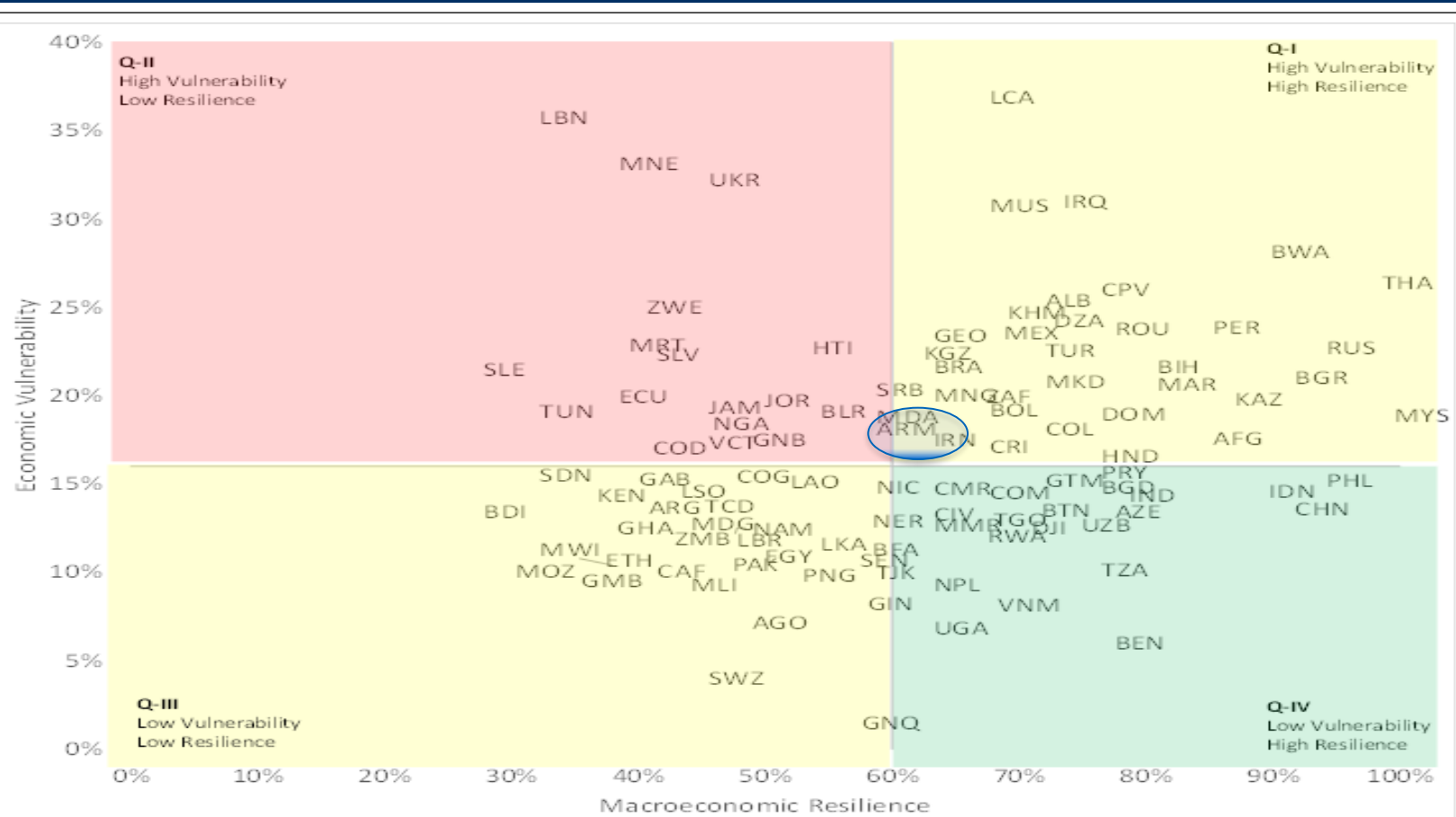# THE IMMEDIATE IMPACT OF COVID-19 ON THE ARMENIAN ECONOMY

June 2020

Fiscal Accountability and Sustainable Trade (FAST)

Final draft for discussion

THE IMMEDIATE IMPACT OF COVID-19 ON THE ARMENIAN ECONOMY

Fiscal Accountability and Sustainable Trade (FAST)

Program title:	Fiscal Accountability and Sustainable Trade
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Date of submission:	June 2020

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Acknowledgments

Acronyms

ADM	Armenian Dram
ASM	Autonomous Spending Multiplier
CBA	Central Bank of Armenia
COVID-19	Corona Virus Disease 19
CTD	Collecting Taxes Database
EIU	Economist Intelligence Unit
FAST	Fiscal Accountability and Sustainable Trade
FTE	Full Time Equivalent
GDPfc	Gross Domestic Product at factor cost
GDPmp	Gross Domestic Product at market prices
GFC	Global Financial Crisis
IMF	International Monetary Fund
NO2	Nitrogen dioxide
PPG	Public and Publicly-Guaranteed

THE IMMEDIATE IMPACT OF COVID-19 ON THE ARMENIAN ECONOMY

USAID FAST

June 2020

Introduction

This report presents the immediate impact of COVID-19-related shutdowns in Armenia in terms of overall output, employment of men and women, and poverty. It also includes information about Armenia's macroeconomic resilience and its ability to respond after the crisis with respect to risks of creating macroeconomic instability such as rapid inflation, unsustainable fiscal deficits, or precipitous depreciation of currency. This information will inform leaders in the U.S. Agency for International Development (USAID) and enable them to anticipate major events that may affect the welfare and development of this partner country. The detailed methodological information for the calculations and meaning of macroeconomic resilience are the subject of a different document. The second part of this report explains the concepts, methods, and sources for the COVID-19 Economic Impact Model used in this analysis.

The Model provides an estimate of the magnitude of the immediate economic impact of COVID-19 during the crisis period. People, institutions, and economies can take measures now to ameliorate the situation and ready themselves for post-crisis rebound; having an idea of the problem's magnitude is essential to inform policy making, national response, and USAID programming.

COVID-19 is both a health crisis and an economic crisis. The best way to mitigate the economic impact of the crisis is to halt the disease in its tracks. Nonetheless, there are economic issues which can be acted upon almost at once, to "protect" or "shield" the economy from longer-term disaster and to devise and implement as a recovery plan. Paul Krugman sees the current economic crisis as a "medically induced economic coma." The COVID-19 Economic Impact Model will help to visualize this immediate economic problem.

Review by the Economist Intelligence Unit

The Economist Intelligence Unit (EIU) correspondent for Armenia reviewed this report and its assumptions. The EIU is in agreement with the assumptions in the model, but also offered an observation about one of the results scenarios, leading to a correction of the calculations in Table 1. In addition, the EIU commented on the current situation in Armenia with respect to the expansion of the COVID-19 through the population and a pessimistic expectation for the longer-term economy. The entirety of the EIU comment is in Annex II.

Part One

Summary

Using the COVID-19 Economic Impact Model, the Armenian economy will experience about $744 million—equal to more than six percent of gross domestic product (GDP)—in lost overall GDP and that this will largely occur between mid-March 2020 and end of July 2020. This could result in between 54 and 60 thousand lost jobs and between 167 and 185 thousand people falling into poverty.

Responding to the economic impact of COVID-19 (either during the crisis or afterward) will require a great mobilization of both domestic and international resources. The economic impact is considerable, and Armenia's macroeconomic resilience is only middling. Its ability to carry out fiscal and monetary measures, if not accompanied by international financial support, is constrained and could lead to economic instability, unsustainable fiscal balances, inflation, or balance of payments shortfalls.

FAST agrees with the EIU concern that shutdowns may have eased too soon. This concern derives from the trends in easing of shutdowns, as clear in Figure 1 and Figure 3 coupled with the rapidly rising daily deaths and new cases, as shown in Figure 4.

Results and scenarios

Table 1 presents the overall results of the Model in terms of lost GDP for the year, for the COVID-19 Economic Impact period, and immediate losses in employment and rises in poverty. The results include three scenarios: high, moderate, and optimistic impact.

Table 1 Economic Impact Model Results

Overall COVID-19 Immediate Economic Impacts			
Armenia – Annual (dates of projections)	**10/2019**	**4/2020**	
COVID-19 Shutdown Period Impacts on GDP and Scenarios	USD millions	ADM trillions*	
COVID-19 Impact on GDP in Shutdown Period - High	-744	-359	
COVID 19 Impact on GDP in Shutdown Period - Moderate	-709	-342	
COVID-19 Impact on GDP in Shutdown Period - Optimistic	-670	-323	
* 2019 ADM*			
Shutdown period impacts and scenarios	**TOTAL**	**Female**	**Male**
High Impact			
Change in employment, full-time equivalent (FTE) (000)	-60	-26	-34
Change in employment, % total employment	-6.6%	-5.7%	-7.4%
Change in # persons in poverty (000)	185	NA	
Moderate Impact			
Change in employment, FTE (000)	-57	-25	-33
Change in employment, % total employment	-6.3%	-5.4%	-7.0%
Change in # persons in poverty (000)	176	NA	
Optimistic Impact			
Change in employment, FTE (000)	-54	-23	-31
Change in employment, % total employment	-5.9%	-5.1%	-6.7%
Change in # persons in poverty (000)	167	NA	
FTE – Full Time Equivalent NA – Poverty data are Not Available on gender basis.			

The loss of employment, expressed in FTEs, is the amount of work that will be reduced due to both reduced demand and supply-chain disruption, namely, the individual's inability to go to work or to move goods to market. Jobs may not always fully disappear: some workers may work reduced hours.

Men are more likely to lose their jobs than are women, mainly because other than public administration, health, and education, which are unlikely to see job losses, the service sector is predominantly male and

this is where many job losses are expected. In addition, few job losses are expected in agriculture, where women workers exceed men by 50 percent.

Assumptions

Specific assumptions that drive these results relate either to loss in output due to shutdown-induced declines in demand, or interruptions in value chains—namely, the inability for workers to get to work. These assumptions are based on economic theory, observations from Armenian sources, observations from other countries, observation of shutdowns and the prevalence of COVID-19 in terms of deaths and new cases in the country, and certain Government of Armenia and other official decisions as laid out in Annex II.

The assumptions are:

- Consumer demand for specific items just prior to shutdown (namely for some food and household products), other food items, and general retail-store purchases (can include online retailing) increases by 15 percent over baseline. This is consistent with Baker et al. (2020),[1] which finds this pre-crisis hoarding effect. Baseline is what would have been produced without COVID-19 shutdown.

- In the subsequent two months, consumer demand for these products will decline 20 to 30 percent over baseline, recuperating somewhat in the fourth month (June to July).

- Demand for transportation and related services, including wholesale services, is forecast to decline from 10 to 20 percent over baseline during the crisis period.

- Hospitality businesses such as hotels and restaurants will experience extreme demand drops. In the first two months of shutdown, demand may drop by about 50 percent. In the final two months of shutdown, demand will start to recover but will still be lower than baseline by 15 percent.

- Demand for arts and entertainment will drop in a similar pattern as the hospitality sector. This is further enforced by Government decisions to prohibit such gatherings.

- Work in construction is estimated to drop by about 25 percent in the first months of the period, then return to earlier activity.

- Due to limitations of transport, workers unable to travel to workplaces, and technological constraints on working from home, labor supply shortages will result in moderate losses of production in agriculture and manufacturing.

- Although international prices for Armenia's mining exports are low compared to last year, output is not expected to decline, and no job losses are anticipated. Output may decline later in the year due to inability of partner countries to sustain imports given lagging economies. Even if mining were to halt operations, the sector only accounts for about two percent of all jobs in the country.[2]

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[1] Baker, Scott, R.A. Farrokhnia, Steffen Meyer, Michaela Pagel, and Constantine Yannelis. *How Does Household Spending Respond to an Epidemic? Consumption during the 2020 COVID-19 Pandemic.* NBER working paper no. 26949. April 2020. http://www.nber.org/papers/w26949

[2] The mining sector includes about 400 mines and produces gold, copper, zinc, lead, silver, and molybdenum, among others.

Macroeconomic Resilience

Macroeconomic resilience is a country's ability to weather economic shocks. It is difficult to measure but using a set of indicators in a comparative framework can help in making a judgment. This system of comparative indicators represents a starting point and would require deeper, country-specific investigation to assess the ability of any particular country to respond to shock or crisis.

Table 2 presents indicators of monetary and fiscal resilience. USAID first used these indicators in 2009 in the broad assessment of macroeconomic resilience in the face of the Global Financial Crisis (GFC), and they are discussed in more detail in Gallagher and Heredia-Ortiz, 2014.[3] The more resilience a macroeconomy enjoys, the more likely it may be able to withstand severe economic shocks without creating extensive imbalances, runaway inflation, an inability to meet budget requirements, shortages of foreign exchange, and international disequilibria. The indicators are color-coded, where green means the country's position is relatively favorable relative to most other low- and middle-income countries; yellow means its position is neither favorable nor unfavorable; and red means there may be substantial challenges.

While the economic shock caused by COVID-19 is considerable, with sharp drops in output, losses in jobs, and a surge in poverty, proper post-crisis adjustment in Armenia is tenable. Public debt is not excessive but debt service with respect to tax revenues is high, which means that taking on new debt is likely to impose strain on the fiscal system. The overall government budget balance also is not excessive. The country does not depend heavily on foreign grants. National saving at 13% of GDP is low and cannot be easily tapped in the future to cover the cost that will be incurred in meeting today's COVID-19 challenges. Additionally, Armenia already makes considerable tax effort compared to other countries with the same resources and tax handles, hence efforts to raise taxation in the future could possibly impact citizens and private sector competitiveness rather negatively.

Monetary policy has limited space to accommodate expansionary fiscal policy or credit and capital market interventions without setting off price inflation or international balance of payments crises. The credit rating is middling compared to almost all low- and middle-income countries, so combined with the also middling debt-to-GDP ratio, the country will likely find it difficult to tap foreign financing for current needs.

Table 2 Indicators of Fiscal and Monetary Space

Fiscal Space					
Public Debt (% of GDP)	PPG Debt Service* (% of Tax Revenue, 2017)	Budget Balance (% of GDP, 2018)	Grants (% of GDP, 2018)	Tax Effort (USAID CTD, 2017)	Gross Savings (% of GDP, 2018)
51.3	12%	-1.8	1%	0.6	13

Monetary Space							
Inflation rate %	M2 growth rate %	M2 Velocity*	REER*	Currency dependency	International Reserves	GDP Growth rate	Credit Rating
2.5	7%	2.2	104.1	0	3.7	5.2	BB-

* Public and Publicly-Guaranteed Debt and service to IMF.

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[3] Gallagher, Mark and Eunice Heredia-Ortiz. "The Macroeconomic Resilience of Nations," *Developing Alternatives*. September 23, 2014. https://dai-global-developments.com/articles/macroeconomic-resilience-of-nations

> * Tax Effort is the ratio of actual tax collections to tax capacity.
> * M2 Velocity is the speed at which money, in this case M2, circulates.
> * REER is the real effective exchange rate.
> * Currency dependency is a binary indicator (1,0) where 1 means the country's currency is either linked directly to another country's or that a foreign currency circulates as the country's *de facto* and *de jure* currency.

Part Two:
COVID-19 Economic Impact Assessment Model Technical Note

This technical note explains the methods and sources used to develop the COVID-19 Economic Impact Assessment Model Case of Armenia. The technical aspects of the model and how they are applied to data from Armenia are explained. This note does not state nor justify the assumptions in terms of reductions in demand or supply-chain changes, as these are easily variable within the model.

The COVID-19 Economic Impact Assessment Model is a set of methodologies for assessing the immediate impact of shutdowns and related measures on the economy of any country. The primary outputs of the Model are projections of the losses in total output and employment by men and women and the overall rise in poverty that may occur during the period immediately following the onset and response to COVID-19, which is referred to as the "crisis period."

Concept

The immediate economic effects of COVID-19 social distancing derive from the shutdown of many businesses where interpersonal contact is crucial, such as retail, hospitality, and entertainment. Shutdowns may be mandated by law-makers or government leaders. They may also be a result of personal decisions people make not to leave their homes to go to the office, farm, store, or to meet others for social occasions. Such shutdowns are happening all around the world. This analysis does not rely on *required* shutdowns or lockdowns but rather *effective* shutdowns. Various measures of peoples' activities are available from sources such as Google and Apple Inc. showing people's behavior with respect to visiting groceries, retail stores, parks, taking public transportation, driving cars, walking, and not leaving their homes. These give a very clear picture of the extent to which people are actually practicing shutdowns.

Countries experiencing these shutdowns will see immediate impacts resulting in losses in productive employment. Consumers, including international visitors, may drastically reduce their demand for hospitality services, such as going to restaurants, hotels, shows, and other forms of entertainment. This will leave many businesses shuttered, at least for an abbreviated period, while others may shutter permanently. Either reduces the demand for labor or may more permanently eliminate jobs. In addition to demand impacts, workers may not be able to go to their factories or other places of employment where tele-working is not feasible. Economies may experience reductions in the demand for their exports due to how the COVID-19 affects trading partners.

Methods and Sources

GDP

The International Monetary Fund projected GDP growth rates for most countries in October 2019 and April 2020.[4] This model assumes that the change in the expected growth rate is entirely due to COVID-

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[4] International Monetary Fund. *World Economic Outlook. Chapter 1: The great lockdown.* April 2020.

19-related shutdowns. The overall loss in GDP attributable to COVID-19 is calculated by taking the difference in GDP growth rates and multiplied by the GDP for 2019. Table 1 presents this result in both local currency (ADM of 2019) and USD (current).

The Model's initial calculation, based on the two IMF projections, is that all the change in GDP is entirely incurred during the four-month shutdown period. Two alternative scenarios are also calculated.

GDP Scenarios

The model generates three scenarios.

1. The first, or highest-impact scenario, is that GDP impact is incurred in the shutdown period, including all subsequent rounds implicit in an Autonomous Spending Multiplier.
2. A moderate scenario applies a lower Autonomous Spending Multiplier than that calculated. This multiplier is created by using a lower or smaller value for the marginal propensity to consume parameter. This scenario effectively limits second- and subsequent-round impacts.
3. The optimistic scenario assumes that all impact is first-round only and is calculated by dividing the base GDP decline by the estimated Autonomous Spending Multiplier. This scenario effectively eliminates all second- or subsequent-round impacts, assuming they all occur only after the health crisis has subsided.

GDP Sources

GDPfc: GDP at factor cost by productive sector or industrial sector. Data are from the Central Bank of Armenia (CBA). These data present GDPfc by value-added for each of 21 sectors and subsectors. Changes in demand and supply are attributed to proportional changes in value-added by each of these 21 sectors and subsectors. CBA data are reported to third quarter 2019, on a quarterly basis. Using the shares of GDP by quarter over the past several years, GDPfc are projected to full 2019 values. GDPfc includes a reduction (adjustment) overall, in the Armenian set of national accounts, for the category "Financial Intermediate Services Indirectly Measured" which amounts to about two percent of GDPfc, which is not incorporated into Model behavior.

GDPmp: GDP at market prices are by use or by demand, such as household and government consumption, imports, investment, and exports. These data are from the World Bank's World Development Indicators and they are used to calculate the Autonomous Spending Multiplier, plus taxation, which is not part of GDP.

Autonomous Spending Multiplier

The Autonomous Spending Multiplier (ASM) derives from the Hicksian structure of macroeconomic demand, where certain exogenous changes in demand, such as shutdowns, affect (for example) demand for hospitality services, and second- and third-round impacts on overall demand. The calculation uses the marginal propensity to consume, to import, and to tax as denominators under the unit 1. The Model makes the simplifying and reasonable assumption that for the short term, the average values of consumption, importation, and taxation are equal to their marginal values. The full ASM is calculated at 1.11 and the reduced at 1.05.

Employment Data

Employment data are from the Statistical Committee of the Republic of Armenia. These include data on twelve subsectors of the economy, as well as data on employed persons by level of education, region, urban or non-urban, gender, and market relation (employed, employed employer, self-employed). The data are available only through 2018. We used the exponential timeseries smoothing technique in

Excel's data/forecast app to project employment overall for 2019 and applied previous years' relationship among employment details to overall employment to generate a full set for 2019.

The first major requirement is to allocate employment data to the 21 sectors and subsectors when employment data do not exactly track with the GDP data. The next requirement is to allocate jobs among these sectors to women and men. The two requirements are met simultaneously in an iterative process, where the average value-added per employee from a given sector or subsector is available to be the average for the entire sector. However, this is not always useful or balanced. Further iterations were run to adjust value-added by worker in sectors to meet the overall sector target and to account for certain industries, such as mining, where higher value-added per worker is anticipated. The allocation to jobs for men and women was effected through the same iterative process as the data from the State Statistical Committee as consistently reported.

Poverty

Poverty data are based on head-count methodology and are from the Statistical Committee of the Republic of Armenia and are consistent with the World Bank's World Development Indicators. The Statistical Committee's database only includes poverty numbers up to 2018. They are presented as the percentage of population living in poverty but are not broken down by male and female.

The Armenian economy has a number of dynamics or characteristics that have implications for this analysis. There are almost as many women as there are men at work – most low and middle income country employment is dominated by men – but women greatly outnumber men in agriculture, which is contrary to the situation in most low- and middle-income countries. While the Armenian economy has been experiencing robust growth over the past decade, total employment has been declining, again contrary to most low- and middle-income countries' experience, as has the overall population. This dynamic necessitates an alternative methodology, i.e. from that used in other cases for assessing COVID-19 economic impact, for estimating the impact on poverty.

For this analysis, we calculate the change in the number of "non-poor" persons per employed person. We then calculate the loss in employment expected due to the COVID-19 crisis and multiply that change on the number of "non-poor" persons, the difference being the calculated number of persons falling into poverty. The number of persons that could fall into poverty, deriving from the fewer "non-poor" persons in the population, is calculated to be between 170 and 188 thousand persons.

Timing the Shutdown

The COVID-19 Economic Impact Model attributes all the loss in GDP deriving from shutdown (as executed rather than as mandated) as occurring in the four-month period starting in mid-March 2020. In most countries around the world it is possible to pinpoint effective shutdowns using mobility data from Google and Apple. These data are not available for Armenia, instead, he shutdown in Armenia is demonstrated from two sources: Yandex.ru and the US National Air and Space Agency (NASA).

Figure 1 is an index showing how much people are self-isolating by way of not going outside their homes. Figure 2 explains the scoring. Clearly, Armenians started self-isolating (or social distancing) in the second half of March and remained in self-isolation through most of April, but by the beginning of May were to be seen more and more "on the streets." Of course, part of this reduction in self-isolation is weather related as the spring is making outdoor intercourse more common.

With respect to vehicular traffic, no direct data are available, but NASA does track nitrogen dioxide (NO2) levels over most large cities around the world by satellite. Most NO2 pollution is caused by motor vehicles. Shutdowns generally result in less vehicular traffic as people stay home, do not go to entertainment or cultural events, and do not travel to work or to visit friends or family. Figure 3

illustrates the decline in NO2 compared to baseline (average values for same months from 2015-2019). Figure 3 does demonstrate lower NO2 levels in Yerevan during April, although on the rise from mid-April to the beginning of May.

Figure 1: Self-Isolation in Two of Armenia's Major Cities

Source: https://yandex.ru/web-maps/covid19/isolation?ll=45.499725%2C40.661995&z=7
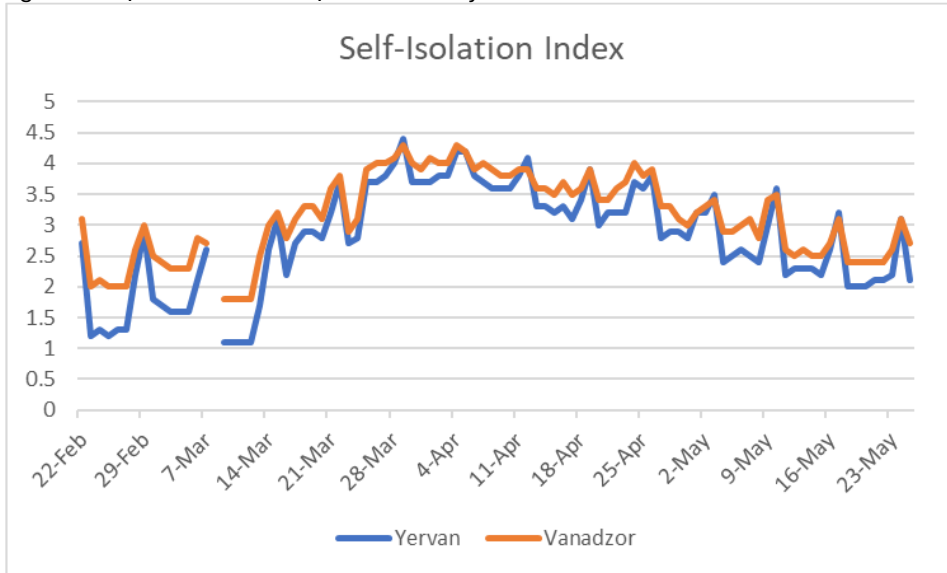
Figure 2: Scoring Self-Isolation in the Russian "Near Abroad"

Source: https://yandex.ru/web-maps/covid19/isolation?ll=45.499725%2C40.661995&z=7
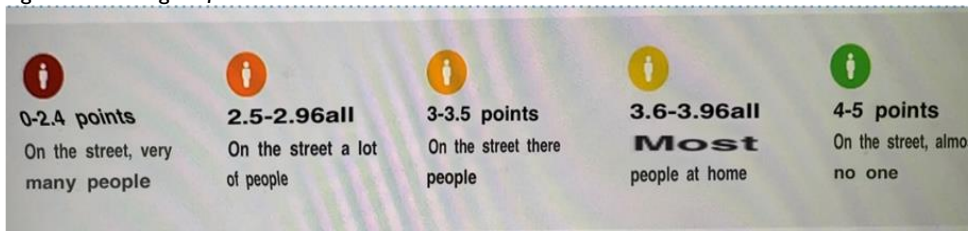
Figure 3 Nitrogen Oxide Levels Decline in Yerevan During Crisis
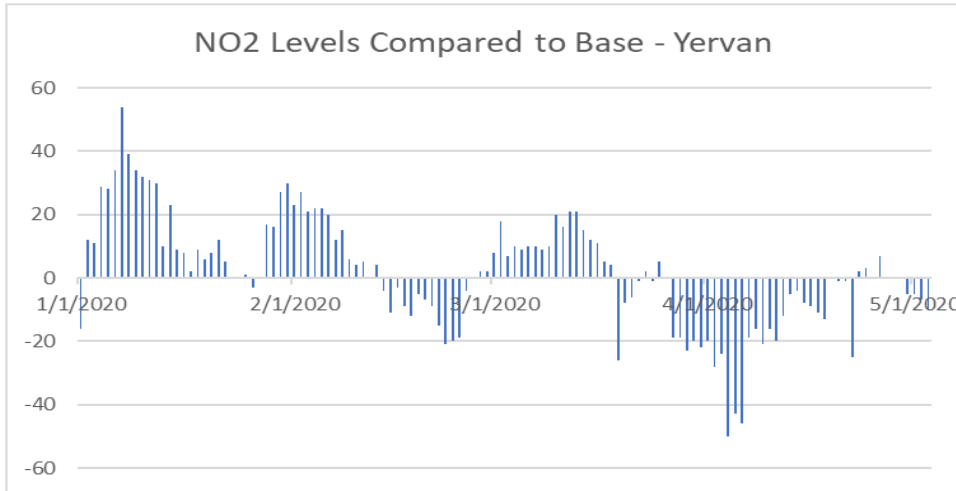
Source: https://so2.gsfc.nasa.gov/no2/no2_index.html

COVID-19 cases and deaths have not been large on a per capita basis and compared with other countries, but they have been growing very rapidly of late. Figure 4 shows both total daily cases and deaths rising since mid-March.

Figure 4: Cases and Deaths from COVID-19 in Armenia on Daily Basis
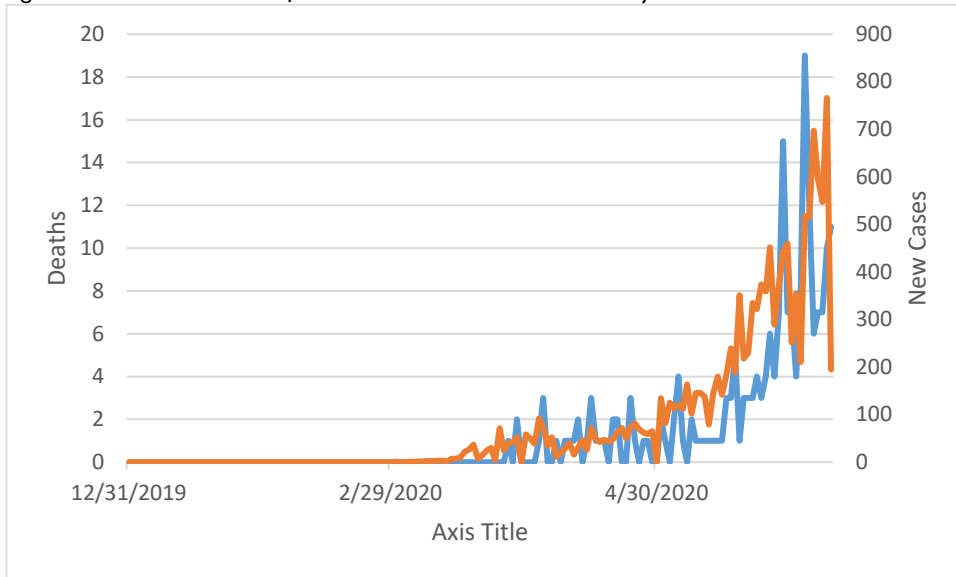
Source: European Centre for Disease Prevention and Control

Demand and Supply Sectoral Impacts

In Armenia, national accounts information of value-added by productive sectors were taken from the Central Bank of Armenia up through Q3: 2019, and projected for all of 2019 by the FAST. This includes 21 sectors and subsectors under the broader classifications of agriculture, industry, and services.

The COVID-19 Economic Impact Model facilitates customized input on expected declines or increases in demand for the product of these sectors. Based on the assumed sectoral change in demand and value-chain constraints, the Model calculates the associated change over baseline in employment, disaggregated by gender. This calculation is based on historical sectoral value-added per person and statistics on the gender composition of each sector of the economy. The Model requires constraining the sectoral changes, in aggregate, in an iterative process to be consistent with the IMF projected growth rate changes discussed earlier.

Creating Scenarios by Modifying Second-Round Impacts

Macroeconometric models calculate GDP growth in a simultaneous-equations framework based on autonomous-spending multipliers (ASM). These multipliers capture the immediate impact of shocks or other exogenous changes to an economy, such as fiscal or monetary policy or COVID-19-induced shutdowns, as well as its second-round impacts. The Model yields a multiplier of 1.11 for Armenia, based on consumption, importation, and taxation. The Armenian multiplier is lower than in many countries due to both a high use of imports in the economy as well as the relatively high level of taxation.

The COVID-19 Economic Impact Model generates three scenarios: high, moderate, and optimistic impact. High impact assumes that the entire annual impact, including second-round impacts, are all experienced during the crisis period. Moderate impact assumes that second- and subsequent-round impacts are moderated by a reduced ASM. This causes the estimate of impact to be spread over more months of the year. The optimistic scenario assumes that little or no second-round impacts are experienced during the crisis period, but instead are all spread over all the subsequent months of the year. This is calculated by dividing the high-impact value by the implicit ASM.[5]

To generate the optimistic scenario, the COVID-19 Economic Impact Model was limited to the immediate impact period; the overall reductions in GDP were reached by dividing by the ASM, and the same with estimates of overall job losses. Dividing total GDP loss by the ASM is the optimistic scenario since it implies that all second-round effects only occur after the crisis period. The moderate scenario reduces the applied ASM. The reasoning behind this is that, in a crisis situation where demand drops before income, people earning income are likely to hoard their cash. In this way, they increase saving because they are unsure what will happen next and with a higher savings rate, the ASM decreases. The following excerpt illustrates this point.

> *At the beginning of the first stage, which started a few days ago, economic activity drops because individuals cannot go out shopping, not because of lack of income, and because workers are impeded to go to their workplaces, not because firms lack sales. Nonetheless, this situation will soon evolve: as lack of economic activity reduces firms' sales, layoffs will start and workers' incomes will drop; the income of the self-employed will also drop, even if they keep on carrying out their regular activities (assuming sanitary restrictions allow). Towards the end of the first stage, what started as a crisis due to the need to isolate individuals, will evolve into a "traditional" economic crisis, in the sense that economic activity*

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[5] This is a handy way to generate scenarios, but it is not meant as policy guidance.

will be depressed because of lack of demand and income, not because people cannot be together.

UNDP LAC C19 PDS N°. 1 A Conceptual Model for Analyzing the Economic Impact of COVID-19 and its Policy Implications Suggestions for the Emergency, by Constantino Hevia and Andy Neumeyer - UNDP LAC C19 PDS N°. 2

Annex I: Decisions of Government with Respect to COVID-19

Date	Deciding Body	Decision No.	Area	Description
3/13/2020	RA Government	280 - Ն	Travel Restrictions	Temporary termination of air and land travel from Georgia until 4/24.
3/16/2020	RA Government	298 - Ն	Emergency State	Declaration of emergency state starting from 18:30 on 3/16 until 17:00 4/14.
3/17/2020	RA Government	303 - Ն	Travel Restrictions	Temporary termination of travel from Russia until 4/24.
3/26/2020	RA Government	354 - L	Financial Support Program	Approval of financial assistance program for individuals and entities affected by COVID-19.
3/26/2020	RA Government	353 - Ն	Business Operations	Temporary pause on operations of individuals, legal entities, and agri-businesses that do not follow the guidance provided by the Commandant.
4/13/2020	RA Government	543 - Ն	Extension of emergency state	Extend the duration of emergency state by 30 days from April 14 17:00 until May 14 17:00.
4/17/2020	Commandant	2020 N 1	Entry to Armenia	Allow the entry of a cargo driver and alternate driver from the following countries: China, Iran, South Korea, Japan, Italy, Spain, France, Germany, Switzerland, Denmark, Austria, Belgium, Norway, Sweden, the Netherlands, United Kingdom,
4/17/2020	Commandant	2020 N 2	Social distancing	Limit the following activities that require attendance of 20 and more people: concerts, exhibits, shows, theaters, and other sports, cultural, and educational activities, entertainment events, funerals and celebrations (birthday parties, engagement and wedding ceremonies).
4/19/2020	Commandant	2020 N6	Export	Prohibit export of PPE and medical equipment

Date	Deciding Body	Decision No.	Area	Description
4/21/2020	Commandant	2020 N 9	Retail	Effective 3/22/2020, prohibit operations of the following businesses: shopping centers (with the exception of retail sale of groceries, alcohol, beverages, cigarettes); bars, night clubs, dance clubs; movie theaters; casinos; bookmaker and gaming centers
4/24/2020	Commandant	2020 N 14	Mining and manufacturing	Provides list of businesses that can operate: mining, food and alcohol production, production of pharmaceutical products, production of basic metals, weapons, manufacturing, etc.
4/24/2020	Commandant	2020 N 15	Remote work	Enable remote work for all public sector employees.
4/24/2020	Commandant	2020 N 16	Self-isolation	Self-isolation and limited mobility, allowed with ID and travel document (providing the name, date, time, travel destination, etc.)
4/25/2020	Commandant	2020 N 17	Mining and manufacturing	Allows the following industries to operate: aluminum production, production of membrane material, manufacturing of paper and cardboard, plastic products used for packaging, etc.
4/27/2020	Commandant	2020 N 18	Agriculture	Almost everything allowed
			Mining	No restrictions
			Manufacturing	Largely restricted with the exception of food and alcohol production, hygiene production.
			Electricity, gas	No restrictions
			Construction	Mostly restricted with the exception of construction required for mining, assembling electrical, water supply and other engineering systems
			Transportation	Mostly allowed
			Restaurants	Mostly restricted with the exception of delivery and carry outs
			Education	Remote or online
			Healthcare	Not restricted

Date	Deciding Body	Decision No.	Area	Description
			Entertainment and Culture	Only remote or online
5/3/2020	Commandant	2020 N 63	Restaurants	Limited to outdoor restaurants and cafes
5/14/202	RA Government	729 - Ն	Extension of emergency state	Extend the duration of emergency state by 30 days from May 14 17:00 until June 13 17:00.
5/21/2020	Commandant	2020 N 81	Self-isolation	For everyone arriving in Armenia
5/21/202	Commandant	2020 N 92	face masks	Everyone is required to wear face masks in public areas

Annex II: External Review

EIU Input on DevTech Macroeconomic Scenarios for Armenia

Do the assumptions on report pages 2-4 generally look reasonable?

The assumptions used in the report look reasonable to the Economist Intelligence Unit. During the lockdown period domestic consumption is severely constrained, leading to substantial output losses, but subsequently to large rebounds once the restrictions are lifted. We agree that consumer demand (primarily for food and other basic products) increased in the period preceding lockdown measures compared to the baseline, but only marginally.

Economic output losses will likely be concentrated in April-May: in April retail sales contracted by 33.1% year on year which is in in line with USAID's assumptions of 25-30% consumer demand declines in mid-March to May. In the same month construction output plunged by 51% year on year and industrial production by 8.6%, reaffirming the view that output losses will be the most severe in the second quarter 2020.

However, the coronavirus outbreak in Armenia has been deteriorating again in late-May and June. As the government started to lift some restrictions on the economy over the past two weeks, the number of new coronavirus cases has started to increase sharply again. As of June 5th the country has more than 11,000 reported cases, with almost 700 new cases registered on June 4th alone–the highest daily rise thus far. We believe that these developments will result in the government re-imposing restrictions on the economy, which will prolong the lockdown into the third quarter. This will continue to severely impact household consumption and suggests that even a moderate recovery in domestic demand may be delayed to later in the year.

Declines in transportation and related services of 10-20% in the forecast period also look reasonable, although public transportation may be slower to recover in the months ahead, amid changes in consumer behaviour. However, this may result in a faster than anticipated pick up in car purchases (if disposable income allow it). We agree with the assumption that labour supply shortages will result in moderate production losses in the agricultural and manufacturing sectors over the lockdown period. However, lower demand beyond the lockdown period (both domestic and external) will likely result in a more sustained output loss, driven by demand-side factors in the second half of the year. Social distancing measures in both sectors may also lead to lower output for the remainder of 2020 until production processes can adjust.

Furthermore, we broadly agree with the assumption that the number of unemployed will rise substantially in the lockdown period and beyond. However, Armenia's large informal sector may be adversely affected by the lockdown and broad collapse in economic activity. Therefore, unemployment levels in the informal sector will also rise sharply, further worsening poverty levels in the country, the sector will not receive any form of state aid during the period of the crisis.

One question concerns Table 1: the employment impact numbers are the same under moderate and optimistic scenarios: is this intentional? If so, it needs to be explained. (*FAST NOTE: This was an error in transferring data from the model to the report and has now been corrected.*)

The assumption that output in the mining sector will not decline, resulting in no or limited job losses seems optimistic to us given our expectations of a global slump in demand for copper and lower copper prices this year (copper is Armenia's biggest export item). A mildly offsetting factor will be rising global demand for gold and higher global gold prices. However, compared to copper, the contribution of gold to Armenian exports is small, suggesting only a minor positive effect. And although the mining sector only accounts for 2% of the workforce, job losses in mining would have significant negative effects on Armenia's mining regions, which tend to highly depend on the second for employment and as a source of income.

We believe that public debt in Armenia is elevated at about 54% of GDP and is set to rise to nearly 60% in 2020. Furthermore, total debt/GDP and net/GDP ratios are elevated at 86% and 68%, respectively, which increases downside risks, as external financial conditions for emerging markets such as Armenia remain tight over the course of the year.

- ***Do you suggest alterations in the assumptions, but within the framework of the assumptions – must all relate to supply and demand of the productive sector?***

Although we agree that the direct negative economic fallout stemming from lockdown measures will be severe, we also believe that secondary effects from loss in trade in particular to have lasting negative impact on the Armenian economy.

We see large downside risks to the economy stemming from the external sector, in particular amid our poor outlook of Armenia's largest trading partner, Russia. Volatility in commodity prices will likely persist of the remainder of the year, negatively affecting Armenia's export channels. Therefore, subdued external conditions will substantially reduce demand for Armenian exports. The anticipated hit on remittances, which constitutes about 12% of Armenian GDP and are another important source of foreign currency income and crucial for household consumption. Therefore, the drop in disposable household income will have a persistent negative shock on the economy in 2020, which goes beyond the duration of the coronavirus-related lockdown period.

- ***Overall, do you think the results are too pessimistic, optimistic, or in line with your current understanding of what is happening in Armenia?***

USAID's view on economic conditions is broadly in line with our core forecast for Armenia. Therefore, we believe that USAID's view for 6-7% decline in output during the lockdown is feasible, but risks may lie to the downside if the lockdown period is extended (which seems likely). We believe that the government's US$300m (2% of GDP) fiscal stimulus programme in the form of direct spending, state sponsored loans and more investments, should help cushion the economic blow in the third and fourth quarter of the year. The IMF has also made US$280m in emergency funding available to Armenia, which should help reduce external pressures.