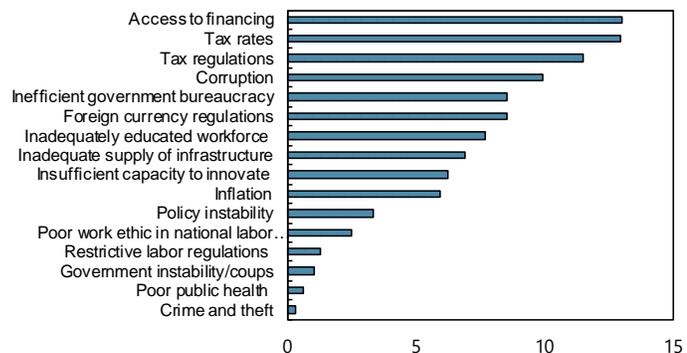
## Annex I. International Rankings of Governance in Armenia

1. **According to Transparency International’s Corruption Perception Index 2017**, Armenia scored 35 points out of 100. While this represents a small improvement over 2016, the score is, in fact, below those of 2013 and 2014.



- **Worldwide Governance Indicators 2017** Armenia’s rank for control of corruption is low. Although this rank has improved marginally in the most recent 10 years, it has remained lower than the average in the Europe and Central Asia country group and below the average for the countries with comparable levels of GDP per capita.
- **Global Competitiveness Report, 2017–18.** Business considers corruption to be one of the top five obstacles to doing business in Armenia.

Armenia: Most Problematic Factors for Doing Business (2017)



Source: The Global Competitiveness Report 2017.  
 Note: From the list of factors, respondents to the World Economic Forum’s Executive Opinion Survey were asked to select the five most problematic factors for doing business in their country and to rank them between 1 (most problematic) and 5. The score corresponds to the responses weighted according to their rankings.

**Figure 1. Armenia: Worldwide Governance Indicators**



Source: World Bank Worldwide Governance Indicators, 2018 update

Note: Percentile rank among all countries ranges from 0 (weakest governance) to 100 (strongest governance) rank.

**2. Doing Business report 2019**  
**Armenia is ranked as 41<sup>st</sup> out of 190 countries with no significant change compared to the 2017 report, albeit with some improvement since 2018.**

The weakest areas - dealing with construction permits, paying taxes and resolving insolvency – are those with highest corruption risks.

**Armenia: Rankings on Doing Business Topics, 2019**



**Table 1. Armenia: Asset Declarations and Outcomes**

<b>CEHRO proceedings for asset declaration violations</b>	
Failure to submit within deadline	256
False or incomplete data	151
Violation of submission procedures	2

<b>ARMENIA - Numbers of asset declarations 2017 and 2018</b>		
	<b>2017</b>	<b>2018</b>
Declarants	3198	3225
Related Persons Declared	7378	8469
Late declarations		2002
Failed to submit	2	144

<b>Outcomes of CEHRO proceedings</b>	
Warnings given	219
Fines	68
Proceedings cancelled	122
Proceeding suspended	8
Administrative acts annulled	2

**Table 2. Armenia: Armenia's Statute of Limitations**

<b>Limitation Periods</b>	<b>Corruption Crimes</b>
5 years	Article 179, para 2. point 1. Embezzlement or peculation committed by use of official position Article 200. Commercial bribe Article 201. Bribing of participants and organizers of professional sporting events and commercial competitions Article 308, para1. Abuse of office Article 311, para1. Receiving a bribe by an official Article 3111, para 1 and 2. Receiving unlawful remuneration from a public servant not considered as an official Article 3112, para 1 and 2. Passive trading in influence Article 312, para 1 and 2. Giving a bribe to an official Article 3121. Giving unlawful remuneration to a public servant not considered as an official Article 3122. Giving unlawful remuneration for using real or alleged influence Article 313. Mediation in bribery
10 years	Article 308, para 2. Abuse of office Article 311, para 2 and 3. Receiving a bribe by an official Article 3111, para 3 and 4. Receiving unlawful remuneration from a public servant not considered as an official Article 3112, para 3 and 4. Passive trading in influence Article 312, para 3. Giving a bribe to an official
15 years	Article 311, para 2. Receiving a bribe by an official (committed by an organized group, a judge or a particularly large-scale)

**Table 3. Armenia: Article 75****Article 75. Exemption from criminal liability as a result of expiry of the statute of limitation.**

1. The person is exempted from criminal liability, if the following periods of time have elapsed after the committal of the crime:

- 1) 2 years, since the day of committal of not grave crime;
- 2) 5 years, since the day of committal of medium-gravity crime;
- 3) 10 years, since the day of committal of grave crime;
- 4) 15 years, since the day of committal of particularly grave crime.

2. The prescription period is calculated from the day of committal to the moment when the sentence comes into legal force.

3. The prescription period is disrupted, if prior to the expiry of these period, the person commits a new medium gravity crime, grave crime or particularly grave crime. In this case the calculation of the prescription period begins from the moment of committal of the new crime.

4. The prescription period is suspended, if the person avoids investigation or trial. In this case the prescription period resumes from the moment of arrest or surrender. Particularly, the person cannot be subjected to criminal liability, if 10 years have elapsed since the day of committal of the not grave or medium-gravity crime, and 20 years have elapsed, in the case of a grave or particularly grave crime, and no the prescription period was not disrupted with new crimes.

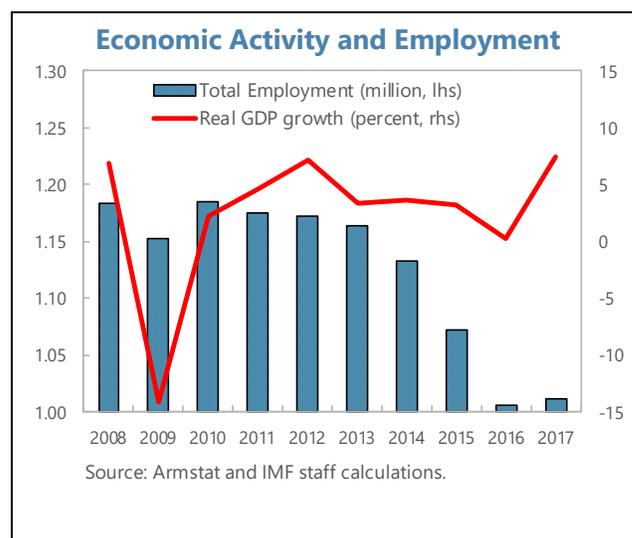
# ARMENIA'S LABOR MARKET AND EDUCATION SYSTEM<sup>1</sup>

*Education mismatch and skills shortages are among the key structural issues on the supply side of the labor market that weigh on labor productivity and growth and constrain job creation. Achieving sustainable and more inclusive growth requires reforming the education sector and strengthening active labor market policies. Elements of broader education reform include (1) improving early childhood education; (2) ensuring a high-quality, effective teaching force; (3) better aligning tertiary education with the labor market needs (4) enhancing education sector management and financial planning; and (5) reforming the TVET (Technical and Vocational Education and Training) system and supporting on-the-job training.*

## A. Context

### 1. The persistently high unemployment rate in Armenia remains one of the most pressing challenges facing policymakers.

Despite generally solid economic performance, Armenia has struggled to revive jobs growth following the 2008/9 global financial crisis. The recorded unemployment rate has hovered around 18 percent since 2009. The youth unemployment rate, at nearly double of the national average, is the highest in the CCA region. The issue of high unemployment is particularly acute for Armenia given the serious demographic challenges resulting from high emigration and shrinking and aging population, all of which negatively affect the size and age composition of the labor force and economic potential.



### 2. Declining employment during the recent years of relative macroeconomic stability suggest that demand-stimulating policies alone are unlikely to address high unemployment.

Real GDP growth averaged 4 percent over 2010–18. Total employment, however, contracted by about 15 percent against the traditionally positive relationship between growth and job creation, while the unemployment rate has changed very little because of shrinking labor force. Despite the replete pool of unemployed, businesses have been reporting labor shortages with relevant skills. This suggests that structural bottlenecks at the labor supply side hinder job placement and private sector job creation (Figure 1).

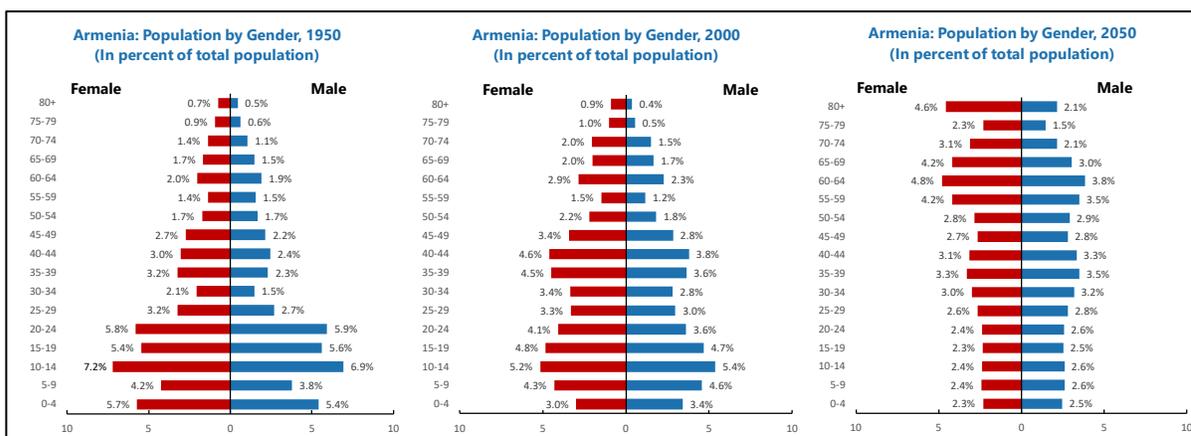
<sup>1</sup> Prepared by Yulia Ustyugova (IMF), Lire Ersado (World Bank), and Jouko Sarvi (Asian Development Bank).

**3. Education mismatch and skills shortages are among the key structural issues at the supply side of the labor market that weigh on labor productivity and growth.**

Labor productivity in Armenia has been lagging its peers, and labor productivity growth remains well below the pre-2008 levels (Figure 2). The major headwinds to higher labor productivity growth, according to the WB (2017), include inadequate education and training system and mismatches between workers’ qualifications and demand for skills. Those are intensified by population aging: research suggests that worker skills tend to increase until a certain age and then decline—with negative effects on innovation and productivity (Feyrer, 2009; Jones, 2010; Aksoy and others, 2015; Börsch-Supan and Weiss, 2016).

**4. This paper argues that achieving sustainable and more inclusive growth requires reforming the education sector and strengthening active labor market policies.**

The paper is structured as follows. Section II describes the main characteristics of Armenia’s labor market. Section III discussed Armenia’s education system. Section IV analyses some of the labor market constraints. Section V suggests reform areas. Section VI concludes.



**B. Labor Market**

Sources: United Nations, 2017.

**Demographic Trends and Labor Force (Figure 3 and 4)**

**5. Armenia’s population is aging and shrinking.**

The total population has declined from around 3.5 million people in 1990 to just under 3 million today due to low birthrates and emigration.<sup>2</sup> By 2050, it is projected to fall to 2.7 million. With increasing life expectancy, the elderly makes up a rising share of the population which leads to an eventual shrinkage of the working-age population. The working-age population<sup>3</sup> is projected to decrease by 8 percent by 2030 and 19 percent by 2050 from its current level as the younger generation will not be able to replace the retiring population (UN, 2017; Armstat, 2018).

<sup>2</sup> The country has undergone a significant decline in fertility rate, from about 4.5 children per woman in the 1950s to the present level of 1.7.

<sup>3</sup> Working age in Armenia is 15-63 years for which 63 is the pensionable age, but for data calculation purposes it includes ages 15-64.

**6. High levels of emigration exacerbate the demographic situation as many young Armenians leave the country in search of work and better opportunities elsewhere.** In 2014-17 the annual net emigration was 24 thousand people on average. The emigrants are mostly men with general secondary and specialized education.<sup>4</sup> The key factor behind migration is a lack of well-paying job opportunities. Job seeking is the main reason for migrating for more than 60 percent of household members of age 15 and above (Armstat, 2018b).

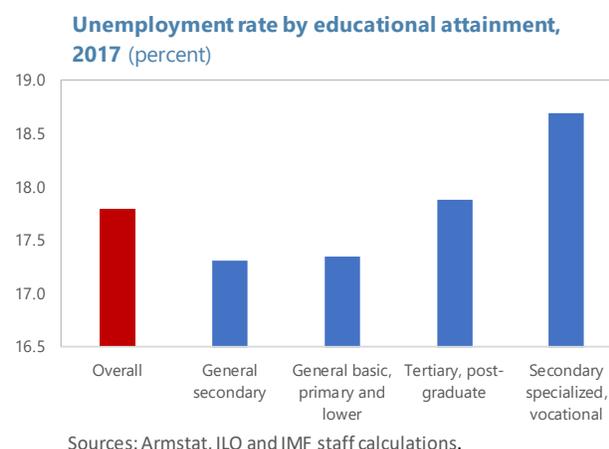
**7. The rapid decline in Armenia’s labor force poses a challenge to sustaining labor supply.** The labor force (or economically active population) saw a 13 percent decrease over the last decade, in line with the 15 percent drop in total labor resources of the country. The labor force participation rate<sup>5</sup>, which is generally in line with its peers, increased only marginally from 59.5 percent in 2008 to 60.9 percent in 2017 and fell short of compensating for the decline in labor supply.

**8. Armenia stands out with a high share of educated people in the labor force.** According to 2018 Global Competitiveness Report, Armenia compares well to the other countries in terms of “mean years of schooling”. The share of labor force with intermediate education is close to 70 percent, exceeding that of Georgia and other CCA countries. At the same time, a large share of women does not participate in the labor market, although women outpace men at nearly every level of education. While Armenia’s female labor force participation rate at 52.8 percent compares favorably with the average indicators globally and among the peers, there is an 18-percentage-point gap in male and female labor-force participation, suggesting that there is a significant potential economic contribution from women in Armenia that remains untapped (see *SIP Expanding Women’s Role in the Economy*).

### **Employment and Unemployment (Figure 5 and 6)**

**9. While the employment rate has remained generally unchanged during the recent years, the sectoral composition of jobs has shifted.**

Armenia’s share of employment in services has been rising. The services sector growth consistently outpaced the GDP growth in 2013-18 by about 2.3 percentage points, and now it employs about half of the labor force. Within the service sector, the information technology and high-technology sector has become one of the



<sup>4</sup> Migrants with general secondary, secondary specialized, tertiary (plus post graduate) and general basic education are 49.8, 23.9, 17.8 and 8.5 percent of migrants, respectively (International Organization for Migration, and National Statistical Service of the Republic of Armenia, 2014, p. 80).

<sup>5</sup> Labor force participation rate or economic activity rate is the share of economically active population in the total number of labor resources / working-age population.

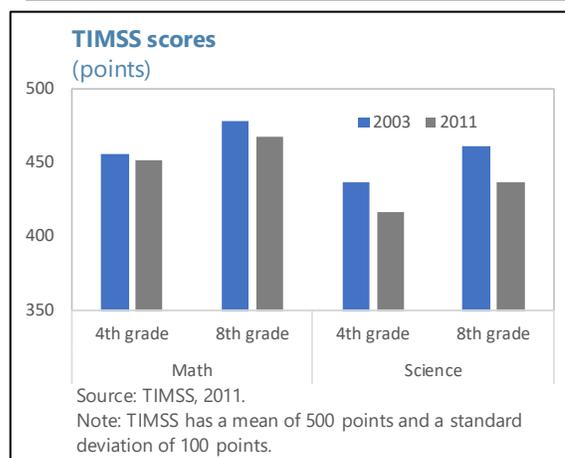
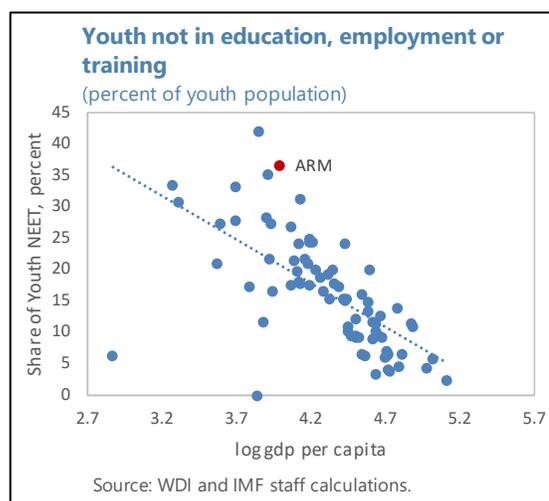
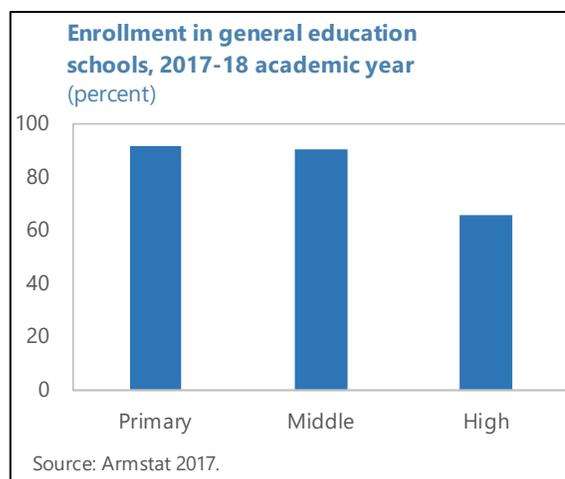
fastest growing sectors in Armenia fueling the demand for highly educated and skilled and technical workers. Gross production of information technology and high-technology sector increased on average by 20 percent in 2014-2018. The share of jobs in agriculture has been declining in line with developments among the peers. Still, the third of the jobs remains in agriculture which contributes only 17 percent of GDP, reflecting low average labor productivity. Following a burst in the construction bubble, the share of employed in construction decreased from 8.6 percent in 2008 to 3.6 in 2017.

**10. Unemployment rate in Armenia has been persistently high, particularly among the youth.** Youth unemployment rates remain above the 2008 levels with about 40 and 35 percent of those between ages 15-19 and ages 20-34 being unemployed, respectively. The unemployment rate is the highest among those with secondary, specialized and vocational education, but the traditionally positive unemployment gap between women and man has closed in 2016-17.

### C. Education System

**11. Public education in Armenia is free and compulsory until the age of 16, and school attendance has been relatively high.** Access to general education in Armenia is universal. Over the past four years gross enrollment in primary and middle schools has remained at about 90 percent, although it tends to drop to 65.5 percent at the high school level. About 16 percent of the high school age cohort enrolls in vocational schools.

**12. The dropout rates in high school and tertiary education levels, however, have been rising.** Poor students are more likely to drop out, mostly due to high costs and relatively low perceived returns on education (Armstat, 2018a). Students dropping out too early from formal education system seem to have low motivation to pursue other trainings available and face



challenges in securing employment: the share of youth neither in employment nor in education or training (NEET youth) in Armenia is high compared to the other countries.<sup>6</sup>

**13. The quality of secondary education in Armenia seems to have been deteriorating.**

The results from 2011 TIMSS (Trends in International Mathematics and Science Study), often used for international comparison for education outcomes, were lower than those in 2003 (Price-Rom, 2016) and demonstrated the learning outcome gap associated with the different family backgrounds and rural-urban divide. A large part of secondary school students seems to employ private tutors, often for two or more subjects (Bray and Lykins, 2012; UNDP, 2007).

**14. General education has been facing multiple efficiency and resource utilization challenges.**

The very low pupil-teacher ratio, at 9.6 on average in school year 2017-18, raises inefficiency concerns. There are also many schools with too few teachers to cover all subjects in the curriculum (Price-Rom and Atabekyan, 2017), which undermines the quality of education. Another challenge is related to the mechanism of financial incentives for teachers. Teachers' full workload is defined in Armenia as 22 hours of teaching per week, which makes teacher's profession a de facto part time profession. Furthermore, teachers' hourly salaries don't take into consideration the necessary duties performed by teachers outside lessons (duties such as preparation material for lessons, analysis of student test results, etc.) which in modern education systems are fully accepted as important part of teacher's workload (Price-Rom, 2016).

**15. Higher education subsector has been expanding rapidly, raising efficiency and complexity concerns and reinforcing the need to have a systemic approach to monitoring and management.**

In 2018 there were 53 higher education institutions (HEIs)<sup>7</sup> (27 public and 26 private) which is a very high number of HEIs for a country with a relatively small and decreasing population. According to the latest census (2011), 44 percent of the population aged 34 years and younger had a higher education degree. This is high in international comparison<sup>8</sup> especially considering that the state subsidizes only a fraction of the study places in public HEIs (the average subvention is about 20 percent of a HEI budget). Thus, public HEIs raise funding from private sources, and particularly by charging tuition fees (OECD, 2018b). To strengthen governance and oversight, it is important that the Ministry of Education and Science (MOES) improves its education management and information system (EMIS) to accurately and comprehensively capture real time data on the higher education system and on operations of individual HEIs.

**16. Higher education policy-making has been affected by a knotty regulatory set up.**

The MOES has regulatory and oversight responsibility for all HEIs under its jurisdiction. This includes e.g. approval of the educational standards of both public and private HEIs and the qualifications they deliver; and accreditation of HEIs and their programs. Separate bodies, delegated under MOES, are responsible for science and research policy, accreditation and

<sup>6</sup> ILO. ILOSTAT database. Data retrieved March 2019.

<sup>7</sup> HEIs provide three-tier degree programs, i.e. Bachelor's, Master's, and Candidate of Sciences (post-graduate, PhD equivalent).

<sup>8</sup> OECD average for the age group 25-34 was 43 percent in 2016; <https://data.oecd.org/eduatt/population-with-tertiary-education.htm>.

certification of doctoral degrees, and licensing HEIs to operate. In addition, the higher education landscape includes various national councils and consultative bodies. The set-up would benefit from more streamlined responsibilities of various players, as currently it contributes to fragmentation in higher education policy and implementation.

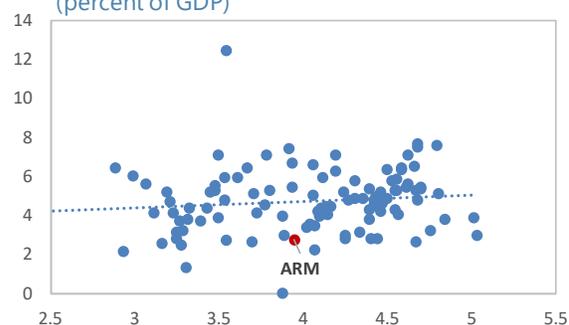
**17. Oversupply of graduates from humanities study programs is indicative of fragmentation in higher education policymaking and implementation.** In the academic year 2017-2018 the share of such graduates was 48 percent of all graduates in first degree programs (EV Consulting, 2019). There is a need to prioritize investments that improve the quality and delivery of cross-disciplinary study programs in higher education and particularly those related to science, technology, engineering, and mathematics (STEM) subjects. In the academic year 2017-2018 the share of graduates from STEM related first degree study programs was only 18 percent (EV Consulting, 2019).

**18. The current technical and vocational education and training system (TVET) is outdated to match labor market requirements.** The occupational standards and skills competencies in many skills areas remain poorly defined. Talented teachers see no professional future in TVET and students graduating from general education are not motivated to acquire vocational skills that do not improve employment prospects.

**19. Public expenditure on education has been modest.** MTEF 2019-21 envisages education expenditure at about 2.2 percent of GDP and 9.2 percent of total expenditures in 2020-21. This is lower than the 5 percent recommended by the OECD (OECD, 2018a) and the benchmarks proposed by The Global Education 2030 Framework for Action.<sup>9</sup> Moreover, over the last years, the spending envelope was often underutilized reflecting a slow progress in project implementation and low absorption capacity in the education sector.

The ongoing shift towards program budgeting has potential to improve planning and managing the delivery of education services by aligning expenditure allocations with specific and measurable targets for the medium term.

**Government expenditure on education, 2015**  
(percent of GDP)



Source: WDI and IMF staff calculations

<sup>9</sup> The Global Education 2030 Framework for Action proposes two benchmarks as 'crucial reference points': allocate at least 4 percent to 6 percent of GDP to education, and/or allocate at least 15 percent to 20 percent of public expenditure to education. <http://gem-report-2019.unesco.org/chapter/finance/>

## D. Labor Market Constraints

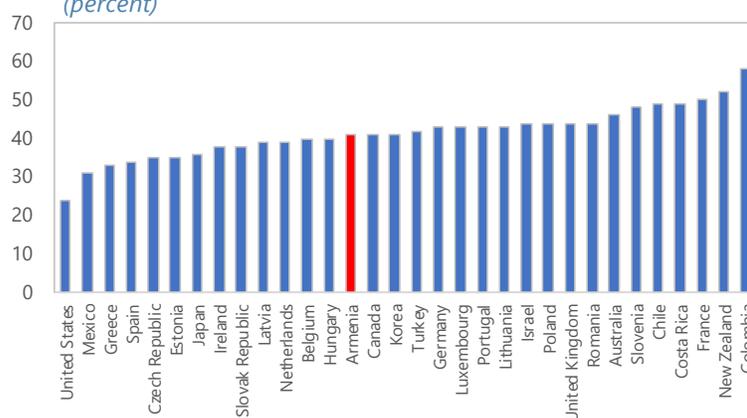
### *Labor Market Institutions*

**20. The existing labor market institutions are unlikely to hinder job creation.** There is no unemployment insurance in Armenia, which could lead to higher reservation wages and fuel longer periods of unemployment for benefit recipients. Armenia's statutory minimum wage is not high compared to other lower middle-income countries. And despite the common concern that minimum wage could discourage job creation among low-skilled workers leading to high unemployment among this group, unemployment is concentrated among those with secondary, specialized and vocational education and tertiary and post-graduate degrees.

**21. Active labor market programs have had limited coverage.** The role of Armenia's State Employment Agency (SEA) is to facilitate the best job-worker matches and help to reduce skills mismatches in line with the annual "State Employment Policy" approved by the Government. The SEA offers free of charge services both to jobseekers and employers.

Services to jobseekers include sharing information about vacancies and employment events, providing career guidance and professional orientation, providing mediation during job placement and arranging for vocational (re)training. Employers provide the SEA with information on vacancies and in turn could acquire information regarding labor market statistics, legislative changes and available vocational training programs. The SEA holds job fairs where employers can meet job seekers and arranges the training courses for the job seekers considering the employers' needs. The government also provides wage subsidies for vulnerable "non-competitive" segments of the labor force and assists them with launching a small business. In 2017, however, only around 1800 people have benefitted from the government's programs, which was less than a quarter of the target.

**Minimum wage relative to average wage, 2017**  
(percent)



Source: OECD and IMF staff calculations.

### *Educational Relevance and Skills' Mismatches of Armenia's Workforce*

**22. Education and skills' mismatches weigh on labor productivity and hinder job creation, particularly among more productive firms.** Literature suggests that higher skill and qualification mismatch is associated with lower labor productivity. (McGowan and Andrews, 2015), including through allocative inefficiencies. Skills mismatches are typical of transition economies, including Armenia (Kupets, 2015). This is because while transition economies undergo economic restructuring and structural transformation that requires new skills, their

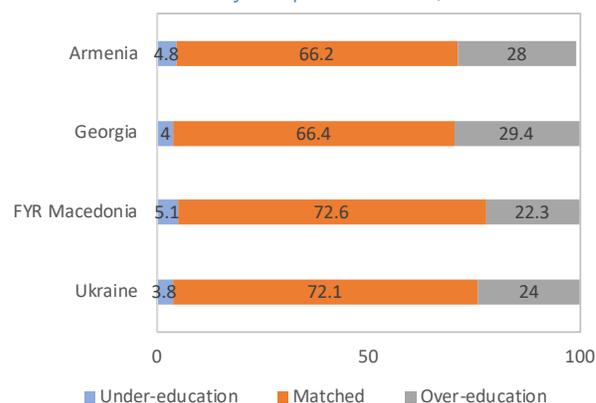
education systems are often lagging in meeting the demands of the labor market, and adult trainings systems are undeveloped. As a result, overeducation of workers coexists with skills shortages which slow the economies' transition to higher value-added activities.

**23. The micro data confirms significant education mismatch including due to job reallocation during the transition.**

According to the 2016 World Bank study using data from the *Skills Towards Employability and Productivity* (STEP) household surveys conducted in 12 countries, education mismatch is high in transition economies of the region overall and in Armenia in particular (Handel, Valerio and Sanchez Puerta, 2016). In Armenia, only 66.2 percent of workers' jobs require education that match their own. About 5 percent of workers report to be under-educated for jobs, while 28 percent are over-educated. This rate of over-education is similar to Georgia, but higher than in other comparator countries. Over-education is the highest for older workers aged 50-64 (34 percent), and among those with secondary specialized education (vocational) gained during the Soviet era (56 percent). Kupets, 2015 explains that "during economic restructuring, as jobs shifted from industry to services, many displaced workers with industry related degrees were forced to accept lower-level jobs in other sectors that did not require specific training and skills or for which retraining did not take a lot of time and effort". As a result, workers with a degree in engineering, manufacturing or construction account for a significantly larger share of overeducated workers.

**Education mismatch**

(individual (actual) match rates between worker education and job required education)



Source: Handel, Valerio and Sanchez Puerta (2016). Estimates based on STEP household surveys of working-age adults (ages 15-64) residing in urban areas.

**24. Distortions in the education system also contribute to skills mismatch.** This is particularly visible in the fast-growing IT and high-tech sectors, which report up to 4000 vacancies that they are struggling to fill in the context of the youth unemployment rate – an indicator of how well the education system prepared the youth for the labor market - exceeding 30 percent.<sup>10</sup> In 2017-18 the number of graduates from all STEM related first degree study programs was around 3200 (18 percent of all graduates), although the share of STEM has recently started growing. The size of similar programs within vocational education and training has also been small presenting a missed opportunity for creating skills demanded by the market.

**25. Inadequate quality of acquired skills is another factor exacerbating the skill mismatch and weighing on firm performance, investments, and competitiveness.** According to 2018 Global Competitiveness Report, Armenia has got relatively low scores on "skillset of

<sup>10</sup> The average growth in 2013-2018 for "Computer programming, consultancy and related activities, Information service activities" was 27 percent which was significantly higher than 3.8 percent GDP growth in 2013-2018. The share of "Computer programming, consultancy and related activities, Information service activities" in GDP increased twice from 0.5 percent in 2013 to 1.1 percent in 2018.

graduates” and “extent of staff training”, and most firms in WB Armenia Employer STEP Survey 2013 claim that the technical and vocational education does not produce practical skills (76 percent of firms), updated knowledge (70 percent) and the level and kinds of skills needed (around 65 percent) which is a major obstacle to firms’ growth and competitiveness (Rutkowski, 2013).

## E. Reform Areas

### 26. Addressing qualification mismatches and skills shortages to promote higher sustainable more inclusive growth requires policy and reform efforts on multiple fronts.

Those include strengthening education system, modernizing the TVET as an important component of the workforce development system, while bolstering active labor market policies. Increasing the quality of existing workforce is essential for Armenia not only for boosting private sector and competitiveness, but also promoting more equitable access to better jobs, bolstering inclusive growth and reducing poverty.

### 27. Reforms to ensure that the education system provides skills that are relevant to the labor market include:

- **Expanding the provision of quality preschool education.** Evidence suggests that participation in early childhood education (ECE) programs is positively correlated with the development of cognitive and socio-emotional skills, which are associated with better labor market outcomes later in adulthood. In Armenia, a focus should be on expanding the provision of quality preschool education for children under 3 and in rural communities. Policies and strategies are needed to define central and local government roles and responsibilities in terms of setting standards, financing, and providing services, as well as monitoring and evaluating performance of ECE service provision. Facilitating access to early childhood education system by socioeconomically disadvantaged households would also promote inclusive growth.
- **Ensuring a high-quality effective teaching force.** The government has been pursuing initiatives to upgrade teacher education by improving the general structure of pre-service teacher education and enhancing in-service training of practicing teachers. Nonetheless, a comprehensive teacher education reform is needed, that would include upgrading teacher education policy and regulations, institutional capacities, teacher education systems as well as programs delivery. Such a reform will help modernize the teaching practice, improve the status of teacher education, and help raise the quality of education in schools. Related to the latter, regular participation in international assessments of education achievement would allow using the findings to inform education policymaking.
- **Ensuring that all students learn.** It is important that the education system narrows the learning outcome and skills gap associated with the different family backgrounds and rural-urban divide by supporting those who lag behind.

- **Better aligning tertiary education with the labor market’s need for a skilled and innovative labor force, not only as employees, but also as entrepreneurs.** Recognizing the growing importance of jobs in certain STEM fields, the education system should promote students’ learning and performance in STEM subjects. Also, embedding the objective of fostering entrepreneurship into education and training courses, including at the tertiary level, will help equip the students with knowledge, skills and attitudes that are important for raising the survival rates of the start-ups. Stimulating entrepreneurship could be instrumental for creating more job opportunities, especially in remote areas.
- **Enhancing education sector management and financial planning.** This will help tackle multiple efficiency challenges and ensure sustainability of the whole reform package. Considering the structure of network of schools, number of schools, their location, and the size and deployment of teaching force should be an important component of the reform agenda. From the perspective of improving access to education in remote areas, introducing hub-and-satellite schools, multi-grade teaching, and training teachers to teach multiple disciplines should be considered. Priorities also include strengthening education management information system (EMIS), including its capacity to provide adequate and timely information on financial management and use of resources at various levels of the sector. In this regard, the authorities’ concerted efforts to operationalize the tertiary education management information system in the short term are very timely.

**28. It is important to modernize the TVET to make it a well-functioning component of the entire workforce development system.** The TVET system requires higher standardization and better integration with the labor market not only at national level but also by setting priorities for skills development in regions. Related to this, the TVET system would benefit from structural alignment of initial and further vocational training programs and more streamlined study pathways for students to progress upwards in TVET ladder. There is also a need to consolidate the network vocational education institutions to increase cost efficiency and to modernize facilities, equipment and programs, possibly through closer cooperation with private sector. So far, these efforts have been limited to externally funded project-based approaches with few selected industries. It will be important to build on these lessons and develop and institutionalize a comprehensive reform of the whole TVET system. The MOES aspiration to align TVET and higher education with EU standards has led to initial collaboration with the European Training Foundation in TVET and to the aim to link with the TVET Bologna process in higher education development. However, both these initiatives are at early stages and require more sustained effort and external support to help develop and implement appropriate mechanism for governance and monitoring, upgrade the programs and training facilities, and eventually institutionalize the frameworks in the country.

**29. Bolstering active labor market policies is another priority reform area for improving the matching of workers to jobs.** Recognizing the need for action, the authorities have already started developing a comprehensive employment strategy for 2019-23 aimed at tackling high levels of unemployment of structural character and among the youth by leveraging proactive

and mutually beneficial cooperation with employers. Improving the matching of workers to jobs will likely require strengthening the SEA's capacity to serve a larger number of clients and seeking ways to raise its effectiveness given resource constraints. In this regard, there is a need to enhance SEA's integrated information systems and analytical tools that could help provide more targeted services to those who are more likely to need them while considering local labor demands. Targeted activation policies will be particularly beneficial for low-income groups, including social assistance beneficiaries, thus contributing to growth inclusiveness.

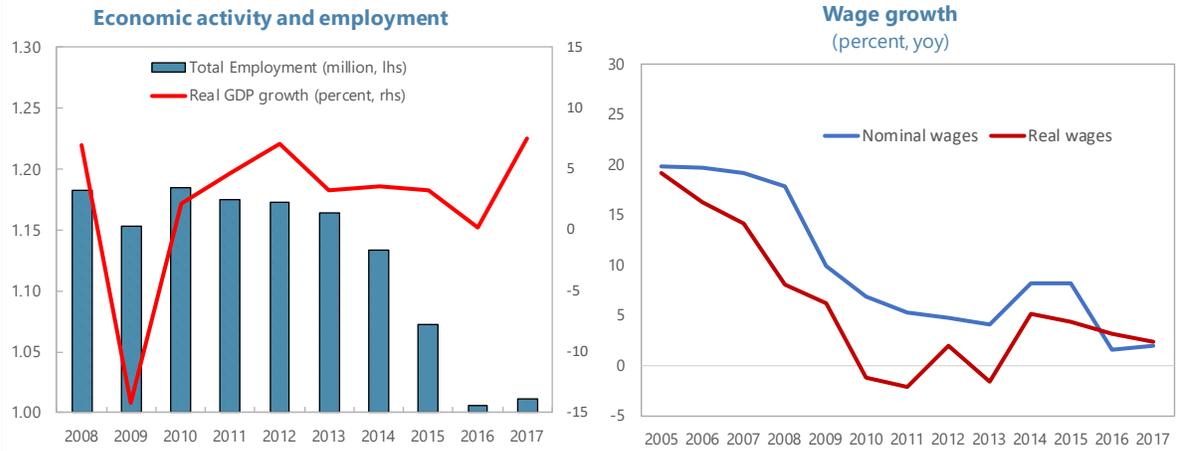
## F. Conclusion

**30. Achieving sustainable and more inclusive growth requires reforming the education sector and strengthening active labor market policies.** Elements of broader education reform include (1) improving early childhood education; (2) ensuring a high-quality, effective teaching force; (3) better aligning tertiary education with the labor market needs (4) enhancing education sector management and financial planning; (5) reforming the TVET system and supporting on-the-job training. Bolstering active labor market policies is another priority reform area for improving the matching of workers to jobs.

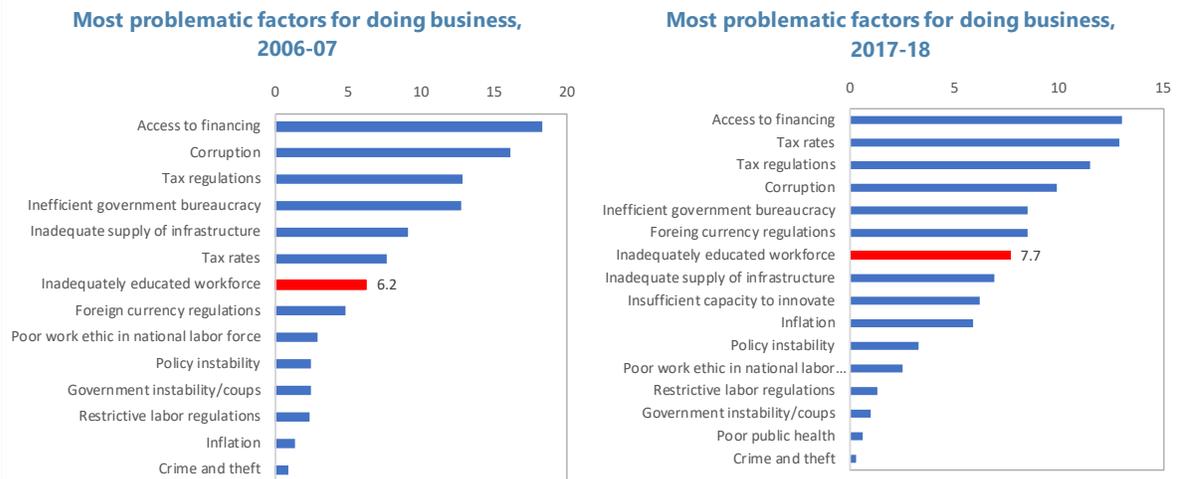
**Figure 1. Armenia: Labor Demand**

Despite the recent years of relative macroeconomic stability, the level of employment has declined.

Moderate wage growth has been indicative of contained labor market pressure.



More businesses have been reporting labor shortages due to inadequate education among most problematic factors for doing business.



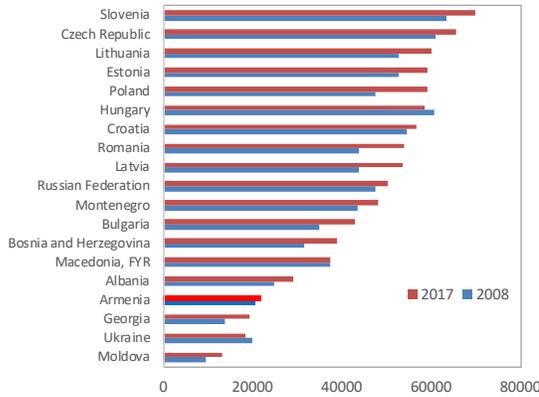
Sources: Armstat, World Economic Forum, Global Competitiveness Report 2006–07 and 2017–18.

**Figure 2. Armenia: Labor Productivity**

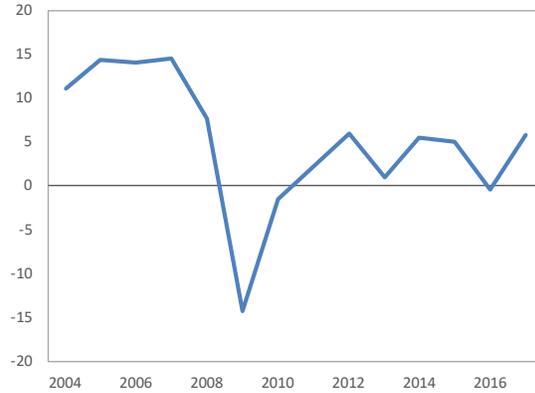
*Labor productivity in Armenia has been lagging its peers.*

*Labor productivity growth has somewhat recovered after the 2008 crisis...*

**Labor productivity, 2008 and 2017**  
(GDP per person employed, 2011 PPP\$)



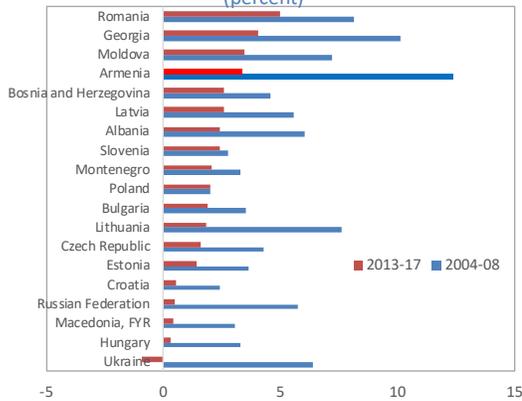
**Labor productivity growth**  
(percent)



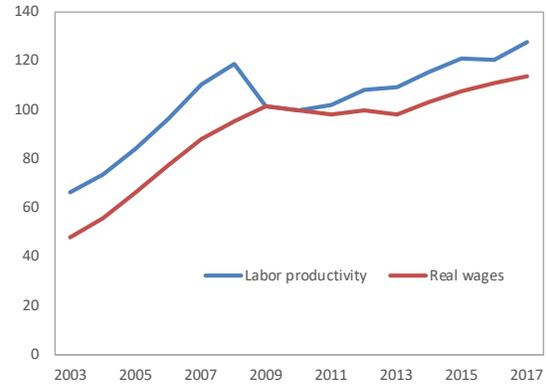
*but remains well below the pre-crisis levels like in many peers.*

*Post-crisis productivity occasionally outpaces real wages helping Armenia maintain competitiveness.*

**Labor productivity growth**  
(percent)



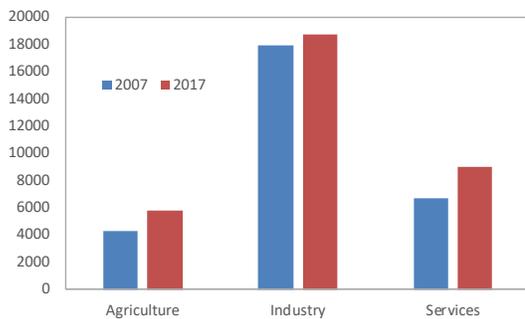
**Labor productivity and real wages**  
(index, 2010=100)



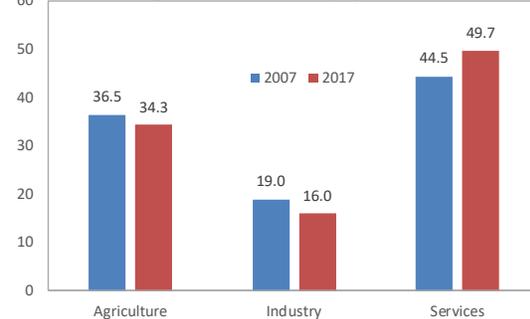
*Labor productivity in industry continues to exceed that in agriculture threefold,...*

*but the share of employment in industry has declined, while more than 30 percent of the jobs remain in agriculture.*

**Labor productivity by sector**  
(constant 2010 US\$)



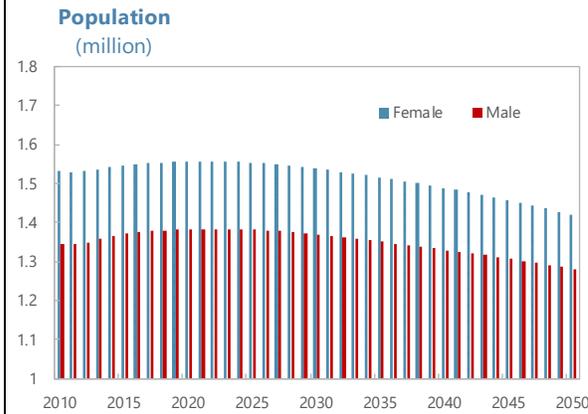
**Sectoral share of employment**  
(percent of total employment)



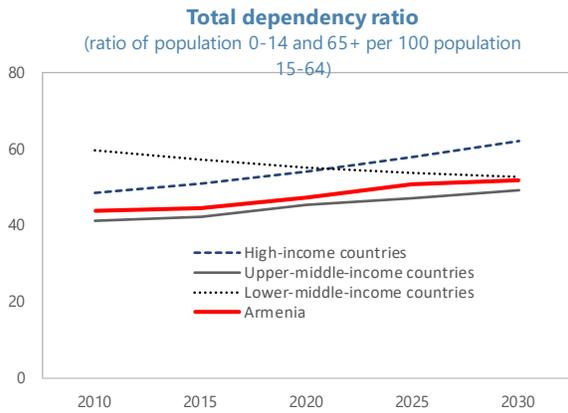
Source: World Development Indicators.

**Figure 3. Armenia: Population and Emigration**

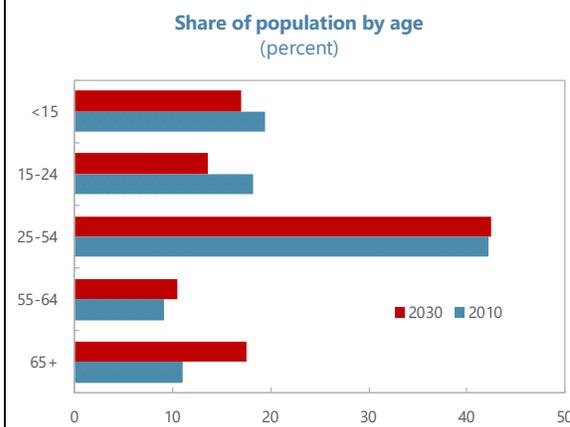
Armenia's population is expected to decline.



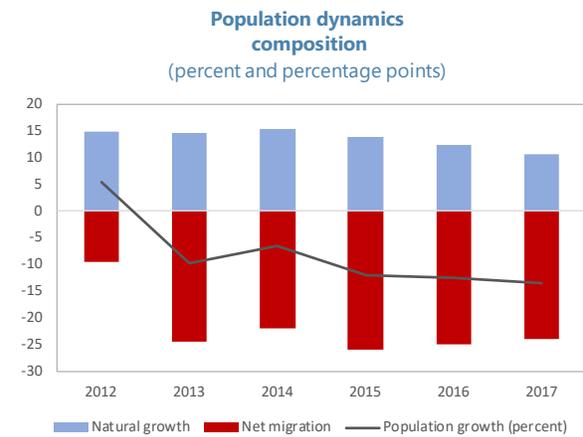
Dependency ratio is projected to increase...



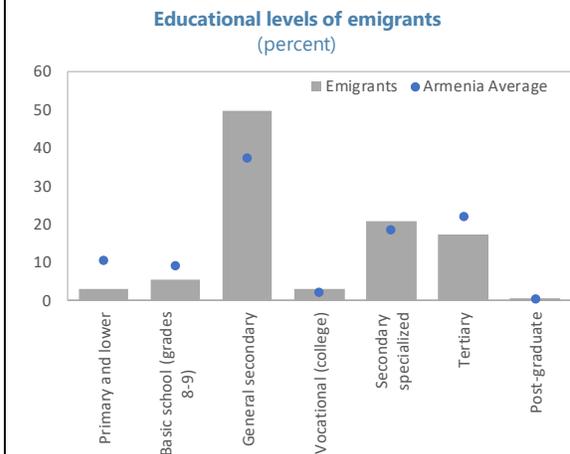
... as Armenia population becomes older.



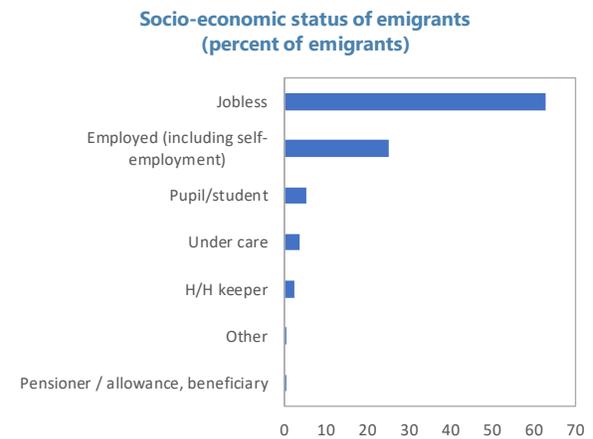
Emigration has been a driving force of declining population in Armenia.



Intermediate educated individuals have a higher probability to migrate abroad



Lack of job opportunities is the main cause of modern migration from Armenia.

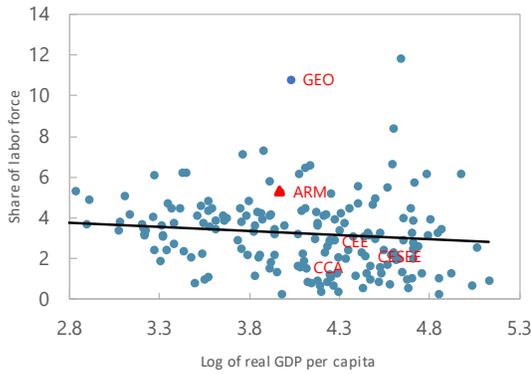


Sources: ILO, Armstat and IMF staff calculations.

**Figure 4. Armenia: Labor Force**

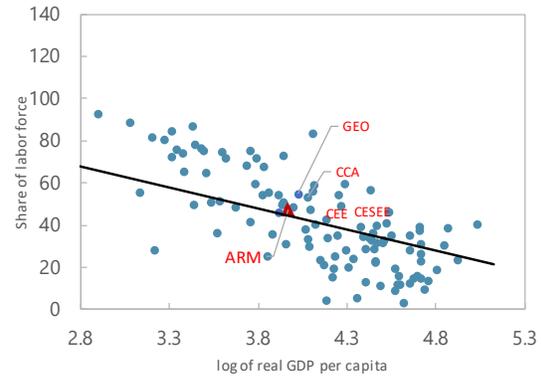
Armenia's labor force has a relatively high share of older population...

**Share of labor force: aged 65 +**  
(percent)



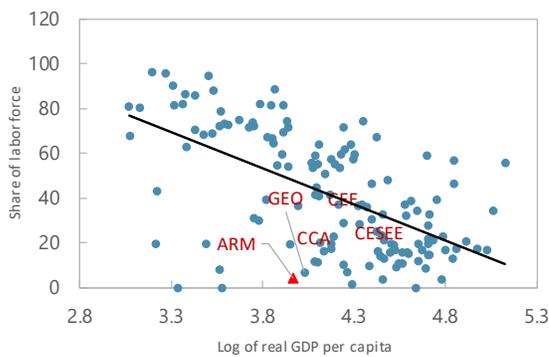
... with the level of urbanization consistent with Armenia's level of development.

**Share of labor force: rural areas**  
(percent)



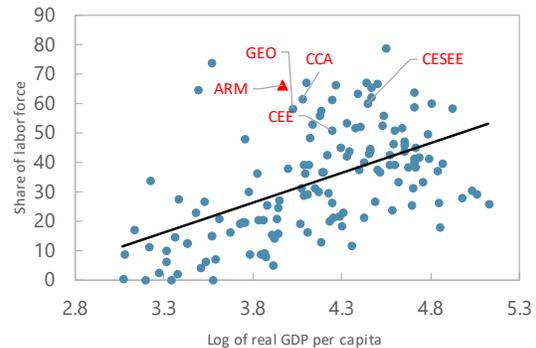
A very low share of the Armenian labor force has received only basic education or less...

**Share of labor force: basic education**  
(percent)



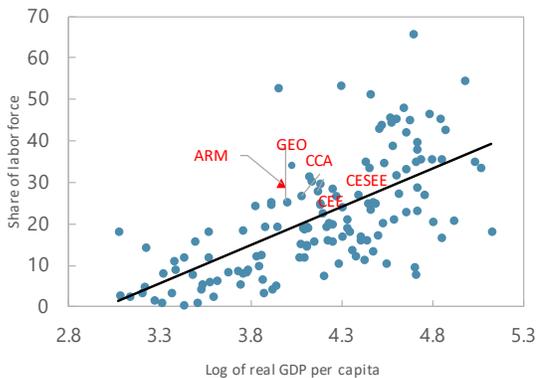
... as the majority of the labor force has intermediate education.

**Share of labor force: intermediate education**  
(percent)



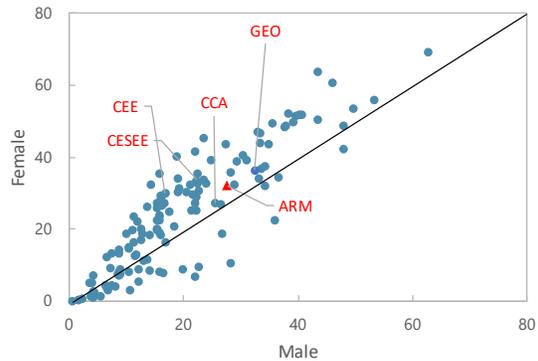
Almost every third in Armenia has received advanced education.

**Share of labor force: advanced education**  
(percent)



A higher share of women has received advanced education.

**Share of female/male labor force with advanced education**  
(percent)

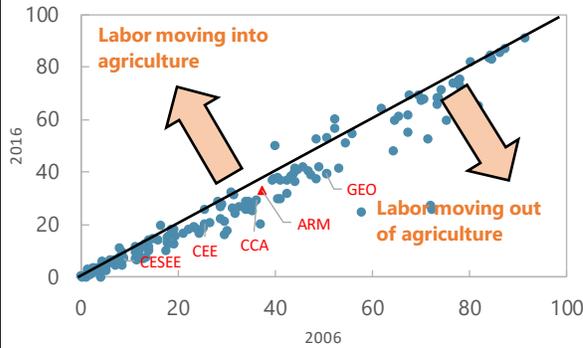


Sources: ILO, Armstat and IMF staff calculations. Log of real GDP per capita is the 2012–16 average of real GDP per capita (PPP 2011 international dollars). Latest available data.

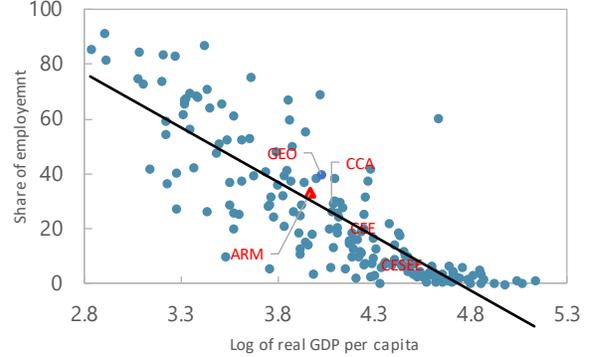
**Figure 5. Armenia: Employment**

*Labor in Armenia has been moving out of agriculture...*

**Share of employment in agriculture**  
2006 vs 2016 (percent)

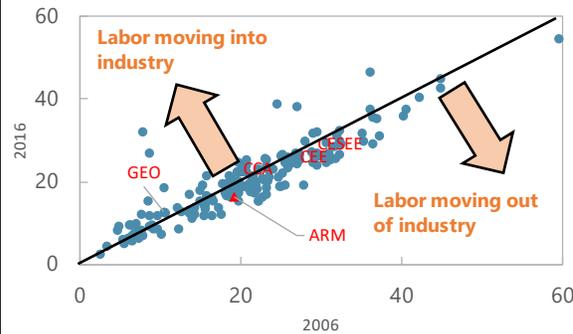


**Share of employment in agriculture**  
(percent)



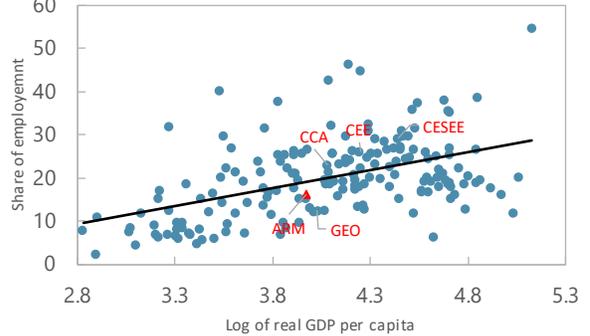
*... and industry.*

**Share of employment in industry**  
2006 vs 2016 (percent)



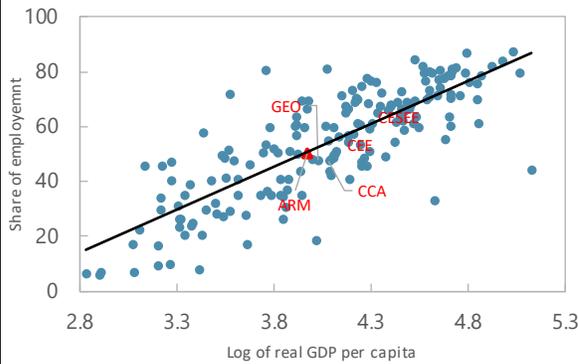
*Armenia's share of employment in industry is somewhat below its peers*

**Share of employment in industry**  
(percent)



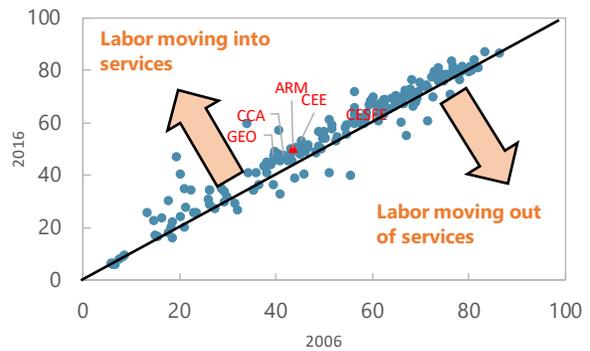
*Armenia's share of employment in services has reached averages...*

**Share of employment in services**  
(percent)



*...after some gains in the last decade.*

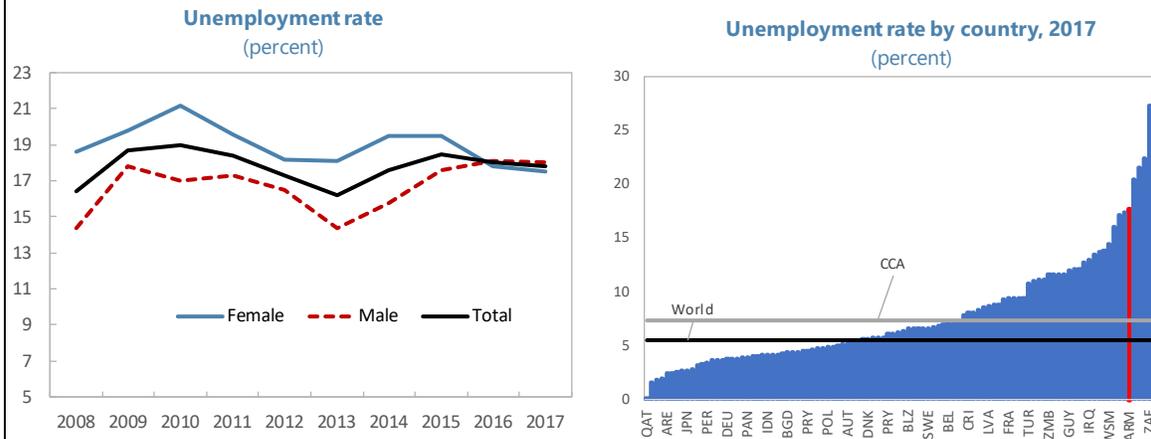
**Share of employment in services**  
2006 vs 2016 (percent)



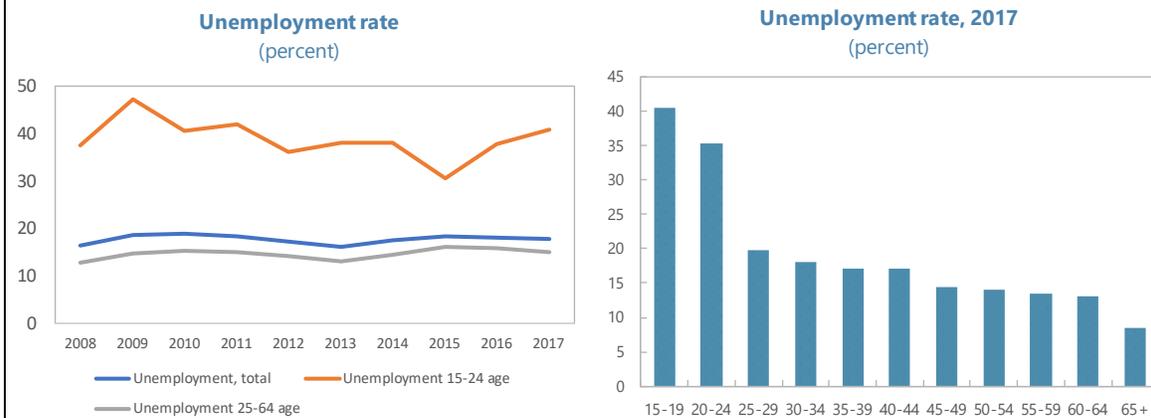
Sources: ILO, Armstat and IMF staff calculations. Log of real GDP per capita is the 2012–16 average of real GDP per capita (PPP 2011 international dollars). Latest available data.

**Figure 6. Armenia: Unemployment**

Armenia's unemployment rate remains high despite recent decline. It significantly exceeds the world average.

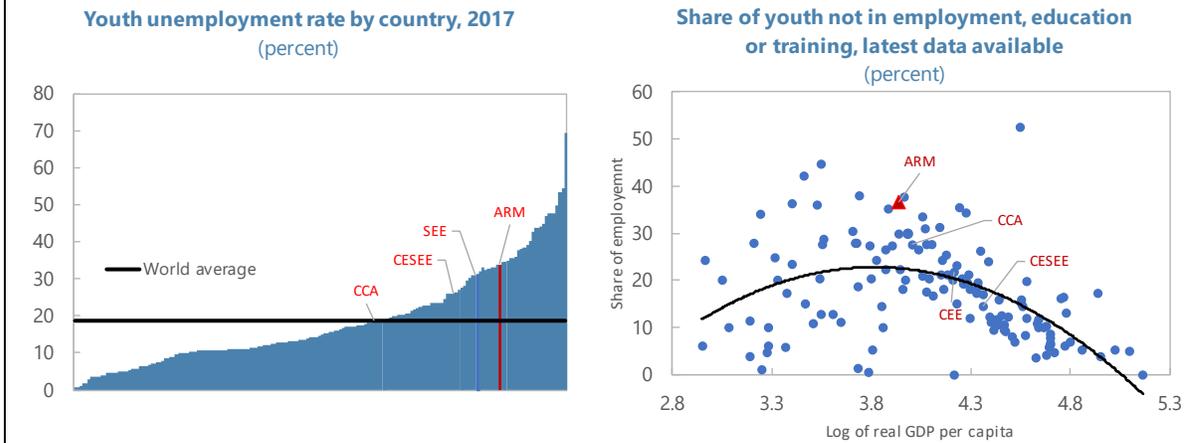


Youth unemployment rate has been twice as high as unemployment among the rest of the labor force.



Armenia's youth unemployment rates is the highest among the CCA.

Armenia's share of youth NEET is particularly concerning given adverse demographics.



Sources: Armstat, ILO and IMF staff calculations.

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