

# EXPONENTIAL GROWTH

Reading time ~ 3 min.

Exponential growth means if Armenia's GDP per capita grows at about 10% per year, it will rise from \$4,000 in 2020 to more than \$20,000 in 2041. For various scenarios of GDP and population growth, see Tables 1 and 2 below.

**Table 1. GDP Scenarios for 2041**

	GDP Scenarios for 2041			
Population growth rate	1%	2%	3%	4%
Population by 2041	3,660,570	4,457,842	5,418,334	6,573,369
Productivity growth rate				
3%	\$24,102,354,573	\$29,186,274,757	\$35,278,490,194	\$42,566,529,087
4%	\$29,186,274,757	\$35,278,490,194	\$42,566,529,087	\$51,270,528,582
5%	\$35,278,490,194	\$42,566,529,087	\$51,270,528,582	\$61,648,518,446
6%	\$42,566,529,087	\$51,270,528,582	\$61,648,518,446	\$74,002,499,443
7%	\$51,270,528,582	\$61,648,518,446	\$74,002,499,443	\$88,685,426,897
8%	\$61,648,518,446	\$74,002,499,443	\$88,685,426,897	\$106,109,224,026
9%	\$74,002,499,443	\$88,685,426,897	\$106,109,224,026	\$126,753,965,412
10%	\$88,685,426,897	\$106,109,224,026	\$126,753,965,412	\$151,178,388,590



Table 2. GDP per capita Scenarios for 2041

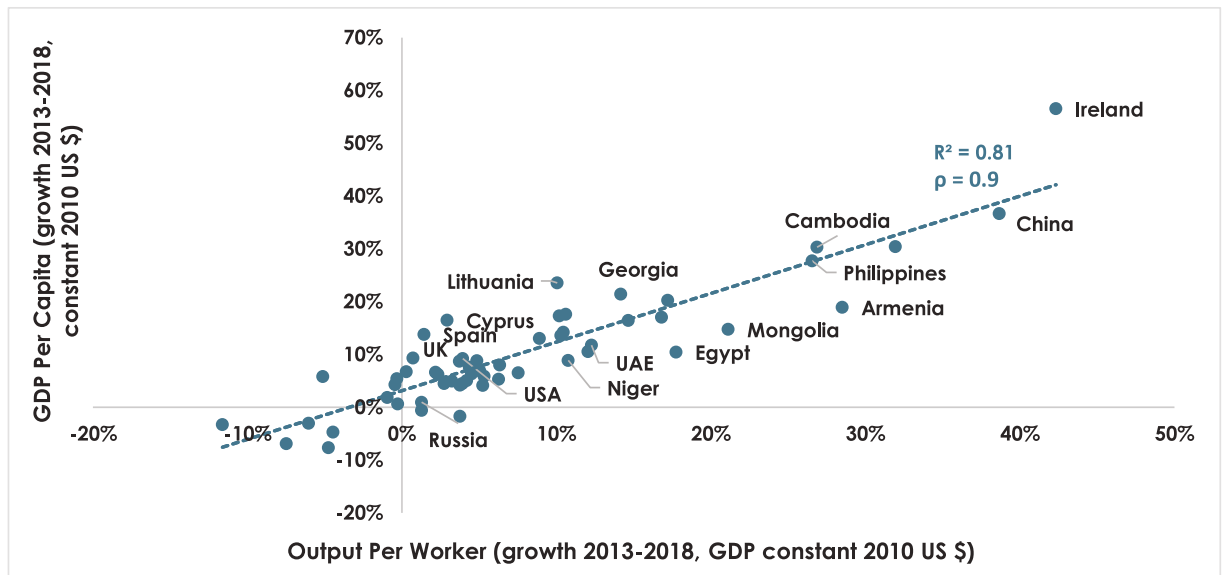
	GDP per capita Scenarios for 2041			
Population growth rate	1%	2%	3%	4%
Population by 2041	3,660,570	4,457,842	5,418,334	6,573,369
Productivity growth rate				
3%	\$6,584	\$6,547	\$6,511	\$6,476
4%	\$7,973	\$7,914	\$7,856	\$7,800
5%	\$9,637	\$9,549	\$9,462	\$9,379
6%	\$11,628	\$11,501	\$11,378	\$11,258
7%	\$14,006	\$13,829	\$13,658	\$13,492
8%	\$16,841	\$16,601	\$16,368	\$16,142
9%	\$20,216	\$19,894	\$19,583	\$19,283
10%	\$24,227	\$23,803	\$23,394	\$22,999

Any economy in the world has a potential (or a maximum) growth rate. This potential growth rate consists of only three components: Population, Capital and Productivity.

Let's say country A grows at 3.0% per year, as measured by its GDP. If the population of that country also grows by 3% per year, then that country's GDP per capita or income per capita is stagnant (0.00%).

When we are talking about productivity, there is no need to look at specific measures of productivity such as output per worker, because as shown in the Chart 1 GDP per capita growth is highly correlated with productivity growth, which means whenever we want to measure PG (productivity growth) we can simply look at GDP per capita growth over a period, usually between 5 and 15 years.

Chart 1: GDP Per Capita Growth is an Alternative Measure of Productivity Growth

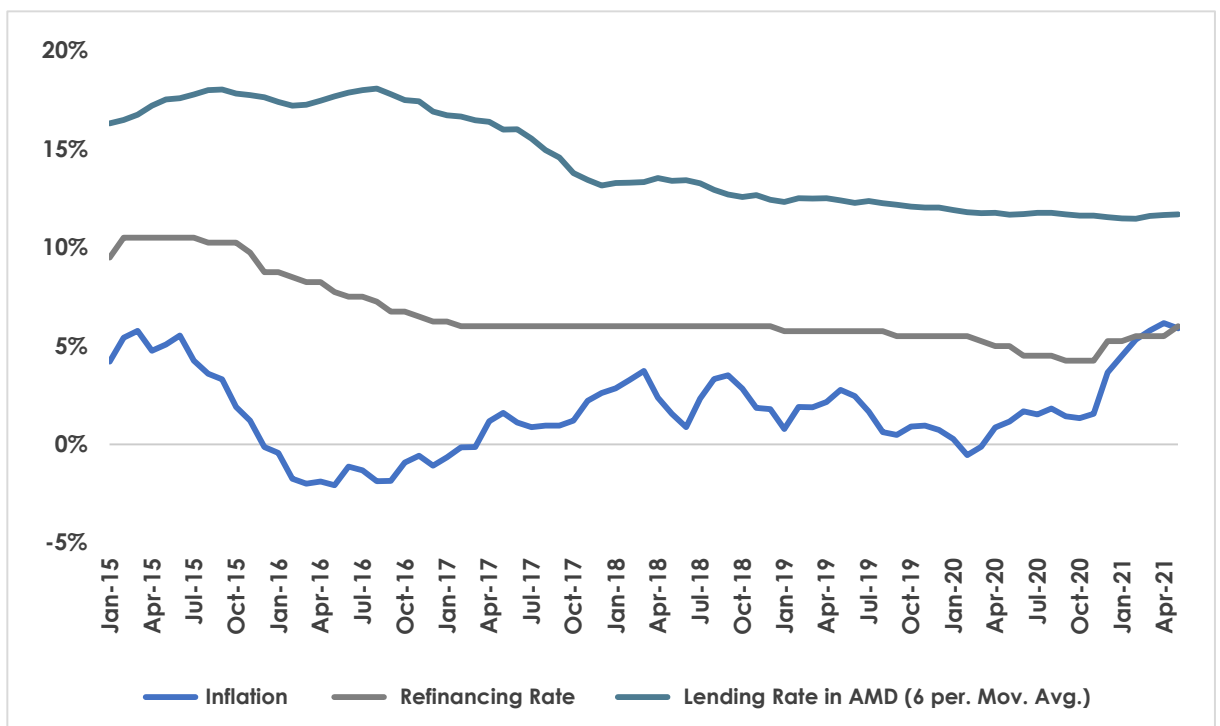


Source: World Bank, International Labour Organization

There are several actions Armenia could take to have exponential growth:

- Creating explosive growth in Armenia is relatively simple because Armenia's GDP per capita is still low (at around \$4,000). Rising from the bottom is easier, by simply copying best practices of other countries.
- Monetary policy is one of the most invisible yet powerful forces in economic prosperity. As shown in Chart 2, Armenia's interest rates are too restrictive and are suffocating economic growth. The central bank plays an important role and can intervene to lower interest rates.

Chart 2: Inflation, Refinancing Rate, and Lending Rate



Source: Central Bank of Armenia

- Fiscal policy - another very powerful tool at the government's disposal. Armenia's government could use various Public-Private-Partnership mechanisms and tools to launch innovative and creative projects.

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