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Mobilizing financial resources for development

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The Macroeconomic and Social Impact of COVID-19 in Ethiopia in the Global Context

Background Study for UNCTAD

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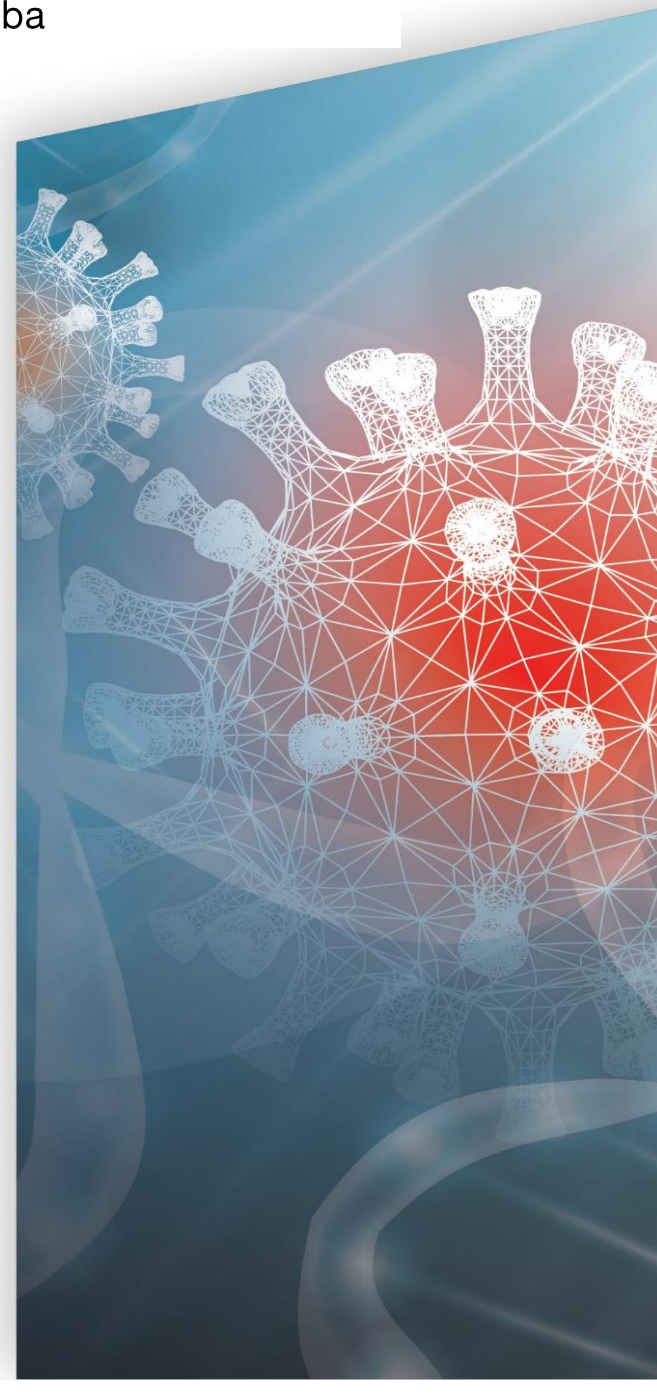

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About the COVID-19 Response and Recovery project

This paper is an output from the project "Response and Recovery: Mobilising financial resources for development in the time of COVID-19", which is co-ordinated by the Debt and Development Finance Branch of UNCTAD and jointly implemented with ECA, ECLAC and ESCAP. This project is one of the five UN Development Account short-term projects launched in May 2020 in response to the COVID-19 crisis.

The project aims to enable low-income and middle-income developing countries (LICs and MICs) from Africa, Asia-Pacific, and Latin America and the Caribbean to diagnose their macro-financial, fiscal, external financial and debt fragilities in the global context, and design appropriate and innovative policy responses to the COVID-19 pandemic leading toward recoveries aligned with the achievement of the Sustainable Development Goals (SDGs).

Abstract

This paper focuses on the effect of the pandemic on economic growth, sectoral value-added, the external sector both from Ethiopia and global perspective based on the UN Global Policy Model analysis. Three scenarios were envisaged, in which the effect of COVID-19 is compared to what would have been the economic condition without COVID-19. The analysis shows that the macroeconomic effect of COVID-19 in Ethiopia is to reduce growth, exports, imports and public revenue. It will also lead to an increase in public expenditure, public deficit, external debt and debt-service ratio. The combined effect of all these may lead to macroeconomic instability that includes inflation, shortage of foreign exchange and a pressure on balance of payment in 2020/21 unless it is wisely managed. The macroeconomic balance of the country is already in a precarious condition before the pandemic's effect. The paper also discusses possible socio-economic effect of COVID-19 by focusing on unemployment and poverty that includes its gender dimension and then draws on general policy implications for economic recovery.

Key words: Global Policy Model, Macroeconomic effects, COVID-19, Economic recovery, Ethiopia

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I INTRODUCTION

Early projections about the possible socio-economic impact of COVID-19 in Ethiopia were based on the assumption that the spread of the pandemic will be similar to what was happening in Europe and US at the time. As a result, almost all projections were predicting that the country would see all the gains from its fast economic growth registered for more than a decade and half wiped out in a short period; and its poverty level to drastically increase. These studies, thus, warned the Ethiopian government to do its best to stop the spread of the virus by all means available to it, quickly and decisively.

The potential damage and urgency of the looming pandemic was very frightening at the time, to say the least. Although the government has tried its level best to stop the spread of the virus and minimize the economic impact of the pandemic, the gloomy projections didn't come into effect mainly because, for some unknown reasons, the spread of the virus was extremely small compared to what has happened in developed countries. This is a very fortunate outcome in Africa for otherwise the economic effect of the pandemic would have been devastating, given the nature of the livelihood of people in the continent. Notwithstanding this fortunate outcome, COVID-19 had and still having its toll on Ethiopian economy. Thus, the focus of this analysis is to make an assessment of its macroeconomic and social effect by focusing on its likely effect in 2020/21, which is the Ethiopian fiscal year that runs from July 2020 to June 2021[1], We will also examine this issue in the context of a policy framework and project of the global recovery as outlined in UNCTAD (TDR 2020), Cripps, (2021) and McKinley, (2021).

We have envisaged three scenarios in this analysis. The first and the best-case scenario assumes that the COVID-19 economic shock that began in March 2020 has lasted up to the end of the 1st quarter of the Ethiopia new fiscal year 2020/21 (i.e., July to September 2020) only and that the economy went back to normal after that. The second-case scenario assumes that the economic shock has continued into the 2nd quarter (October to December 2020) but at the rate half the level of effect it had in the first quarter – We termed this the 2nd best-case scenario. The third and worst-case scenario assumes this shock will last up to the end of 2nd quarter in full force (or until the 2nd and 3rd quarter, with half the force it had in the first quarter).

Having these scenarios, the forecast about the likely macroeconomic and social effect of COVID-19 is documented in the rest of the study. This is done based on anticipated demand and supply side shocks that are projected based on the information gathered from global and local forecasts about micro and sectoral level effect (the methodology, the data and data sources are documented in Annex A1 and A2 in the Appendix). These shocks are incorporated in a consistent and inter-linked National Accounting Framework that is organized in an Excel-based macroeconomic database. The framework used is made up of sectoral GDP, balance of payment data as well as data about employment condition in Ethiopia. Sectoral linkages are formulated using previous studies, elasticities from previous partial

[1] The Ethiopian fiscal year that runs from July-June is the most relevant economic calendar to use in this study because it generally functions within this budget calendar. All government institutions in Ethiopia also report their plans and performance using this Ethiopian fiscal year. It is also difficult to convert it to European calendar year because the country doesn't have quarterly GDP figures. Thus, we will be using the fiscal year in this study. The COVID-19 related economic shock began in March, 2020 which is the last month of the 3rd quarter of the Ethiopian fiscal year 2019/20

equilibrium models on public revenue, expenditure and trade. Elasticities derived taken from inflation model are also used to capture the interaction between public finance effect of the pandemic and its implications for monetary and inflation development (the method, data and data sources are documented in Annex A1 and A2).

In all the three scenarios envisaged, the effect of COVID-19 is compared to what would have been the economic condition without COVID-19 by taking the average annual value of major macroeconomic variables in the three years before COVID-19 (2016/17-2018/19) to be the base run (the business-as-usual scenario), or, the benchmark of the economic situation of the country without the effect of COVID-19.

The rest of the study is organized as follows. Section two will highlight the current macroeconomic environment of the country in brief. This will give us the general picture of the macroeconomic condition of the country in the context of which the economic and social effects of COVID-19 need to be understood. This will be followed by section three where we have focused on the effect of the pandemic on economic growth, sectoral value-added, the external sector both from Ethiopia and global perspective – the latter being based on UN Global Policy Model based analysis. Section four will deal with the response of both the government and private sector to the pandemic and its implications. Section five is devoted to the discussion of the possible socio-economic effect of COVID-19 by focusing on unemployment and poverty that includes its gender dimension. Section five concludes the study by drawing the general policy implications of the study for recovery.

II CURRENT MACROECONOMIC OUTLOOK OF ETHIOPIA

Just before the emergence of COVID-19 as a global pandemic, the Ethiopian government had embarked on far reaching economic reform and liberalization through its reform plan termed "Homegrown Economic Reform" that was running for almost two years at the time. The key feature of this reform is a plan to increase the efficiency of the government as well as to liberalize of the economy that includes privatization of key public enterprises. This reform is supported by major donors that included the World Bank (WB) and International Monetary Fund (IMF) that committed significant resources (estimated at US$10 billion which is 3 times the level of current exports of the country) and technical assistance for the purpose (see Alemayehu 2019). It is amidst this reform effort that the COVID-19 pandemic broke out and began to hit the economy.

Before the onset of COVID-19, the government's expected growth of the economy in 2019/20 has been 9 percent. IMF and WB revised their estimate of 6 percent growth for 2019/20 which was undertaken before the onset of the pandemic to 3.5 and 4 percent, respectively, in June 2020 taking the pandemic's effect into account. The government has also revised its 9 percent growth forecast to about 6 percent at the same time. This 6 percent growth is now turned out to be actual performance of the economy in the fiscal year 2019/20, according to the latest government report. This performance, has included one month in quarter three and the full 4th quarter during which time the effect of COVID-19 is taking its course (NBE, 2020). Taking into account the economic effect of COVID-19 in the last month of the 3rd quarter and the 4th quarter of the fiscal year, and using the government forecast of 6 percent for the first three quarters, the estimate of growth in this study in 2019/20 is about 3 percent (Alemayehu, 2020). With this general picture of the economy in 2019/20, this study

will focus on what really happened since the onset of the virus and what is likely to happen because of that in the fiscal year 2020/21 that began on July 1st, 2020. The study will also look at the governments and economic agents' general response to the economic effect, in the context of the recovery in the global economy.

Even before it was hit by the economic effect of COVID-19, the Ethiopian macroeconomy was characterized by significant macroeconomic imbalances and precarious fiscal and balance of payment (and hence foreign exchange problem) conditions. This is partly because of structural factors and partly because of macroeconomic miss management and corruption of the regime that ruled the country from 1991 to 2018, before the current prime minster, PM Abyi Ahmed, took office in April 2018 (Alemayehu, 2008; Alemayehu and Addis, 2016). One of the indicators, general inflation by August 2020, stood at 23 percent, while food inflation being 26 percent. By April 2021, the general and food inflation remained at 20 and 23 percent, respectively. The Birr (the local currency) is devalued by the current government in collaboration with IFIs, significantly, from about Birr 28 per US$ in November 2019 to 41 Birr in April 2021 -a depreciation of 46 percent with no effect on raising exports or reducing imports but contributing to the high inflation. The macroeconomy was also characterized by significant gap between gross domestic saving and investment with implications for monetization of deficit, balance of payment deficit and rising level of indebtedness (Table 1).

Thus, by 2019/20, the public debt as percentage of GDP stood above 55.6 percent; the export-import gap remained significant because the country was importing about 5 times that of its exports for more than a decade. The level of exports has stagnating below a $3 billion mark for more than a decade. This is happening despite the fact that the government official data shows an average annual GDP growth of 10 percent since 2003/04 (for 17 years). The government also predicted that about 30 million (half of this because of COVID-19 effect) people could be food insecure and need help in this fiscal year – the conflict across the country is aggravating this situation by the day. Thus, it is in the context of such precarious economic and social conditions that the pandemic is hitting the economy (Table 1). The economic and social impact of COVID-19 is to change this precarious macroeconomic condition for the worse.

Table 1: Major Macroeconomic Development before COVID-19 and in 2019/20 in Ethiopia (Ethiopian Fiscal year, July-June)

Macro Indicator	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Real GDP Growth Rate (%) *	10.3	10.4	7.6	10.1	7.7	9.0	6.1
Inflation rate (CPI, % Change)	8.1	10.4	7.5	8.8	16.8	15.3	21.5
Food Inflation (CPI, % Change)	10.3	12.5	7.2	11.2	14.1	19.8	23
End of period Exchange rate Br/$	19.6	20.6	21.8	23.1	27.4	28.9	36
Reserve (Month of Imports)	2.3	2.5	2.6	2.4	2.1	2.4	1.7
Gross Domestic Saving (%GDP) *	22.5	21.9	22.4	22.5	19.7	20.2	20.9
Gross Domestic Investment (% of GDP)	40.3	39.4	38.5	38.4	34.1	37.7	30.8
Overall Budget Deficit including grants/Primary Deficit (% GDP)	-2.6	-2.5	-1.9	-3.28	-3.03	-2.5	-2.5
Current Acct Deficit, including official transfer (%GDP)	-7.7	-11.4	-10.4	-8.0	-6.3	-5.2	-4.1
Trade Balance (X-M) % of GDP	-18.7	-20.8	-19.1	-16.0	-14.7	-13.0	-10.1
External Debt (billions of US$)	14.0	19.09	21.74	23.3	25.8	27.0	27.7
External Debt (% GDP)	25.6	29.5	30.1	29.4	31.9	29.1	28.8
Domestic Debt (% GDP)	28.6	31.8	32.1	34.9	35.6	35.7	26.7
Total Debt (% GDP)	53.2	61.4	62.2	64.3.	67.5	64.8	55.6

Source: NBE, Annual Report (Various Years); MOFED (2016-2019)
**See Alemayehu and Addis (2016) for a critical review of this growth & saving figures. The WB estimated this to be 4% while IMF 3.2 percent in June 2020.*

III MACROECONOMIC EFFECT OF COVID-19 IN ETHIOPIA AND THE UN GLOBAL POLICY MODELS (GPM) PROJECTION

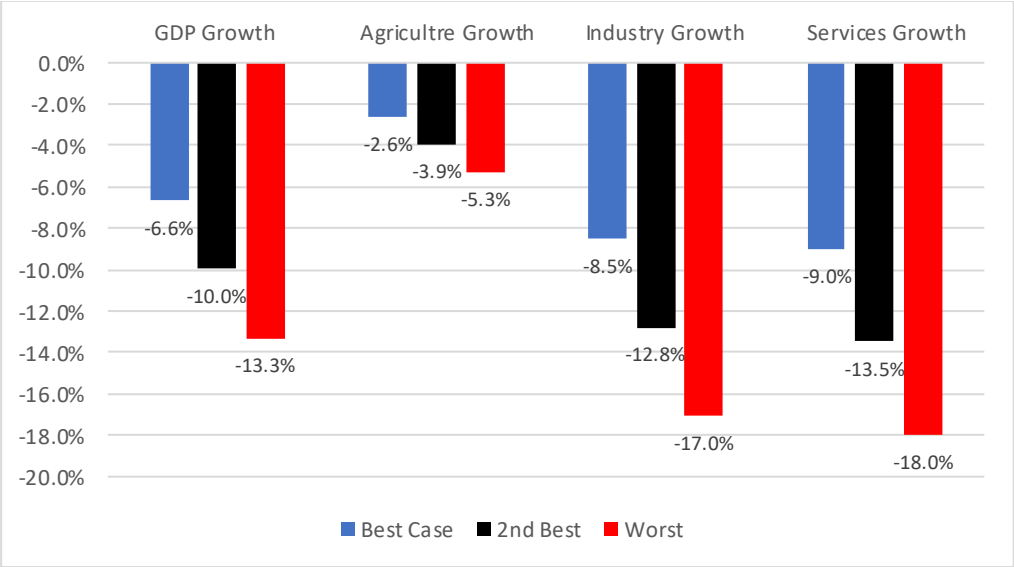
3.1 GDP Growth Effect

Using the method briefly noted in section one above and elaborated in detail in Annex A1, as well as the global forecast about the external sector that is documented in Annex A2, Figure 1 shows the growth effect of the (pure) COVID-19 macroeconomic effect under three scenarios that we have assumed for this study. In the best-case scenario, in which the COVID-19 effect is limited to the end of the first quarter of 2020/21 (i.e., September 2020), COVID-19 is estimated to reduce GDP by 6.6 percent in the fiscal year 2020/21, compared to the base-run (and this is also the most likely effect of the pandemic in last quarter of the previous fiscal year, 2019/20)[2]. The effect of this shock is found to

[2] Given the government's latest actual growth rate of 6% for the fiscal year 2019/20, our estimated growth decline of 6.6% implies the actual growth rate must have decelerated to 2.85 % (weighted average growth of all quarters, the last quarter declining by 6.6%). This is identical to WB's estimated figure for the year. However, the government has insisted that the economy has grown by 6% last fiscal year (see Alemayehu and Addis (2016) and McGregor (2018) about the history of exaggerating GDP growth figures in Ethiopia).

be the highest in the service sector which is expected to shrink by 9 percent. This is followed by the industrial sector that will decline by 8.5 percent. The sever negative economic effect of COVID-19 on the service and industrial sectors means that the urban economy is disproportionately affected more than the rural economy (the agricultural sector). This makes the economic and social impact of COVID-19 severe because the industrial and service sectors contribute about 85 percent to overall economic growth and about 88 percent to urban employment. The agricultural sector is expected to be the least affected, declining only by 2.6 percent, compared to the base-run (Figure 1). In the second-best case scenario, GDP growth in 2020/21, is expected to decline by 10 percent, compared to the base-run.

Figure 1: Different Scenarios for GDP and Sectoral Growth Effect of COVID-19 in Ethiopia



3.2 The UN Global Policy Model and Other Related Projections for Ethiopia

Since the estimates shown in Figure 1 are given as deviations from the base-run, their implications for the actual growth rate need to take into account the expected growth of the economy before COVID-19 and into the future. Latest government report (NBE, 2020) puts the 2019/20 fiscal year actual GDP growth at 6 percent (Table 1). It also forecasted growth in 2020/21 to be 8.5 percent[3]. Taking into

[3] The Ethiopian Economic Association (EEA, 2020) estimated this to be 2.2 percent reduction in best case scenario and 9.9 percent reduction in the worst-case scenario in their estimate around April 2020e. Their estimation is on the lower side in their first version because they computed their figures only form the side of the contribution of labour alone (neglecting the contribution of capital, capacity utilization and efficiency, among others). They did not take the sectoral interactions either. In their revised version, they took all aspects that I have identified in Alemayehu (2020) (trade, finance, FDI, remittance etc.) and pursued a SAM-based model and came up with similar figures closer to our forecast here, which is given in Table 2.

account this 8.5 percent expected growth of the government, the effect of the 6.6 percent decline due to the COVID-19 effect is to render the expected growth in 2020/21 to be about 2.0 percent[4].

There are also a number of projections by local and international institutions about the Ethiopian economy. These various forecasts are summarized in Table 2. The projection in this study is similar to the revised forecast by the Ethiopian Economic Association using a Social Accounting Metrics database. It is also identical with IMF's latest forecast for 2021 and one percentage point below the African development bank's forecast for 2021 (see Table 2)[5]. In the second-best case scenario growth in 2020/21, including the government's forecast, is expected to be negative 1.5 percent.

Table 2 Forecast of the Economic Effect of COVID-19 by Different Institutions

GDP Growth (Various Estimates)	Previous Fiscal Year 2019/2020		Fiscal Year 2020/21 (Forecast)	
	Without COVID-19 Effect (Earlier Forecast)	With COVID-19 Effect (Latest Estimate)	Pure COVID-19 Effect (From the Base-run)	COVID-19 Effect Included: [Including Gov't 8.5% growth forecast (Best Case Scenario, with Q1 effect only)
Government of Ethiopia (Actual)	9.0%	6.0%		8.5%
World Bank, is for 2020/2021 fiscal yr.	6.0%	2,9%		(0.0) %
IMF, is for 2020&2021	6.0%	3.2%		2.0%
AfDB, is for 2020 &2021		3.6%		5.5%
[Worst case scenario]	7.1%	[2.6%]		[3.1%]
EEA, SAM-based Model, for 2020/21			-5.9 to-6.7	2.6
[Worst case scenario]			[-13.1]	[0.6]
This Study ,2020/2021**			**-6.6**	**2.0%**
[Worst case scenario] *		**2.85%**	**[-10.0]**	**[-1.5]**

**Note: Best case scenario assumes the effect of COVID-19 to be limited to the 1st Quarter of fiscal year 2020/21; while the worst-case scenario, given in [ ], assumes this effect to stay for 1st & 2nd Quarters of 2020/21, its effect in the 2nd quarter being mild, being reduced by 50%.*

*** UNCTAD studies (TDR 2020; McKinley 2021; Cripps, 2021) are not included in the table because they are not directly comparable. These studies use calendar year which matters in particular for the analysis in 2020, especially as their GDP growth estimates were finalized in mid-2020 when the full impact of Covid-19 in the second part of the year was unknown. Accordingly, GDP growth was estimated at 1.95% for 2020; further, following the economic contraction in 2021 the projected average annual growth during 2021 and 2022 was 2.1%percent.*

UNCTAD studies (TDR 2020; McKinley 2021; Cripps, 2021) use the UN Global Policy Model (GPM henceforth), which produces projections for the world economy (including explicitly a sample of

[4] This procedure assumes that the government forecast of 8.5% doesn't include the effect of COVID-19. This presumption of ours is reasonable because, if it does, it implies a 15.8 % growth of the GDP to offset even the minimum COVID-19 effect that we have identified here as the best-case scenario, which is unrealistic.

[5] The forecast in this study is also similar to another estimate I did using a parsimonious African focused dynamic stochastic applied short-run macroeconometric model (see Alemayehu 2021)

African Countries, with Ethiopia one of them). These projections are conditional on a number of assumptions about policy stances, of which the baseline lays out a policy configuration similar to those of this study, and the best case scenario implies a more radical transformation of the African economies along a 'global green New Deal' supported by a sustained global recovery (McKinley 2021; Cripps, 2021).

Having this framework, the GPM based projection for Ethiopia shows Ethiopia's very strong growth rate in real income percapita (at $2015 in PPP) of 4.5 percent per annum (2011-19) before the COVID-19, is projected to decline to (-0.5) percent in 2020-22. It is, however, projected to 'recover' with a 2.5 growth rate of this percapita income in 2023-30 (McKinley, 2021; Cripps, 2021). The outcomes of GPMs projection for low-income oil-importing African countries, that includes Ethiopia, shows that such countries actually make little use of fossil fuels and are thus already closer to being 'carbon-neutral' than higher income economies. In addition, Ethiopia's growth in 2020-30 will see only a minor gain of 0.3 percentage increase compared to the "business as before scenario (BBS) of the GPM's projection. However, in the third "alternative development scenario (ADS) of GPM, compared to the BBS, Ethiopia will get a 6-percentage points increase in its percapita income growth and it will also see a 48 percent increase in its percapita income in 2040. In addition, this scenario shows Ethiopia's intra-regional trade will increase from the BBS scenario of 2.3 percent to 8.6 percent. It will also lead to a decline in its debt to GDP ratio from 81 percent in BBS and "market driven decarbonization scenario (MDDS) to 67 percent in the ADS (see Cripps, 2021 and McKinley, 2021 for detail). This projection is very similar to the projection of growth in this study for 2020/21. A summary of this result and related other projections is given in Table 2. Notwithstanding the realistic picture it gives about Ethiopian condition, the GPM based scenario analysis, however, needs a special policy context that requires understanding the importance of demand-led growth path for recover. The GPM-based analysis, however, has also noted the limitation of this demand-led path for recovery in developing countries that includes Ethiopia (see UNCTAD, TDR 2020). This issue is discussed in section four.

3.3 The Effect on the External Sector and the Implications for Financialization

The External Sector

The external sector (international trade and finance) is also found being vulnerable to the COVID-19 effect in Ethiopia. The sector's vulnerability comes from the effect of COVID-19 on global commodity prices, volume of exports and imports as well as from the disruption of the supply chain that Ethiopia has with its major trading partners that includes China, UAE, Saudi Arabia, Europe and the USA.

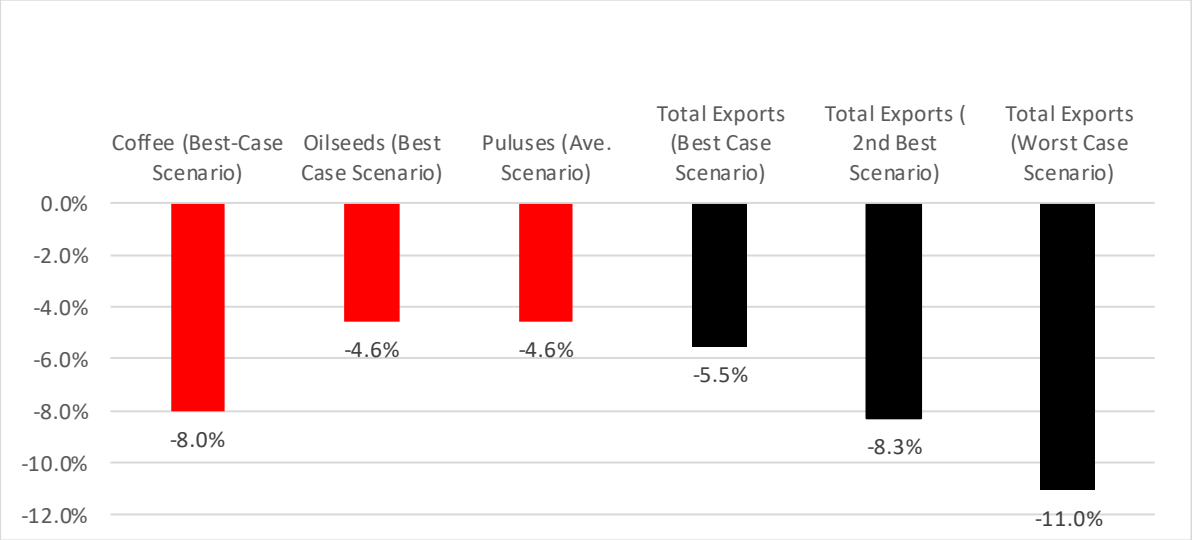
The external sector has also significant impact on the national economy because Ethiopia is overly dependent on imports and external capital inflows (that includes remittance and aid) for its day-to-day survival. Trade and logistic problems in China at the beginning of the pandemic have also affected the Ethiopian external sector (Annex A2). The emphasis on China is important because 62 percent of Ethiopia's imports are coming from Asia which is dominated by China, with 65 percent of this. This is followed by Europe at about 20 percent. In addition, 42 and 25 percent of Ethiopian exports are also destined to Asia and Europe, respectively. Unfortunately, these are countries that were hit heavily by

the virus, at the initial stage of the pandemic in 2020. Data on African exports and imports, commodity prices and volume of export that are compiled from March to date by UNCTAD and local and web-based sources are used to examine this external shock on Ethiopian exports, imports and its implication for major balances of the macro economy. In addition, WTO's forecast about global trade as well as information on shipping lines logistic problem in China are also used in this analysis (see Annex A2 and Alemayehu, 2020). With this information the COVID effect on exports, imports and the balance of payment are examined using our national accounts macroeconomic framework.

Exports: in addition to international global trade forecasts, information about horticulture (flower included), Chat/Khat and leather and leather product export decline, as wells as the trend of the rest of export commodities as reported in the latest government report (NBE, 2020) are used for this analysis. Local disruption on transport and labour supply on export goods producing and processing areas of the country due to the partial lock-down measure during the initial months into the pandemic have also led to a decline in volume of exports and considered in the analysis. On the basis of this information (given in detail in Annex A2) export revenue in 2020/21 is expected to decline by 5.5 percent in the best-case scenario. In the second-best and worst-case scenarios, it is expected to decline by 8.3 and 11 percent, respectively (Figure 2).

Among the major contributors to the decline in total exports, the export revenue from coffee, the dominant contributor to total exports at 35 percent, is leading this by declining at 8 percent in the best-case scenario. This is followed by a decline in oilseeds and pulses by 4.6 percent each in the best-case scenario (Figure 3). The latest data for the last fiscal year (2019/20) shows a 12 percent growth in export revenue, which is surprising given that this fiscal year included one month from quarter three and the whole of the 4th quarter that saw the effect of COVID-19 (NBE, 2020). However, closer examination shows that this export revenue growth is primarily driven by unpresented growth of export revenue from gold exports that grew by 604% (from US$28 million to US$197). This figure still has to grow up to its historical value of about US$500 million. Gold export has been reduced to almost zero in the year just before the onset of the COVID-19 problem. Government policy that improved supplier's price to central bank, crackdown on illegal trade, improvement in infrastructure, the COVID-19 positive effect which halted cross-border illegal trade during initial period of border closing-up all contributed to this growth of revenue from gold exports. If this growth rate of gold export, which is clearly an outlier, is left out, exports have declined by 12 percent in 2019/20. This is identical to previous forecast made using the method we have employed in this study (see Alemayehu 2020).

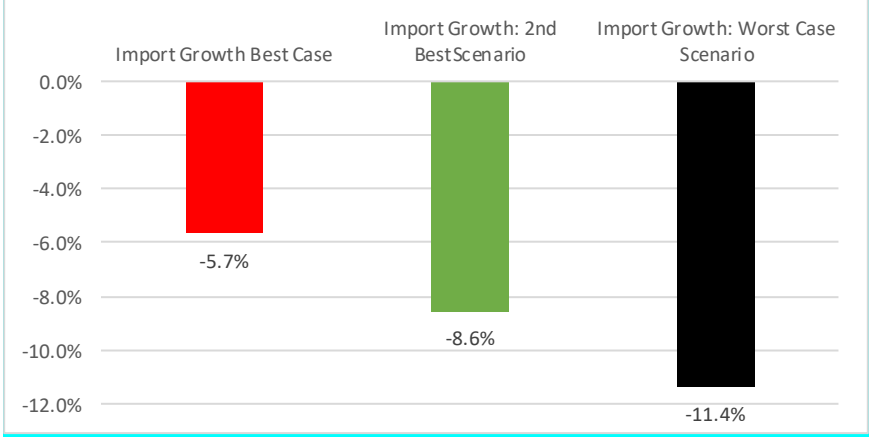
Figure 2: The Impact of COVID-19 on Export revenue (in %, deviation from the base run)



This decline in export revenue will have a negative impact on domestic production, external debt and debt service, and foreign currency availability in 2020/21. It will also have a negative effect on the welfare of people through its effect on income and shortage of foreign currency. The latter invariably leads to currency depreciation which has an inflationary consequence. Combined with the pandemic's effect on imports, the effect of the decline in export revenue on the balance of payment and financialization are briefly examined below.

Imports: the major COVID-19 related challenge in relation to imports had been the disruption of the global logistics and supply chain initially and its lingering effects on volume and price of imported goods later. As that of exports, this disruption is estimated to lead to an average annual decline in volume of imports by 21 percent for Ethiopia as that of other countries with strong ties with China. This assumption is based on the estimates of global trade by WTO and UNCTAD (Annex A2). In addition, the global logistic hurdle is estimated to increase the CIF (cost, insurance and freight) value of imports by about 5 percent, according to international estimates (Annex A2). In addition, the import elasticity of GDP in Ethiopia which is found to be about 0.8 in this study (using a regression analysis). This will also lead to a decline in imports following the COVID-19 effect in reducing GDP growth. Based on this information, the combined effect is to reduce import value in 2020/21 by 5.7 percent in the best-case scenario and by 8.6 and 11.4 percent in the second-best and worst-case scenarios, respectively (Figure 3).

Figure 3: The Impact of COVID-19on Imports



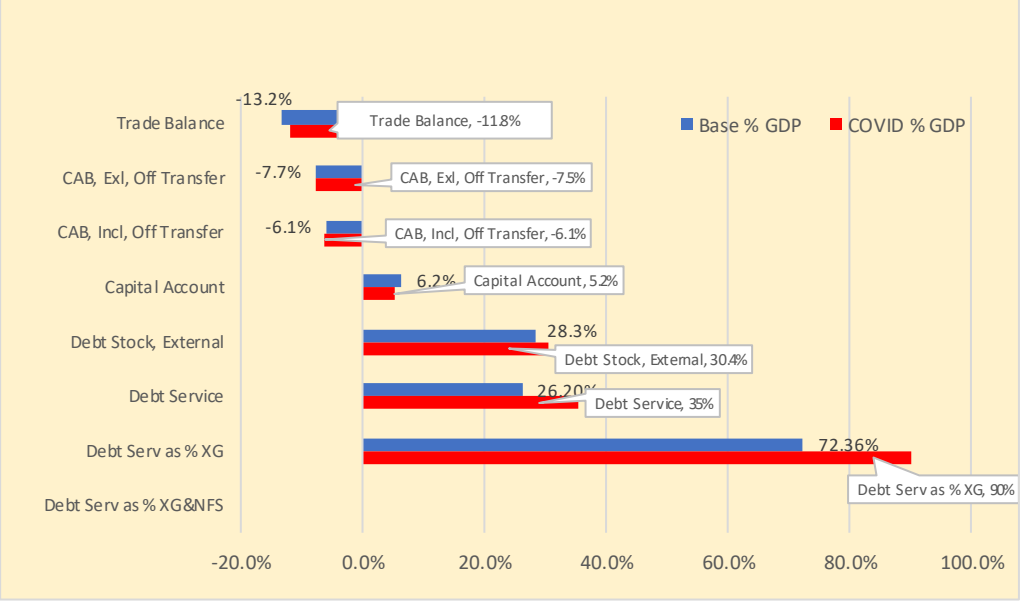
About 80 percent of Ethiopian imports are strategic imports that are needed for development to which the country has inelastic demand ("capital goods", semi-finished goods that includes fuel etc.). Such import demand cannot easily decline during a crisis like this, yet all have shown a decline due to the COVID-19 effect. This has led (and is also leading) to a rise in their domestic prices and is in the course of depressing of planned growth that will eventually reduce the welfare of the majority. The only positive development the decline in the import bill for fuel by about 30 following the outbreak of the pandemic in 2020 (see Annex A2). This latter effect has continued since then (though not as strong as before) and is expected to reduce the country's fuel import bill in 2020/21 by about 15 percent.

The Balance of Payments: the effect of the pandemic on exports and imports above is combined here with its effect on net exports of non-factor services, net transfers as well as the development in the capital account to gauge its impact on the balance of payment. The transport service exports are the most important among services exports. When the Ethiopian Airline (EAL), which is the biggest airline in the continent and the significant player in the service account, decided to stop its passenger travel service initially, the travel account shrank to almost zero in the first two month into the pandemic. The cargo flight service has continued, however. After few months in the crisis, the EAL creatively adapted to the COVID-19 effect by converting its passenger planes to cargo and engaged in offering COVID-19 related freight service, that included delivery of vaccines recently, across Africa. Such cargo service is offered not only across Africa but also to Brazil and other countries in Latin America that opted to use EAL for their shipment from China. As a result, the EAL helped reverse the initial significant looming loss on the service account. For this reason, the transport export sector is assumed to operate by 80 percent of its capacity in the next fiscal year (2020/21), reversing the initial decline in operation at the same rate.

Another important item in the Ethiopian balance of payment is remittance. Its size in the last decade was, on average, twice the size of annual exports. Based on information from local banks and local researchers (Annex A2), remittances are estimated to decline by about 30 percent in 2021. FDI is another important item in the balance of payment of Ethiopia. Based on the actual performance of FDI in the last two quarters of 2019/20 and estimates of the African Union (AU) and UNCTAD for Africa,

FDI in Ethiopia is estimated to decline by 20 percent in 2020/21 (Annex A2). Finally, given the actual out turn of official capital flows and private long terms flows in 2019/20 and 2018/19, the 2020/21 levels are estimated to decline by 10 and 15 percent, respectively (see Annex A2 for detail). The combined effect of all these development in current and capital accounts is to render the balance of payment challenge in 2020/21, whose major features are summarized in Figure 4.

Figure 4: The Impact of COVID-19 on The Balance of Payment



Note: the debt service ratio is defined as debt service (interest and principal) as the ratio of export of goods only

The projected decline in exports that is shown above had the potential to raise the trade deficit of the country. However, the projected decline in imports have more than compensated for this decline in exports, leaving the balance of trade deficit largely unchanged, with one percentage point improvement, in 2020/21. Yet, the trade balance deficit which averages from 14 to 21 percent per annum in the last five years (2015/16-2019-20) is not only significant but also persisted for more than two decades. The trade balance (TB) and balance of payment (BOP) problems of the country are generally structural (inelastic imports and stagnated and declining exports) and an economic shock like COVID-19 simply accentuates such structural problems. For instance, for Ethiopia to have a reasonable trade deficit of about half the current level (about 7 to 10 percent of GDP), its exports need to grow by about 20 percent per annum for at least eight consecutive years. In reality, export growth in the last five years had been about negative 6 percent per annum. This shows, unless a fundamental change comes in exporting, the country is and will still be extremely and structurally dependent on external finance (aid, borrowing, remittance) for years to come – thus this feature will also prevail in 2020/21.

The External Shock and Financialization.: with this BOP features comes financialization which increasingly expressed in low-income countries by the influence of international financial institutions (IFIs) such as the World Bank and IMF as well as influential bilateral donors, which in Ethiopian context are the governments of China, UK and USA. The latter are the major providers of the resources needed to finance the BOP deficit. This finance has a policy conditionality of liberalization attached to it, however. FDI flows are too small (being about 4 percent of GDP in the last five years before COVID-19) to counter the influence of such debt creating flows in Ethiopia. FDI at 4 of GDP is significantly small when compared to the gross investment to GDP ratio of. 38 percent in the same period too (Table 1). The COVID-19 impact has accentuated this dependence on foreign capital inflows by reducing the inflows of such capital because of problems in source countries themselves. To this is added the declining level of remittance, which otherwise were twice the level of annual exports each year. The decline in remittance is the result of the pandemic's effect in the remittance-source countries which are countries in Europe, USA and the Middle East. The challenge of reduced FDI and remittance flows, by making the importance of other capital inflows crucial, is offering the providers of this external funds a leverage over the host country – an indicator of financialization in low-income countries as noted (see UNCTAD, 2020 TDR; McKinley, 2021).

Another indicator of financialization relates to the effect of the decline in exports on debt service ratio. On average, Ethiopia's debt services have reached almost US$ 2 billion per annum in the last three years. This is about two-third of merchandise exports. Since net exports of services were almost in balance in the last decade, the ratio of debt service to exports is a better indicator of the debt servicing burden than the standard debt service ratio, which is the ratio of debt service to the export of goods and services. We estimated the COVID-19 effect will lead to an increase the debt to export of goods ratio from its level in the base run of 72 percent to 90 percent in 2020/21 (Figure 4). This underscores the need to re-schedule or cancel servicing debt as it will be impossible to pay it, given the country's merchandise exports of about US$ 3 billion per year. Thus, the COVID-19 effect is in the course of leading the country to defaulting on the debt already contracted (see also UNCTAD, TDR 2020; McKinley, 2021) – indicating the trend of financialization as the country has already began asking creditors for rescheduling of the debt service payment and restructuring of the debt. If the latter is not successful, , it will require significant reduction of essential and strategic imports and will lead to severe shortage of foreign exchange and imported goods that with further decelerate growth and rising inflation owing to this import compression.

Given the recent 11 percent growth trend of the debt stock that is assumed to continue in our analysis, the COVID-19 effect on the external debt stock is not significant, however. Yet, the COVID related negative development will be raising the external debt to GDP ratio from the base-run value of about 28.3 percent to about 30.4 percent in 2020/21. However, if the country managed to get the loan that it is seeking to fight the effect of the pandemic as well as to execute its new economic policy reform, this would lead to significant increase in the debt to GDP ratio. For instance, the IFIs commitment of about $10 billion in loan to support the ongoing "liberalization" policy and additional money to fight

the effect of the COVID-19 will push the external debt to GDP ratio from the current level of 28 percent to over 47 percent of GDP.[6]

Finally, the general effect of this economic shock on the external sector may also mean the continuation of the foreign currency shortage that was pervasive in the last five years. This problem will continue at a higher rate in 2020/21, especially if capital inflows and remittances are not forthcoming as before. This, on top of accelerating financialization, will also put significant pressure on deprecation of the local currency. The latter is inflationary in an import-dependent economy like Ethiopia where export is also stagnated (see Alemayehu and Kibrom, 2020). The other effect of the pandemic in the external sector is to create shortage of imported finished and intermediate goods that will lead (and also already led) to a rise in the price of imported goods with direct effect on depressing growth and imported inflation. This problem is already surfaced in 2020 as the WB's phone-based survey in the industrial sector revealed. This problem will continue in the 2020/21 too.

IV. POLICY RESPONSE FOR RECOVERY: GOVERNMENT, THE PRIVATE SECTOR AND A POLICY OF DEMAND-LED GROWTH

The economic effect of the pandemic that disrupted production processes has adjustment costs for firms and workers. The government has also implemented various supportive measures to keep firms going and minimize the economic and social cost of the crisis. This policy response will have macroeconomic consequences in 2020/21. Based on the WB pone-based survey and government policy documents, these public and private sector responses and their implications for robust recovery that is tuned the recovery of the global economy are briefly discussed next.

4.1 Response of the Private Sector

So far, private economic agents in the agricultural sector, the rural farm community, are hardly affected by the pandemic in Ethiopia as the virus's effect is primarily limited in urban areas. As a result, rural economic agents have continued working on their farm as usual. This was also helped by finalization of importation of important inputs such as fertilizer by the government ahead of time. The positive development in the agricultural sector is, thus, important for the economic outcome of 2020/21 as it minimizes the expected contraction of GDP, deficit in food supply as well as export revenue.

[6] This becomes even larger, if the official GDP data were not exaggerated as shown in Alemayehu and Addis (2016) and McGregor (2018, cited in Chauffour and Muluneh). Alemayehu and Addis (2016) critically examined this growth exaggeration phenomenon that puts the country's growth at double digit rate for more than a decade, since 2003. They also came up with the most likely growth rate of about 6 or7 percent per annum. Recently, IMF (McGregor 2018, cited in Chauffour and Muluneh, 2019) using data on the intensity of light immitted at night measured by satellites from outer space noted that Ethiopian GDP might have been exaggerated by about 17% since 2008. Adjusting the GDP to such more realistic figures have important implications for some important ratios like debt to GDP and Tax to GDP ratio – where the government usually makes the wrong inference & draws policy based on rations that are based on this exaggerated GDP level (for e.g. If a correct GDP figure is used, Ethiopia's tax to GDP ratio may not be smaller than the SSA average & shows it is a highly taxed economy).

As shown in section two, the pandemic's major effect is concentrated in the service and industrial sectors that are generally located in urban areas. The response of the private economic agents in these sectors could be gauged from World Bank's excellent phone-based survey that was conducted for eight rounds, with two weeks apart, from April 2020 to October 2020. We have also used this data to estimate the impact of the recover on GDP and sectoral growth in section two. Generally, the response of the private sector also helped by government's decision of avoiding full-lockdown measures, quickly reversing its intention of carrying out a full lockdown measure. This has enormously helped the recovery of the economy while also helping citizens to earn a living at the same time.

The major response of the private economic agents to the economic effect of the pandemic which is relevant for our purpose is taken from the WB survey is given Table 3. The survey is based on the response of 550 firms that are mainly drawn from Addis Abeba. Of these, about 100 of them are form other major towns. The sample is drawn from 403,039 establishments in Addis Ababa and 142,170 in the other towns. The data is also collected in the such a way that 20 percent of the firms in each city are operating in the service sector.

Table 3 shows that on the average, 66 percent of firms are back to full time operation in the 8th and final round of the survey that was conducted in October 2020. The highest rate of recovery is found for Small, Medium and Large size (MSLs) firms, followed by Micro firms – the latter are firms that employ less than 3 employees. This rate was only 26 percent during initial period of the pandemic in April 2020 when the first-round survey is conducted. As given in the last column of Table, in the 8th round, for all firms, their average monthly revenue has declined by 59 percent. This average loss was generally smaller in the first-round survey, being about 50 percent. The highest decline in revenue is observed for Micro firms while the lowest for Own Account operators. The recovery in revenue can also be read from the relative size of revenue in the 8th round which, on average became, 4.5 times larger than the level observed in the first round and 3 times that of the fourth round that was conducted in August 2020. The recovery in October 2020 is found being the highest for Micro firms and the lowest for SML firms (Table 3).

Table 3: Firms Response to the COVID-19 Pandemic in Ethiopian (April 2020 -October 2020)

	Firms in Full-time operation, In % (15-21 days in Operation, 2020)			**Recovery in Median revenue last month (2020)**			**%Revenue monthly decline due to COVID-19 in R8 [R1]**
	R1 (April)*	R4 (August)	R8 (December)	R8/R1	R8/R5	Average	
All Firms (550)	28.6	47.2	65.6	4.5	3	3.76	58.8 [50]
Industrial Firms	21.3	41.7	62.8	4.8X	2.4	3.6	51.8 [63]
Service Firms	30.0	48.2	66	4.5X	3	3.75-	55.1[61]
Own-Account Operators	24.0	31,90	54.6	3.57	3.3	3.44	49.2[59]
Micro Firms	29.8	60..3	72.8	5.33	2.4	3.85	56.8 [68]
Small, Medium & Large firms	40.9	62.	83.6	1.43X	1.3	1.36	52.9 [61]

Source: Author's' Computation based on World Bank Phone Survey at www.worldbank.org
Note: R refers to rounds of the survey; thus R1, R2 etc. refer to Round 1, Round 2, etc.

Finally, notwithstanding this recovery, about 19 percent of firms are still closed during the 8th round. It is likely that these firms, most of which are own-account firms, might have totally collapsed according to the authors of the survey. For 90 percent of firms the major damaging factor was demand collapse as emphasized in UNCTAD (TDR 2020). At the latter stage, shortage of inputs and inability to pay invoice became another major problem, especially for manufacturing firms. Firms in the industrial sector highlighted increasing difficulties in sourcing raw materials and intermediate goods – strengthening our argument about the impact of declining level of imports that we noted above: In the 8th round of the survey, 53 percent of industrial firms reported having been affected by higher prices for raw materials and inputs while one third of firms were affected by low supply of these materials.

Regarding firms' reaction about the government support, less than 10 percent of the firms were found to be happy about the government's various fiscal and monetary response measures (see next sub-section) that are aimed at helping them, as the final round survey revealed. In addition, 98 percent did not appreciate the reduction on interest rate as an appropriate policy response – indicating the weakness of interest rate as policy tool in low-income countries too. The exception to these is the 21 percent of firms that were happy about the waving of taxes; the 42 percent of firms that were happy with accessing of loans at zero interest rate and the 29 percent of firms that appreciated access to financial grants.

4.2 Government Response and the Implication for Macroeconomic Stability

The fiscal posture of the Ethiopia government has been precarious for years. It is characterized by significant budget deficit, especially if the financial position of the state-owned enterprises is taken on board. It is also characterized by uncertainty about the level of both public revenue and spending, resulting in requesting supplementary budget each year almost on regular basis. The COVID-19 effect on fiscal deficit will aggravate this precarious fiscal position by leading to a further deficit with implications for its monetization, indebtedness and macroeconomic instability that includes inflation and currency depreciation in 2020/21 – features that characterized the macroeconomy in the last five years.

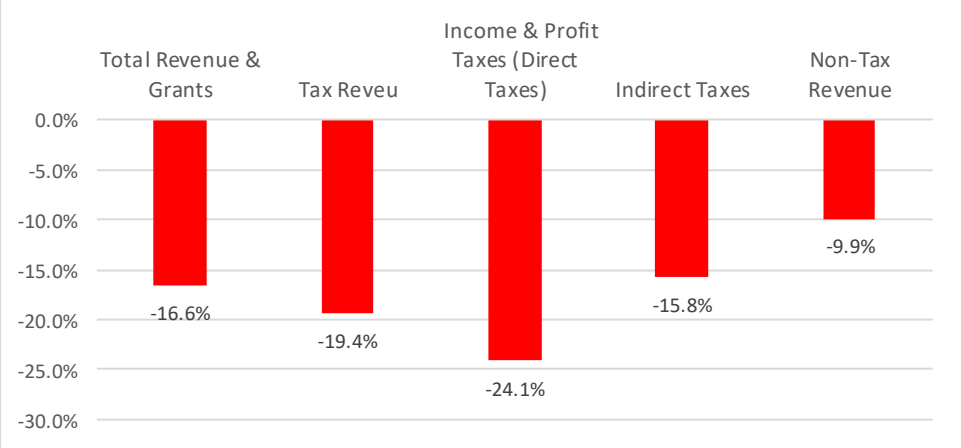
4.2.1. Government Response and its Potential Macroeconomic Effect: Public Finance

Apart from sensitization of the public when the pandemic erupted in March, the government has also made a fiscal response aimed at helping firms cope with the economic effect of the virus. The most notable government measures include the allocation of Birr 300 million (at exchange rate of about Birr 32/US$) to bolster the health sector, the 15 billion Birr injected to the private banking sector, and the 48.6 billion Birr (initially stated as 1.6 billion US$) supplementary budget the parliament approved and earmarked to abate the COVID-19's economic effect. This spending together with the earlier parliament approved supplementary budget of Birr 28 billion means an additional spending of Birr 92 billion that was not envisaged in the budget before the eruption of the COVID-19 pandemic. This led

to an increase in total public expenditure by 23.5 percent, compared to the base run. This is a significant increase when compared to the growth rate of public expenditure in the years just before the pandemic, which was just 17 percent.

In addition, the shrinking of the economy discussed in section two combined with the effect of the pandemic in the external sector is expected to lead to a decline in both tax and non-tax revenue. We have estimated this using the average elasticity of taxes with respect to GDP growth and foreign trade growth (for foreign trade taxes) in the last five years before the Pandemic (Annex A1). The COVID effect is estimated to reduce the total government revenue, including grants, in 2020/21 by 16.6 percent. Taxes and non-tax revenues are estimated to decline by 19.4 and 10 percent, respectively. Indirect taxes and income and profit taxes (direct taxes) are also estimated to decline by 15.8 and 24.1 percent respectively. This is the result of declining activity of firms and hence national income as described so far (Figure 5).

Figure 5: The Effect of COVID-19 on Public Revenue



The combined effect of this hike in public expenditure and the decline in public revenue is to put unprecedent pressure on public deficit and \\its monetization, especially if external resources are not forthcoming in the required level. For instance, with this combined spending and revenue effect of the pandemic, the additional resource needed to cover the expected deficit, just to maintain the fiscal posture that the country had before the virus, will jump to Birr 143 billion, which is 30 percent of the budget approved for the fiscal year 2019/20 or about 7 percent of the GDP of the last fiscal year. This has implications for monetary sector development and monetary policy, which is discussed next.

4.2.2. Government response and its potential macroeconomic effect: monetary sector development

Financing the level of deficit described above in a stable non-inflationary macroeconomic condition will be a major challenge for the government. Given the already high level of inflation that ranged from 20 to 23 percent in the last five years (the food inflation ranging from 23 to 26 percent in the same period), macroeconomic instability that includes further high inflation (in particular food

inflation) is a real possibility that will continue to emerge in 2020/21 as a result of the COVID-19 economic effect and the government's policy response outlined above.

There are at least two alternative policy directions available for the government in financing this COVID-19 instigated deficit. This is assuming away additional domestic resource mobilization over its historic level, given the pandemic's effect on the economy, business uncertainty due to recent conflict in many places and the poor record of the country in that front[7].

The first policy direction is monetarization of this deficit. During the previous regime, the government that was led by PM Melese Zenawi and governed the country from 1991 to 2017 (and lost its power to the current PM Abyi Ahmed in 2028), money supply has been growing by an average annual rate of 30 percent for more than a decade that ended in 2017/18 (2006/7-2017/18). This has resulted in an unprecedented increase in the money supply from a meager figure of Birr 68 billion in 2006/07 to Birr 886.8 billion in 2017/18, thirteen-fold growth in just 12 years. This annual growth rate was about 5 times higher than a healthier growth rate that could have avoided or at least significantly minimized the current double-digit inflation, high debt burden, structural trade deficit and shortage of foreign exchange – in short macroeconomic instability (Table 1 and see also, Alemayehu, 2019c for detail), On the positive side, this period saw excellent growth of the economy at the same time. Though the current government of PM Abyi is in the course of controlling the excessive money supply growth noted above by reducing its growth rate from 30 percent in 2017/18 to 20 and 17 percent in 2018/19 and 2019/20, respectively, this growth rate itself is still on the high side, given the structural food and other necessities supply side problems of the country, especially the poor agricultural sector growth and its productivity that couldn't cope with demand for necessities (food/wage goods) created through the money and credit that is transacted, to which the money supply is endogenously accommodating. Although this monetization is primarily driven by the desire for high growth as shown by the significant investment-saving gap (Table 1), it neither took the structural supply constraints in the food (agriculture) and other wage-goods sectors into accounted, nor invested the "money and credit transacted" in these sectors. This has resulted in the policy dilemma between high growth that created this demand for credit/money supply and low inflation (Alemayehu and Kibrom, 2020). It is at this juncture that the COVID-19 effect is confronted.

Having such precarious macroeconomic condition, full monetization of the deficit is problematic because its inflation consequences could be overwhelming if food supply is not forthcoming in tandem with the food (and other wage good) demand pressure that will be created when this money and credit is transacted/demanded. This hurts the poor and the vulnerable workers disproportionally as the food weight in CPI is about 55 percent and the majority of the population spends the major share of their income on food other necessities. The latter, in turn, could be self-defeating to the whole policy objective of protecting the welfare of the population. Full monetization of the COVID-19 related deficit will increase the broad money supply by about 11 percentage points to the rate of 23.7 percent, which is the average annual growth in the three years before the pandemic, rendering a broad money supply growth rate of about 34.7 percent in 2020/21 it it is accommodating this demand for credit.

[7] Saving and investment as percentage of GDP were about 15 and 38%, respectively in the last 5 years that ended in 2018/19 (see Alemayehu, 2019). Thus, such significant resource gap cannot be corrected in this trying time by raising domestic saving. Here we are also assuming that there are three sources' funds: savings/deposits, foreign borrowing and monetary emission (Fitzgerald, 199, p.89); and the first one is weak.

Given a recent inflation model (Alemayehu and Kibrom, 2020) where the short-run elasticity of inflation with respect to money supply is about 1.1 (the long-run elasticity being about 2) if significant amount of this money is not invested in the food sector, this is a very high level of demand for money/ credit created the accommodation of which through monetization would lead to significant demand pressure on food and other necessities with a consequence for a very high level of inflation in 2020/21.

The second alternative policy is to finance some part of the deficit (say half of this) by looking for external resources (external borrowing or aid). This is helpful to lower the inflationary pressure. Though this second alternative policy could reduce the inflationary pressure, the incoming external resources will increase the monetary base, and would be accommodating the money/credit demand created duet to the COVID-19 fiscal response with implication for inflationary pressure in 2020/21. This is important because the money multiplier of Ethiopia is very high, being 4.42 in 2018/19, and growing by an average annual rate of 4.8 percent in the last three years. The latter is partly the result of. the significant endogenous money creation capacity of banks . For instance, the latest data for 2018/19 shows that loan disbursement by all banks has grown by 43 percent (this being 49 percent for private banks).

Such inflationary pressure might be abated to some degree, if part of the external finance is used either to finance the importation of food and other necessity goods (wage-goods) or used for domestic production of these goods by creating capacity in the agricultural sector, in particular. (see Alemayehu and Kibrom, 2020).

4.3 The Challenge of Demand-led Recovery in Developing Countries

Based on its GPM-based and demand decomposition-based analysis UNCTAD (TDR 2020), inter alia, argued that demand management is an important policy direction for sustainable recovery of the world economy. This is important not only to recover from the global economic shock related to COVID-19 but also, indeed, from the lingering effect of the Global Financial Crisis of 2008/09, according to UNCTAD (TDR,2020). However, this policy alternative is not properly exploited because of many factors that included the ideological bias against using it (UNCTAD, TDR, 2020). Such demand-based recovery is important for Africa because African growth is strongly associated with global price of commodities which in turn is related with sustaining growth in advanced countries, and increasingly, in emerging economies such as China. The relationship between the terms of trade improvement of Africa between 2002-13 and Africa's impressive growth during this time as well as its growth collapse following commodity price sharp decline in 2013-16 attests to this fact (Alemayehu 2029 for detail). Thus, sustained recovery of the world economy as outlined in UNCTAD (TDR 2020) is crucial for countries such Ethiopia and Zambia which are commodity and mineral exporters and their growth is tied to such commodity export revenue.

However, UNCTAD (TDR 2020) also rightly noted (see Ch 2) that a "demand-driven growth path" has some limitation in developing countries because of three peculiar features of this economies: (i) lack of access to foreign currency, (ii) limited industrial capacity and (iii) the risk of debt accumulation. These features are among the major challenges in Ethiopia's attempt to recover from the pandemic's effect. We can highlight these three challenges based on the information in Table 4 which is the result of a decomposition analysis of Ethiopia's recent growth from the demand side.

Table 4 shows Ethiopia's growth between 2015-19 is explained mainly by private consumption growth that accounted for about 80 percent of this growth from the demand side. Gross capital formation (that constitute private and public investment) ranks second contributing 23 to 40 percent in three of the five years. Government consumption ranks third contributing positively in three of the five years. The contribution of private consumption growth is extremely important because in the last five years while GDP grew by average annual rate of 8.7, private consumption was growing closely at about 5.7 percent per annum. The important question is what was the cost of relying on such demand for growth and can we still rely on it for recovery now? The short-answer is, the cost of that in Ethiopia's past growth was very high macroeconomic imbalance that we alluded above (indebtedness, high inflation, trade deficit etc as given in Table 1). It can't be used as such now either because this macro imbalances will get worst unless some global financial resources are available somehow.

The downside of shying away from such demand stimulation is to slow down growth. The impressive double-digit growth of Ethiopia for more than a decade is slowing down in the last two years (Table 4). This is partly because of the decline in the contribution of investment and government consumption from the demand side as given in Table 4. This is the result of a declining level of external resources because of the country's significant accumulation of debt (especially from China). It has also to do with the government's agreement with IFIs in the last three years to pursue tight monetary and fiscal policy, that demanded lesser role of government spending, as part of this agreement (see Alemayehu, 2019) – which is a version of financialization in low-income countries where the principal agents are IFIs. In summary, from this discussion we can distil the three challenges of using demand management for recovery in developing countries outlined by UNCTAD (TDR 2020) above by linking them with real constraint of using demand management for recovery in Ethiopian context.

a) ***The Foreign Currency Problem****:* the UNCTAD (TDR 2020) analysis shows that investment growth by the deficit economies, it its sample of countries to be comparatively lower vis-à-vis their own past. This is the outcome of their past reliance and success in maintaining a borrowing-led growth strategy that slows down investment and growth when a pressure on the balance-of-payments constraint emerges. This what exactly happening in Ethiopia in the last decade. Its impressive growth in this period was accompanied by significant trade deficit of 15 to 20% of GDP (Table 1) and severe shortage of foreign currency. It cannot pursue this path of growth today as in past because availability of foreign currency is not forthcoming at the previous pace, especially from China which was the major provider this debt creating flows (and hence foreign currency). Thus, at the time of writing, private economic agents are in a foreign currency rationing regime, waiting for more than a year to get what they are requesting. The implication of this for growth should be obvious.

b)

Table 4: Demand Side Source and Challenges of Growth (2014-220)

Contribution to Growth	2015/16	2016/17	2017/18	2018/19	2019/20	**Average**
Average Annual GDP Growth	8.0	10.1	7.7	9.0	6.0	8.5
Private Consumption expenditure, final	62.3	46.9	135.8	58.3	90.4	78.7
Gross capital formation (Investment)	23.5	33.6	-42.8	40.1	-53.5	0.2
Government consumption expenditure, final	19.2	7.6	-2.9	-1.6	9.8	6.4
Net Exports of G&S (X-M)	-5.0	12.0	10.0	3.2	53.3	14.7
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Memo (Contribution of)						
Exports of goods and services	-7.7	3.8	37.1	2.0	-7.8	5.5
Imports of goods and services	-2.8	-8.2	27.1	-1.2	-61.1	-9.2

Author's Computation based on WDI, World Bank Data, 2021

c) ***Limited industrial and agricultural capacity and Its Inflationary Consequences:*** UNTAD (TDR 2020) noted that in economic development linked to late industrialization, public policy that directed credit to promote industrial development was successful and created decent job. Such domestic credit policy may not work in a country like Ethiopia unless it is directed at the creation of capacity in industry and agriculture. Even then it will encounter the currency problem noted above unless it is obtained either by foreign borrowing or export development. With 80 of its population engaged in subsistence agriculture where the sector's productivity growth is very close to growth rate of population (Alemayehu and Addis, 2016), lack of capacity both in agriculture (for food supply) and in industries, which are extremely dependent on imported inputs (for supply of necessities), such demand stimulation will be inflationary in Ethiopia with adverse consequence for the majority (the poor) for the familiar Kaleckian reason (Kalecki, 1954; 2006).

d) ***Debt Accumulation and the Implications for Financialization:*** As argued in UNCTAD (TDR 2020) pursuing growth through domestic demand stimulation in countries such as Ethiopia will also leads to external debt and debt servicing, problem, especially when exports are stagnated compared to fast growth of imports as show in this study for Ethiopia. The impact of COVID-19 is to make this debt servicing difficult worst as shown in Figure 5. The accumulation of debt and the related emerging issue of debt servicing in Ethiopia which is claiming nearly two-third of its merchandise trade, is in the course of pushing the Ethiopian government towards a conservative fiscal and monetary policy which is going to "weaken domestic sources of growth and adversely affect economic and social development" latter. Tackling the COVID effect in such context is challenging because of lack of fiscal space with adverse consequence for macroeconomic stability (UNCTAD, TDR 2020).

With these challenges confronted, the most important question is "what is the policy option for recovery that is available for policy makers in developing countries such as Ethiopia?". From the analysis in this study, it is possible to come up with an alternative policy for a non-inflation recovery which is sustainable. This policy directions are offered in the conclusion section, after the socio-economic effect is discussed next.

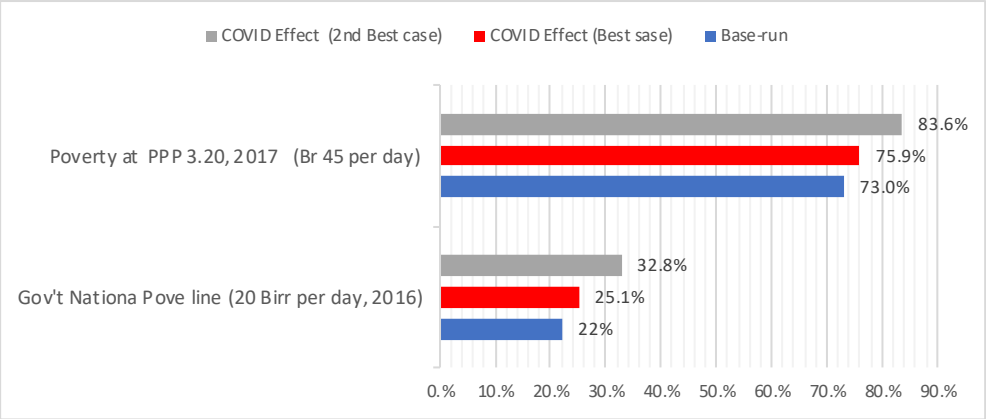
V THE SOCIO-ECONOMIC IMPACT OF COVID-19 WITH GENDER DIMENSION

5.1 The Poverty Impact

Notwithstanding the excellent growth recorded in Ethiopia for more than a decade and half, the majority of Ethiopians live a precarious and poverty-stricken life. Between 2003/4-2019/20 GDP grew at an average rate of 10.2 percent per annum, according to official data. Yet, using the official poverty rate of 22 percent in 2016 (the latest survey data available), about 24.2 million of the estimated 1110 million population of the country live below poverty line. This is quite an understated figure because it is computed using Birr 20 (US$55 Cents) per day per adult as poverty line. If we revise this poverty line to one of the smallest and more reasonable international poverty lines (Birr 45 per day, that is a US$1.25 a day), about 80 million people out of the 111 million people (73 percent) live below this poverty line. Multidimensional poverty rates of the country generally corroborate this latter figure (see Alemayehu & Addis, 2016). The majority of the poor in Ethiopia are subsistent agriculturalists that live in rural areas as well as those persons that are working in the formal sector in urban areas. Thus, these two categories of the population are not only poor but also vulnerable to a small shock such as drought that push them further into severe poverty. The economic effect of COVID-19 is to further aggravated the challenge of poverty, especially in urban areas.

Poverty in Ethiopian, as elsewhere, is a function of income growth that reduces it and inequality that usually accompanies growth, which aggravates it. Previous studies about the elasticities of income poverty with respect to income and inequality shows these values were (-2.3) and 1.2, respectively (Alemayehu et al, 2009). Using the estimated GDP percapita income reduction due to the economic effect of COVID-19 and a population growth rate of 2.6 percent as well as a small rise in inequality assumed to take place during 2020/21 (a one percentage point increase in the Gini coefficient, which is in line with historical data), we have computed the likely effect of the pandemic on poverty. The result shows that the poverty impact of the pandemic is to increase the head count ratio (poverty rate) in the base year by three percentage points, from 22 to 25 percent in 2020/21 in the best-case scenario, which is equivalent to an increase in the number of poor by 3.4 million (Figure 6). Using the international poverty line this is equivalent to a rise in the head count ratio from 73 to 76 percent. In the second-best case scenario, this effect becomes severe leading to a rise in the poverty rate by 10 percentage points to 32.2 percent (and using the international poverty line to 83.6 percent). This is a significant welfare deterioration that reverses the gain that was made through the fast growth in the last decade and half. These indicators generally show the gravity of the problem that the country could face in terms of poverty.

Figure 6: The Poverty Effect of COVID-19 in Ethiopia (2020/21)



5.2 The Labour Market, Jobs and the Gender Dimension of the COVID-19 Economic Effect

Apart from this general picture of poverty given above, the social impact of the pandemic can also be inferred from the profile of the labour force in the country. The labour force is predominantly engaged in the precarious and informal sectors. Such sectors are extremely vulnerable to the economic effect of COVID-19 that generally led to break-up of markets and disrupt of food and essential goods supply chains initially and raises the price of basic goods latter.

UNCTAD's (TDR 2020) analysis noted that if the forces required to global recovery are not strong enough, or run counter to a global demand reflation, the principal victims could be small and medium-scale firms (SMEs), those operating in the informal sectors as well as those that are self-employed and ordinary workers. This is in addition to the effect of the pandemic on employment which emerged from the lockdowns, partial or full, measures as well as their effect on upsetting and in some cases destroyed informal networks to (UNCTAD, TDR 2020). These effects seem also to be found in Ethiopia condition, as our projection the effect on these categories of labour shows next (Table 5).

About 80 percent of the Ethiopian population (88 million) lives in rural areas. These are predominantly subsistent small holder farmers. We have assumed that all mitigation efforts undertaken and the limited rural-urban linkage have made the pandemic to have little effect on income of the rural population. This is a resendable assumption as we observed no major problem in the agriculture sector since March 2020 to date. The fact that the pandemic occurred about three months before the beginning of work for the main (*Meher*) agriculture season (June-July) that contributes to about 97 percent of total crop (& cereal) production; and that the 2019/20 *Meher* harvest is already collected in December 2019 to January 2020, before the onset of the pandemic in March 2020, has also helped this. With this in place, the focus about the focus of the analysis about the social impact of the pandemic in this study is on urban population which is estimated to be about 22 million. The urban dwellers are the primary victims of the virus' economic effect as they are engaged in the industrial and service sectors of the economy that were hit by the economic effect of the pandemic severely. In addition, about 36 percent of the work force in the urban areas is engaged in the informal sector and

these are one of the most vulnerable groups in urban areas that usually lead a hand-to-mouth existence (Alemayehu, 2018).

With an urban population of 18 million according to the 2018 "Urban Employment and Unemployment Survey" (UEUS), the urban areas have about 15 million working age population[8]. Among these work force, half of them, 7.5 million, are employed. Of these, 3.9 million (52 percent) are paid employees that work in the government and private sectors. Another 3 million (41 percent) of the paid employees are "self-employed" and about half a million are "unpaid family workers". Among the 3.9 million paid employees, about 1.8 million of them (46 percent) are working for the government, of which the employees of parastatals are about 543,000 (Alemayehu, 2018). Since the government have decided not retrench workers from the beginning of the COVID-19pandemic, the 1.8 million public sector workers were the better protected employees in the country.

The UEUS survey-result also shows that, about 1.5 million workers are employed in the formal private sector. Using the employment elasticity of each sector and the estimated contraction of the economy in this study, about 332,000 of the paid employees could potentially lose their job in 2020/21 (Table 5). These workers would be vulnerable for job loss if their private sector employers couldn't run their businesses at a level that prevailed before the pandemic. This is an average employment decline of 8.4 percent (Table 5).

Table 5 further shows that the COVID-19 socio-economic effect has a gender bias as the decline in female employment at 8.2 percent among the paid employees is larger than that of males, which is 7.4 percent (Tables 5 and 6). This is the result of the disproportionate decline in female employment expected to happen in the "accommodation and food services" and "households as employers" sub-sectors. As shown in Table 5, as a result of this COVID-19 related job loss, paid employees may lose 3.7 billion Birr per month, the loss for the male workers being twice that of the females. This income loss is the highest in the construction sector, followed by the manufacturing and the "transport & storage" sub-sectors (Table 5).

[8] At population growth rate of 2.6 percent, this urban population could be about 22 million today.

Table 5: Expected Income loss in Urban Vulnerable Sectors (Paid Employees, in millions of Birr per month).

Urban 2018	Total paid Employees	Mean Monthly Income	Income Loss (in Million Bir Per Moth)	Decline in Employment Due to COVID-19Effect (Nos)		
				Total	Male	Female
Total Employed Population	3,932,003	3,132				
Agriculture	82,495	2,505	190	-6,600	-3,300	-2,535
Manufacturing	387,725	2,314	718	-77,545	-38,773	-31,395
Construction	345,556	3,247	898	-69,111	-34,556	-14,118
Wholesale & retail, repair of motor vehicles	199,367	2,162	362	-32,156	-16,078	-12,991
Transport & Storage	242,030	3,439	698	-39,037	-19,519	-3,489
Accommodation & food services	195,462	1,422	233	-31,526	-15,763	-22,020
Information &Communications	78,781	3,711	245	-12,707	-6,353	-5,793
Households as employers	385,578	1,018	331	-60,106	-30,053	-48,355
Total**			3,675	(-328,787)	(-164,394)	(-140,696)
Rate of decline compared to pre-COVID-19(%)				(-8.4%)	(-7.4% (	(-8.2%)
Self-employed (total before COVID-19 were 3,081,559)				(-684,791) (-22.2%)	(387928)	(296,863)
Member of Small and Micro Firms (total before COVID-19 were 63,492)				(-11,725) (-15.6%)	(8,090)	(3,635)
Total employment loss among the employed				(-1,013,578)		

*Note: *There were 385,578 households as employers among the 3.9 million employed population. I have assumed here that half of this people will lose their job with partial lock down effected initially. **Note also, this data doesn't include the 3.1 million self-employed workers, among these 7.5 employed persons in urban areas but includes sub-sectors that are in the public sectors. With assumption of fairly similar average income in the two groups (public and self-employed), the effect that could be obtained by including one and excluding the other is assumed to offset each other. Not also that only sectors expected to see a reduction in labour force are reported in this table.*

The estimated potential job and income loss estimated to occur in 2020/21 as given in Table 5 did not happen by the time of writing this report yet, because of two factors. First, as part of its policy response to the pandemic, the government passed a law that prohibits firms to fire workers during the pandemic. Second, after the initial one to two months into the pandemic, firms began to recover and continued their operation that also helped this. According to the World Bank phone-based survey, mentioned in the previous section, between the first round (April 2020) and the last 8th round of the survey (October 2021), 66 percent of firms were back to full-time operations, up from 29 percent during the early days of the pandemic. However, in the first and last round phone-based survey, the average number of payroll employees decreased from 4.4 in the first round to 3.5 in the 8th round –

this is a 22 percent decline. This decline in employment was the highest in firms with higher baseline levels of employment (small, medium and large firms in the industrial sector) according to the survey data.

In addition to this, there are also 3.1 million self-employed workers in urban areas. These are the second group of workers that are vulnerable to the economic impact of COVID-19. As given in Table 5, the job loss among the self-employed and small and micro firms, which is estimated to be 22.2 and 15.6 percent, respectively in 2020/21, shows that the job loss effect of the pandemic could be disproportionately large among these categories of employees.

Table 6: Some Indicators of the Gender Dimension of the COVID-19 Effect on the Economy (Urban Paid Employees, 2018)

	Total	Male	Female
Sector with highest decline of female employee			
Accommodation & food service (paid employees)	(31,526)	(15,763)	(22,020)
Households as employers (paid employees)	(60,106)	(30,053)	(48,355)
Total, decline ((paid employees, in millions)	(328,787)	(164,394)	(140,696)
Rate of Decline, paid employees	-8.38%	-7.44%	-8.22%
Momo: Total employed in Urban Ethiopia, 2018			
Total Paid Employees (in millions)	3,928,417	56%	
Self Employed (in millions)	3,081,559	55%	
Other Indicators of Gender bias in the 2018 Urban Employment and Unemployment Survey			
Female to Male Ratio is the highest among the employed			
Unpaid family workers (employed) (F/M ratio)	1.40		
Domestic Employees (paid employees) (F/M ratio)	4.12		
Average Motherly earning among paid employees	3,216	3,716	2,524
Female's earning share			67.9%

The gender dimension of the socio-economic effect of COVID-19 could also be read from Table 6 which shows the salient gender dimension of the effect of COVID-19. Generally, the Ethiopian labour market is biased against females. For instance, the urban unemployment rate for females at 26.1 percent is twice that of males, which is just 12.2 percent, according to the official data (see Alemayehu, 2018). As Table 6 also shows the profile of the labour market shows the gender bias in employment and average earning too. In all sectors, except in "domestic employees" and "unpaid family workers" categories, employment is dominated by males. These later sectors are sectors where average earnings are the lowest and working condition are not conducive either. Even, for those who are in the paid employees' category, the average monthly earning of females is only 68 percent of their male counterpart (Table 6).

Table 6 further shows other indicators of gender-bias that could make the burden of the COVID-19 economic effect on female workers, compared to their male counterpart, heavier. First, both in the

category of paid employees and the self-employed, employment is dominated by the male workers, their share in total employment being 55 -56 percent. In addition, in some sub-sectors which poorly pay or doesn't pay at all, such as "domestic employees", an "unpaid family workers", the female to male ratio is 1.4 and 4 to 1, respectively. The effect of the COVID-19 shock is, thus, to push such meager-income earning female workers further down the earning ladder. Second, the sectors where female workers are the largest (like "accommodation", "food services", and "households as employers") are much more prone to the COVID-19 economic effect. Third, female workers on average earn only 68 percent of what a male worker earn and twice unemployed compared to males as noted. Thus, the effect of the COVID-19 related shock on female worker is likely to be generally stronger (Table 6).

In sum, despite the recovery of most firms since the early days of the pandemic, earnings remained substantially below last year's level for most firms according to the latest survey that is conducted in October 2020 (round 8), and firms continue to be affected by weak demand for their products and services. In addition, most firms, especially in the industrial sector, have encountered high cost of some inputs and shortages in others. Given this condition, and our estimate of the economic slowdown as discussed in detail in sections two and three above, the job loss among the employed people in 2020/21 due to the COVID-19 economic effect, as given in Table 6, could be about one million workers. The profile of the Ethiopian urban labour market briefly given above also shows how vulnerable the majority of the urban population are to the economic effect of COVID-19 because more urban workers are working in sectors that are vulnerable to the economic effect of COVID-19 such as the service and informal sectors. In addition, even those who could work during this time earn, on average, only Birr 3,132 (US$ 76) per month. This means the majority leads a hand-to mouth existence for which a mild shock such as inflation has serious effect on their wellbeing. When the gender-bias of the Ethiopian labour market is added to this, the burden on female workers becomes even heavier.

VI CONCLUSION AND POLICY IMPLICATIONS

In conclusion, the analysis in this study shows that the Ethiopian economy is going to face significant negative economic shock that is related to the economic effect of COVID-19. There is no room for complacency, incompetence or uninformed decisions. The consequences of such actions could be devastating especially at this extraordinary time. Decisions must be guided by evidence, knowledge and good judgment and planning. The challenge the country is facing and going to face in the coming years is so great and the potential consequences for the poor very bad that calls to an exceptional and bold politico-economic approach to rise to the challenge and avoid the precipice. This means above all the political determination to run the economy with the attitude, conviction and commitment akin to "an economic state of emergency" until the threat of the virus subsides is crucial.

In sum, the macroeconomic effect of COVID-19 in Ethiopia is to reduce growth, exports, imports and public revenue. It will also lead to an increase in public expenditure, public deficit, external debt and debt-service ratio. The combined effect of all these may lead macroeconomic instability that includes inflation, shortage of foreign exchange and a pressure on balance of payment in 2020/21 unless it is wisely managed. The macroeconomic balance of the country is already in a precarious condition before the pandemic's effect. The effect of the latter is to accentuate that situation in the coming years.

From macroeconomic stability perspective, financing the level of deficit described in this study is a major challenge and policy dilemma for the government of Ethiopia in 2020/21. Given the already high double-digit inflation, shortage of foreign currency and debt and debt service challenges macroeconomic instability that includes further high inflation (in particular food inflation) and the continuation of the shortage of foreign exchange are real possibilities that will continue to emerge in 2020/21 as part of the economic effect of COVID-19 and the government's policy response outlined in this study.

The macroeconomic challenges of dealing with the pandemic's effect that is facing the country shows stimulating the economy through public expenditure is not as easy as in advanced countries. This is primarily because of sever supply bottlenecks on the production side. In addition, there is lack of fiscal space to deal with the economic shock without leading to macroeconomic instability that included indebtedness and inability to service the debt already contracted. In particular, unless significant amount of the fiscal resources allocated to deal with the effect of the pandemic are directed towards increasing food supply, including through import substitutions, especially in necessity goods, along the Kaleckian (1954) line, the danger of macroeconomic instability is looming on Ethiopia in the coming few years, including 2020/21. On the other hand, conservative fiscal and monetary policy to achieve stability is a policy dilemma for the government as its leads to slowdown of growth and employment. Thus, the general policy directions that avoids or at least minimize this potential macroeconomic instability and slow growth is to pursue a mix of policies that may be referred as heterodox. These policies could be inferred from the analysis in this study as well as the global analysis contained, for instance, in UNCTAD (TDR 200). The list of this shot-term policies includes the following (the long-term solution being structural transformation):

- *Expenditure switching:* this means the government needs to revise its book and postpone and switch some of the less urgent items in the current budget, and shift the resources to fund the COVID-19 related programs. This is especially true now because the health effect of the virus is becoming very severe in Ethiopia at the time of writing this report, even compared to the initial days of the pandemic.
- *Avoiding slowdown of growth at the same time*: the expenditure switching policy and the attempt to reduce spending and pursue conservative fiscal and monetary policy has the down side of slowing growth (i.e., there is a trade-off between growth and macroeconomic stability in this context). This trend of growth slowdown is already observed in the last two years. This slowdown is going to be heightened by the economic effect of COVID-19. Thus, as suggested in UNCTAD (TDR 2020), avoiding slows down of growth in Ethiopia requires "resolving the financial bottlenecks [which in turn] requires support from global macroeconomic conditions and some degrees of financial insurance, either regional or global. The binding constraint is thus the level of global support to growth and stability, a question of political economy".
- *Avoiding or minimizing full-monetarization of the deficit:* our analysis shows that full monetization of the deficit will lead to a very high inflation and, hence, need to be avoided since the supply bottleneck in the agricultural sector cannot be solved in the short-run. This is important because inflation in Ethiopia invariably hurts the poor (which are a significant majority using our international poverty line) . Inflation is also one of the major reasons for general macroeconomic instability in the country.

- In relation to inflation, it is also important *to avoid devaluation* no matter how high the parallel market rate premium and the pressure from IFIs are until the virus's effect subsides. This is because it exacerbates inflation without improving the balance of payment problem as Ethiopia's import demand and export supply are structurally inelastic and cannot respond to devaluation in the very short-run. In addition, a recent inflation model also shows the elasticity of inflation with respect to devaluation is very high (Alemayehu and Kibrom, 2020).
- *External financing is important* as long as a good part of the resource obtained is used to import food and related essentials and/or are used to boost domestic production capacity of food and essential consumer goods. Even monetization of the deficit could be effective and non-inflationary if the money (credit) is directed to boost food production directly, as the inflation model noted above also shows (Alemayehu and Kibrom, 2020).In general, an increase in food supply is key for financing the COVID-19 instigated public deficit within a non-inflationary macroeconomic environment. Non-inflationary environment is also key to avoid pressure on exchange rate depreciation which may lead to a "depreciation-inflation" cycle. External assistance will also avoid the problem of getting complementary foreign currency, compared to domestic credit-based stimulation of the economy.
-

With these challenges and the precarious balance of payment features of Ethiopia that will be accentuated by the effect of COVID-19 comes the issue of financialization. The latter is expressed through the influence of international financial institutions (IFIs) as well as influential bilateral donors that are providers of significant finance to address the persistent trade deficit problem of low-income countries such as Ethiopia. This calls for an alternative and conducive global financial infrastructure that could help developing countries such as those in Africa.

In addition to the macroeconomic effects discussed so far, one of the major possible socio-economic effects of the pandemic in Ethiopia is the increase in the poverty rate by at least three percentage points next year. This effect may go as high as 10 percentage point increase in the 2nd best-case scenario. The analysis also revealed that the COVID-19 effect may lead to a potential loss of 329,000 and 685,000 jobs among "paid employees" and the "self-employed", respectively, in 2020/21. This potential job loss totals about one million – being a 14 percent decline (this potential job loss for the "self-employed" and "small and micro firms" being 22.2 and 15.6 percent, respectively). This potential job loss is also found to be biased against female workers too. This is because there is a structural bias against female workers in the Ethiopian labour market before COVID-19 as expressed by average earning differential and the differential in the rate of urban unemployment that will be further accentuated by the economic effect of the COVID-19 related job loss. Notwithstanding this potential loss, its probability of occurrence in 2020/21 is minimized thanks to the new law of the government that prohibited firing workers during the period of the pandemic and the gradual recovery of firms which is documented in the study. However, despite the recovery, earnings of firms remained substantially below last year's level according to the latest survey. Firms continue to be affected by weak demand for their products and services. In addition, most firms, especially those in the industrial sector, have encountered high cost for some of the inputs and shortages of others. Given this condition, and our estimate of economic slowdown in this study the possibility of job loss may continue until the end of 2020/21 and beyond. In addition, even those who could be employed earn, on average, only Birr 3,132 (US$ 76) per month. This means the majority of workers are leading a hand-to mouth existence for which a mild shock such as inflation has serious effect on their wellbeing.

When the gender-bias of the Ethiopian labour market is added to this, the burden on female workers becomes even heavier.

The policy direction that could be considered to minimize the socio-economic effect of the pandemic is to make sure that the work force and firms are fully recovering so that people are earning a living. This is particularly difficult for small business owners, including the self-employed. A closer follow up of the firm's recovery and supporting them in that process is crucial. In all its policy direction paying a special attention to the gender dimension of the pandemic is also very important. The motivation to do this by the government was very strong initially but faded away over time. Given the re-emergence of the virus rather vigorously at the time of writing, it is imperative to give full attention (both form health and economic perspective) to this issue afresh again.

More generally, as noted by UNCTAD (TDR 2020), moving in the direction of the growth revival calls for policy focus and bold measures related to informed economic planning, industrial policies and raising agriculture productivity in Ethiopia. Internationally, policy coordination that takes on board the structural constraints of low-income countries will be needed. "In the absence of a radical transformation of the global financial architecture that would allow developing economies to overcome their structural balance of payments constraints, the only road to avert a continuing global slump is a global reflationary push driven and sustained by a robust growth of public sector demand in developed economies" (UNCTAD, TDR 2020), which is crucial for a rise in global price of commodities with positive implications for African growth prospects in the short run.

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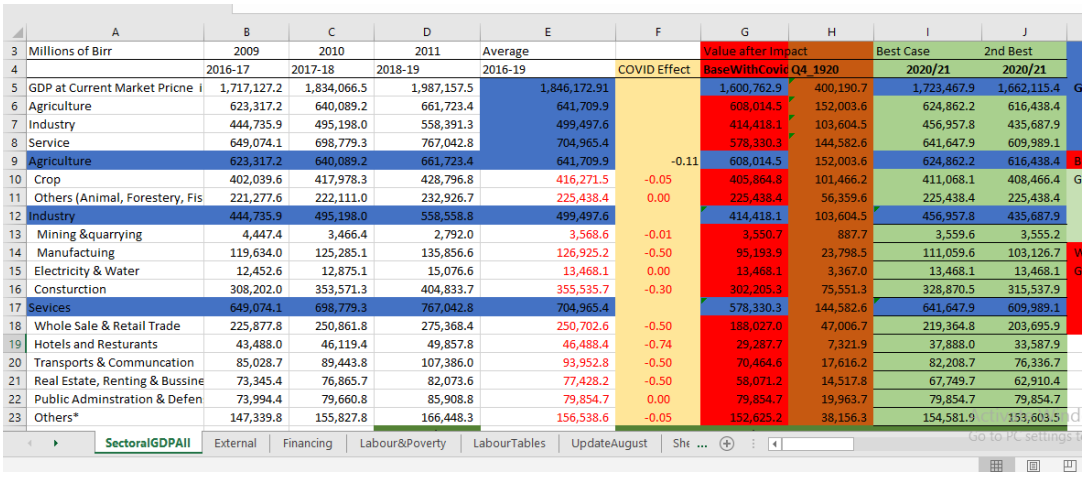
Appendix

Annex A1: Method of Analysis

An Excel-based Consistent National Accounting Framework (NAF) database where each "sheet" in the Excel file is devoted to "GDP &sectoral output", "external trade and balance of payment", "public finance"," labour market and Poverty" data is constructed for use in the analysis of the economic effect of COVID-19 in Ethiopia (Figure A1). Each of this Excel- "sheet" are linked with each other obeying the NAF relationships and parameters derived from previous partial equilibrium studies. The COVID-19 related shock that are documented in Annex A2 below are incorporated in this "National Accounts Framework" by taking the major macroeconomic variables in the three years before COVID-19 (2016/17-2018/19) as the base run. The result reported in the main documents are given as the effect of this COVID-19 related shocks on the economy that are set as a deviation from this base run (or business as usual situation).

Figure A1: The Consistent National Accounting Framework used for the Analysis



	A	B	C	D	E	F	G	H	I	J
3	Millions of Birr	2009	2010	2011	Average		Value after Impact		Best Case	2nd Best
4		2016-17	2017-18	2018-19	2016-19	COVID Effect	BaseWithCovid	Q4_1920	2020/21	2020/21
5	GDP at Current Market Prices	1,717,127.2	1,834,066.5	1,987,157.5	1,846,172.91		1,600,762.9	400,190.7	1,723,467.9	1,662,115.4
6	Agriculture	623,317.2	640,089.2	661,723.4	641,709.9		608,014.5	152,003.6	624,862.2	616,438.4
7	Industry	444,735.9	495,198.0	558,391.3	499,497.6		414,418.1	103,604.5	456,957.8	435,687.9
8	Service	649,074.1	698,779.3	767,042.8	704,965.4		578,330.3	144,582.6	641,647.9	609,989.1
9	Agriculture	623,317.2	640,089.2	661,723.4	641,709.9	-0.11	608,014.5	152,003.6	624,862.2	616,438.4
10	Crop	402,039.6	417,978.3	428,796.8	416,271.5	-0.05	405,864.8	101,466.2	411,068.1	408,466.4
11	Others (Animal, Forestery, Fis	221,277.6	222,111.0	232,926.7	225,438.4	0.00	225,438.4	56,359.6	225,438.4	225,438.4
12	Industry	444,735.9	495,198.0	558,558.8	499,497.6		414,418.1	103,604.5	456,957.8	435,687.9
13	Mining &quarrying	4,447.4	3,466.4	2,792.0	3,568.6	-0.01	3,550.7	887.7	3,559.6	3,555.2
14	Manufactuing	119,634.0	125,285.1	135,856.6	126,925.2	-0.50	95,193.9	23,798.5	111,059.6	103,126.7
15	Electricity & Water	12,452.6	12,875.1	15,076.6	13,468.1	0.00	13,468.1	3,367.0	13,468.1	13,468.1
16	Consturction	308,202.0	353,571.3	404,833.7	355,535.7	-0.30	302,205.3	75,551.3	328,870.5	315,537.9
17	Sevices	649,074.1	698,779.3	767,042.8	704,965.4		578,330.3	144,582.6	641,647.9	609,989.1
18	Whole Sale & Retail Trade	225,877.8	250,861.8	275,368.4	250,702.6	-0.50	188,027.0	47,006.7	219,364.8	203,695.9
19	Hotels and Resturants	43,488.0	46,119.4	49,857.8	46,488.4	-0.74	29,287.7	7,321.9	37,888.0	33,587.9
20	Transports & Communcation	85,028.7	89,443.8	107,386.0	93,952.8	-0.50	70,464.6	17,616.2	82,208.7	76,336.7
21	Real Estate, Renting & Bussine	73,345.4	76,865.7	82,073.6	77,428.2	-0.50	58,071.2	14,517.8	67,749.7	62,910.4
22	Public Adminstration & Defen	73,994.4	79,660.8	85,908.8	79,854.7	0.00	79,854.7	19,963.7	79,854.7	79,854.7
23	Others*	147,339.8	155,827.8	166,448.3	156,538.6	-0.05	152,625.2	38,156.3	154,581.9	153,603.5

SectoralGDPAll | External | Financing | Labour&Poverty | LabourTables | UpdateAugust | Shr ...

Previous studies show that the Urban GDP is about 54 percent of the national GDP, of which Addis Abeba's share is about 35 percent (Alemayehu and Daniel, 2011). This has reached about 69 percent in 2018/19 for which year we have latest GDP data. In this study the average of these two figures, 60 percent is assumed to be the share of the Urban GDP in total GDP. Again, the same study shows that the total backward and forward linkage of the Urban and Rural areas shows that if the urban economy is totally de-linked from the rural, it will have a combined demand and supply shock on the rural economy of negative 11 percent, while the effect of the rural on the urban is just negative 3 percent. Since, the COVID-19 related economic shock is primarily and disproportionately affected the urban economy (industry and services), we have used the effect of this negative shock on the urban sector to feed into the rural (agricultural) sector by the above rate as given in equation [2]. This is in turn feeds back on GDP growth through the share of agriculture in GDP as summarized by equation [1]

$$y = \dot{Y} = \beta_1 \dot{A} + \beta_2 \dot{S} + \beta_2 \dot{I} \qquad [1]$$

This implied, $\Delta A = -11\%\Delta(S + I)$ [2]

Where a "dot" over a variables and small letters shows growth rates; Y=GDP; A=agriculture, S=Service and I=Industry

Having this relationship, we have further presumed that the industrial and service sub-sectors (such as construction, manufacturing, trade, hotels, the travel industry etc.) are affected differently and disproportionally by the pandemic. The details of these assumptions as well as the source for that information is given in Annex A2 below. These sub-sector shocks/innovations are finally aggregated to the three sectoral levels given by equation [1].

This supply side determination of output doesn't normally become equal to the demand side of GDP which is given by equation [3]

$$Y^{DD} = C + I + G + X - M + N \quad [3]$$

Where N=Net factor payment and current transfer from abroad; C consumption, I investment, G government expenditure, X and M are exports and imports of goods and services and the superscript "DD" and "SS" denoting demand and supply, respectively.

In additions to shocks directly introduced to imports as given in Annex A2 below, imports are also linked with the growth rate of GDP as given by equation [4] as follows,

$$\Delta M = \beta_0 + \beta_1 Y + \text{(others as determinants of import as given in Annex A2)} \quad [4]$$

We have captured the balance of payment effect by introducing shock to exports, imports, and "N" as given in Annex A2 below. This will also affect GDP from the demand side. The two side of the GDP (the SS and DD side) may not be equal. They are reconciled by taking the minimum of the two. This is because whichever is the minimum, will set a constraint on the other. Thus, we employed:

$$Y(actual) = Min[Y^{DD}, Y^{SS}] \quad [5]$$

Public Finance, Deficit Financing and Inflation

Here we have linked all the variables in the Excel platform of the databased by defining (and hence linking) public revenue(T) and public expenditure (G) as a function of GDP (Y) growth. Domestic public revenue is linked with GDP growth while foreign trade taxes are linked with trade growth (M) as given by equations 6 to 8.

$$T\ (domestic) = \beta_1 Y \quad [6]$$

$$T\ (Trade) = \beta_1 M \quad [7]$$

$$G = \beta_1 Y \quad [8]$$

The financing and balance payment implications of the COVID-19is finally set to lead to a rise in broad money supply (M2) if monetization of deficit is carried out – which is the most likely scenario in Ethiopian condition. This in turn is linked to an inflation model using the elasticity of inflation to money supply taken form the recently estimated autoregressive distributed lag (ARDL)based inflation model (Alemayehu, 20201) to gauge the inflationary implication of the pandemic as follows:

$$inflation = \beta_0 + \beta_1 Money\ Supply + \beta_2 Exchange\ rate + \beta_3 Food\ Suplly \quad [9]$$

Social Impact:

Elasticity of employment to sectoral and sub-sector GDP and elasticity of the poverty rate to per capita income and inequality are used to estimate the social effect of the pandemic as follows:

$$\Delta Employment = \beta_1 \Delta(Sectoral\ GDP) \quad [10]$$

$$\Delta Poverty = \beta_1 + \beta_1 \Delta(Percapital\ GDP\ Growth) + \beta_1 \Delta(Gini\ Coefficent) \quad [11]$$

Parameters required for this purpose are taken from previous studies of the author given in the reference. When that is not available, such as elasticity for public revenue and imports, a simple OLS regression-based parameters are used.

Annex A2

Data and Source of Data Used to Capture the COVID-19 Economic Shock levels for the simulation Exercise

The following data and data sources are used as indicators of COVID-19 related economic shocks that we have captured and simulated in our National Accounting Framework databased (NAF) explained in Annex A1:

[A] Trade: Exports and Imports

a) **Coffee:** The average of the Int'l price increase, 11.8% and the domestic price decline 10-20% reported by International Growth Center (IGC) which offers an average decline of 3% is used for the period under analysis (2020/21). The estimated volume decline of coffee is taken from the same source, IGC research that reported a 30% volume decline (IGC, Seneshaw and Tewodros, June 2020).

b) **Agricultural exports:** Agricultural export price is the average relevant prices for Ethiopia from trade economics database at "tradeconomics.com" shows a2.89% increase. This is taken with UNCTAD forecast for LDC export price for agricultural products, which shows a 4% increase. The two will average to about a 3.5% price increase which is used in this study. For volume change, UNCTAD forecasted the African Export to decline by 36% in 2020/21. Because exports (excluding gold) have decline Ethiopia in 2019/20 by 12%, according to the government recent data, the average of the two, which is about 21% decline is used for our study.

c) **Gold:** Before COVID-19, gold export volume had a trend decline of 70%. The volume has increase recently because of the COVID-19 effect and government policy that improved the purchase price of the central bank. As a result, the previous trend reduction of 70% from the base run in the early days of the pandemic id reduced down to 17.5% now. This is owing to 600% growth of gold exports in 2019/20 recorded in the latest data of the government. Price is left unchanged.

d) **Flower and Vegetables including Chat**: These exports revived from their collapse in the early days of the pandemic in May 2020. But the daily rate of shipping for flower was still 33% below what the exporters used to ship (540 boxes/day compared to 810 before COVID-19]. We revised the previous rate of decline which was 80% in October 2020 to 33% now based on the latest information. Price is also kept at the agriculture price level as given above. Further, the government recent data shows flower volume has increased by 63.17% in 2019/20, including the two quarters that included the COVID-19 effect. In the light of this, the October 2020 forecast is now assumed to be further improve by 50%, thus a decline of 16.5% is used. **Chat:** given the government latest data 2019/20 that shows an increase in volume by 6% for Chat, we used the average of this and the forecast in October 2020 of a 9% decline, that gives us a 7.5% reduction.

e) **Manufactured Goods Exports: Textile:** 12% decline in price is forecasted by UNCTAD in 2021 which is used. Volume reduction is kept to the October forecast of 21% in April 2021, **Leather & Leather** products until October 2020 was forecast to

decline by 21%. Recent government data shows a 36% increase in 2019/20 fiscal years. The average of the two is used in this analysis.

f) **Others**: for other exports, the minimum price decline of 1% is use as this category is dominated by power export. Volume is assumed to remain at the national and global average reduction rate of 21% for all exports collected in this category.

g) **Transport Service Exports & Imports**: Transport service exports improved at least by 100% compared to the forecast in October 2020. So, we reduced its declining rate now to 40%. Government 2019/20 report shows transport service export has declined only by 1% while imports declined by 10%. Given that the Ethiopian Airline (EAL), which is the dominant actor in this category, reported a good recovery and, in fact, reported a profit of US$45 million for the first half of this years (though this is 50% less than its annualized profit), this information is used to reverse its rate of decline which was 80% reduction forecasted in October 2020 to 80% recovery now (in both transport service exports and imports).

h) **Total Imports**: Previous global estimates (in October 2020) are maintained: Similarly, the 5% logistic related price increase and 21% drop in imports were estimated in 2020. In April2021 UNCTAD data shows imports by Sub-Sharan African countries declining by 24% in Quarter2/2020; -13% in Quarter 3/2020 and by 8% in Quarter 4 of 2020 which averages to 15% reduction. Ethiopian actual data for 2019/20, that includes one moth and one quarters with COVID-19 effect, shows an annual import value decline of 8% for 2019/20, which indicates that the reduction in the COVID-19 affected quarters most likely is larger that this annual decline. Thus, we have reduced the previous volume reduction to the new estimates of the UNCTAD average of 15% in 2020/21.

[B] FDI, Remittance and Capital Inflows

a) **Remittance:** The actual data in Feb-April 2020 show remittance has declined by 40%. In quarter three of 2019/20 remittance has dropped from the expected 800 to 200 million US$, -a 75% drop. I used the average of these two [60%]. In April 2021 the government latest data shows remittance has dropped by 19%. Similarly, the World Bank expected an 8% and 6% decline in 2020 and 2021. Thus, given the government lasts data of 19% drop that included 1 quarter with full effect of COVID-19 included, and World Bank's latest forecast noted above, we improved the October 2020 forecast of 60% decline to 30% for 2020/21 by assuming that this will be improved at least by 50%, (This rate is also applied for transfer receipts from NGOs)

a. **Foreign Direct Investment (FDI):** Actual data form Official government News in October 2020 reported a 19.4% decline (from $3.1 bln to 2.5) in October 2020 compared to the figure a year ago. In April 2021, UNCTAD forecasted Ethiopian FDI to decline by 24% in 2021. The government of Ethiopia 2019/20 data also reported an annual decline of 19% in 2019/20 fiscal year. Thus, we have used the 20% reduction as the possible reduction in FDI in 2020/21.

b. **Official and other long-term flows:** The official transfer in 2019/20 report to decline by 27% according to the government latest report. This trend is most likely to prevail in 2020/21, given the current political problem in the country. We used this rate as the forecast for 2020/21.

c. **Public and Private Long-term Inflows**: In the October 2020, given all available information at the time, it was forecasted that there would be a 10% and 15% decline in public and private

long term capital inflows, respectively. The government's latest report shows an increase of 19.4% (public) and a decline of 37.8% for (private) inflows. Since, the long-term public capital inflows a year before declined by 17% while private flows increased by 5%, showing significant volatility, we have assumed the October 2020 forecast of the 10% and 15% decline for the public and private inflows, respectively, to prevail in 2020/21.

d. **Other Debt-creating Flows**: All types of debt, and debt service payments are assumed to increase by the growth rate of the debt stock which was 11% last year (this was also our forecast in October 2020, which is confirmed by the 2019/20 out turn as reported in the government latest data which reported an 11% growth.

[C] Sectoral Recovery: World Bank Phone-based Survey with Job creation Commission, eight rounds (form April to October 2020) with 645 firms (550 firms responded) in Addis Abeba, Adama, Bahir Dar, Hawassa, and Mekell responding is used. 500 of the 645 were from Addis Abeba. The sample is drawn from 403,039 establishments in Addis Ababa and 142,170 in the other towns (with final cleaned list sampling frame consists of 288,660 establishments in Addis Ababa and 118,523 establishments in the other cities.) at the start of the survey in April 2020. The data is also collected in the such a way that 20 percent of the firms in each city that are picked are operate in the service sector.

In round 8, which was conducted in October 2020, 66% of firms reported that they have recovered to full-time operation. Before that in the 4th round of the survey (July-August 2020) only 47 reported full recovery. The two rounds show an average of 57% full recovery which is equivalent to an average drop of operation by 43%. However, income of this firms dropped on average by 55%. This means they are effectively working at (55*57%) =31% full time equivalent of the situation before COVID-19. Making the total below normal operation 74% drop equivalent. The average of the 43% reported decline in operation and this 74% drop that included the income fall effect will be 58% drop-in activity compared to normal time. For all firms, except hotels, we used this value to forecast the recovery rate 42%. For hotels and restaurants, given the latest information which shows a 65% drop in arrival and a drop in occupancy rate to 43% rate, and revenue loss of 30 to 50% in early 2021, the combined effect is to reduce operation of firms by 73 to 93%. We have lowered the 90% drop in operation level of firms in service and industrial sectors we used in October2020 forecast to a mild recover by putting it now at 80% level of drop now.

Source of Latest Data:

- The lasts data of the government used above is taken from: National Bank of Ethiopia. 2020. ***Annual Report 2019/20***. Addis Abeba: National Bank of Ethiopia.
- The full forecast and data for "October forecast" referred here is given in: Alemayehu Geda (2020), "The Macroeconomic and Social Effect of COVID-19 in Ethiopia", October Update (Department of Economics, Addis Abeba University; available at www.researchgate.net/pofile/Alemayehu_Geda).
- The latest data of UNCTAD and World Bank are taken from www.unctad.org and www.worldbank.org