



Policy Studies Institute (PSI)

The Economic Implications of COVID - 19 in
Ethiopia and Policy Measures

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April 2020

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Abstract³

The economic damage from COVID – 19 pandemics is already visible. The effect of COVID – 19 crisis on the economy is due to public health measures to flatten the epi curve. Though the crisis affects all economic sectors, the economic fallout from COVID – 19 pandemics is particularly acute in specific sectors. As a result, countries are taking various measures to overcome the economic damage by considering the short term and long-term effects of the crisis. Evidences revealed that due to heterogeneity in health system, social and economic status of countries, homogenous measures are more likely to be suboptimal. This paper, therefore, aims to identify the social and economic policy measures to overcome the short- and long term economic damages from COVID – 19 crisis in Ethiopia. Towards this end, the paper explores the factors that determine the kind of public health policy measures, their effectiveness and implications to economic damage using review of previous studies, examining secondary data and qualitative information. Our findings indicate that factors related to demographic, economic and social settings are important in determining the economic damages associated with the public health measures to contain or suppress the virus. Based on the findings, targeted and combined social and economic policy measures are suggested to overcome COVID – 19 crisis in Ethiopia’s economy.

³ **Disclaimer:** the opinions in this article are those of the authors and do not necessarily reflect that of PSI, their home institutions or supporting organizations. Comments may be forwarded directly to the author(s) respective addresses.

Contents

Abstract.....	2
1. Introduction.....	4
2. Health and economic policy measures: a brief review.....	6
2.1. Health policy measures	6
2.2. Economic policy measures.....	8
3. Ethiopia’s socio-economic situation and its implications to Covid – 19	11
3.1. Demographic structure.....	12
3.2. Health and nutrition status	13
3.3. Economic status	14
3.4. Social setting.....	19
4. Policy Measures to overcome COVID – 19 in Ethiopia.....	19
4.1. Social policy measures.....	20
4.2. Economic measures.....	22
Reference.....	25

1. Introduction

After the first fatal case of Corona Virus Disease (COVID – 19) is reported in China on 11 January 2020, the virus spread to 212 countries and territories, with more than a million confirmed cases and 80 thousand deaths (1). These figures are still on upward sloping portion of the epidemiological curve (epi curve) (2). The COVID – 19 crisis is not just causing massive damage to public health including death but it is also causing damage to the economy. Countries are taking various measures to contain or suppress the spread of the virus and thereby reduce the health damage. Full or partial lockdowns, testing, contact tracing, social distancing and case isolation are among the health measures being taken by countries to contain the spread of the virus. These health measures have led to economic shocks, which are observed almost simultaneously on both the supply and demand side of the economy. Some of the economic damages already become tangible in the world and in countries such as China, Singapore, South Korea and EU countries are massive slump on the stock market, canceling international flights to contain the spread of the virus, global supply shock as firms reducing or closing production as well as declining in private consumption (3). UN call for a 2.5 trillion coronavirus crisis package for developing countries including for debt relief and health recovery (4). The United Nations Trade and Development Agency (UNCTAD) reported a \$2 trillion shortfall in global income with USD \$220 billion hit to developing countries excluding China as a result of COVID – 19 crises (5, 6). On the other hand, country specific economic effects are also observed or predicted in reducing Gross Domestic Production (GDP), Foreign Direct Investment (FDI) flows and sector specific impacts.⁴ These economic impacts are observed due to the public health measures taken to flatten the epi curve.

Early evidences on the health and economic implications of COVID – 19 revealed that even if the health effect is generally similar in all countries, the extent of the health damage and the effectiveness of the public health measures and, thereby, the economic damage depend on country context. The effectiveness of health measures such as social distancing, lockdown, self – isolation and stay at home depends on the social and economic situation of the country. In this respect, the economics of externality and incentive plays essential role in the effectiveness and efficiency of

⁴ COVID – 19 also comes with good opportunity in reducing pollution. NASA reported that satellite images show clear in the lower atmosphere as pollution level decline between 1 – 20 January and 10 – 25 February 2020 in China (Paolo and Andrea, 2020).

these public health measures. The fact that contagious diseases such as COVID – 19 are rife with “negative externalities” means that the action of each individuals affect the whole system of containing or suppressing the virus. For instance, the youth, who accounts at least 70% of the Ethiopian population, are more likely to be infected and become carrier of the virus but they are less likely to die. Thus, these low-risk category individuals have low incentives to self-isolate or take precautionary measures. This action affects the old people and those who already have health disruption as they are more likely to die if they are infected. These old people are relatively skilled and have entrepreneurial ability than that of the young population. Hence death of these old people, particularly if those who are in the productive age, will harm the economy much harder and will have a long-term impact on the economy. Besides, the health system capacity determines the extent of the health damage, implying that developing countries that have poor health system capacity like Ethiopia are more likely to be affected.

Similarly, the economic damage from COVID – 19 depends not only on the public health measures but also the economic situation of the country. Recent evidences show that though the potential economic impact of COVID – 19 is observed in all sectors, sever consequence is already observed in some sectors such as tourism, aviation, oil and gas and consumer products (8). The effect on some businesses such as small businesses and informal sector who earn their income on daily bases is more severe. Besides, even if the short-term economic impacts are already tangible, recent evidences show that COVID – 19 crises will leave severe economic impact in the long term (8). These evidences imply that homogenous measures are more likely to be suboptimal, indicating that public health and economic policy measures need to be tailored to country specific situation to minimize the health and economic damage. Besides, even if governments should act fast to save lives whatsoever the economic costs, they should also consider the long-term effect of COVID – 19 crisis when they take health and economic policy measures to overcome the crisis. There are little systematically studied evidences on COVID – 19 that can provide input for policy makers to make informed decision. Thus, the paper significantly contributes to fill this gap. It also contributes to the few literature available on the economics of COVID – 19 in developing countries including in Africa.

The paper, therefore, aims to identify the social and economic factors that potentially determine the kind of public health measures, their effectiveness as well as their implications to economic damage in Ethiopia. Based on the findings, it suggests feasible social and economic measures to

minimize the health damage and the short - and long - term economic damages from COVID – 19 crisis in Ethiopia. Towards this end, we explore the demographic, health, economic and social settings of the country using secondary data and systematically studied literatures that are relevant to our study. In addition, a review of scientific literature on other countries is also conducted. With these introductory remarks, the paper is organized in four sections including this section. The next section presents a brief review on the health and economic measures from the literature. Section three presents the major socioeconomic factors that have potential effect on the kind of public health measures and their implications to economic damage in Ethiopia. In the last section, the paper suggests the social and economic policy measures to be taken to minimize the COVID – 19 crisis in Ethiopia.

2. Health and economic policy measures: a brief review

2.1. Health policy measures

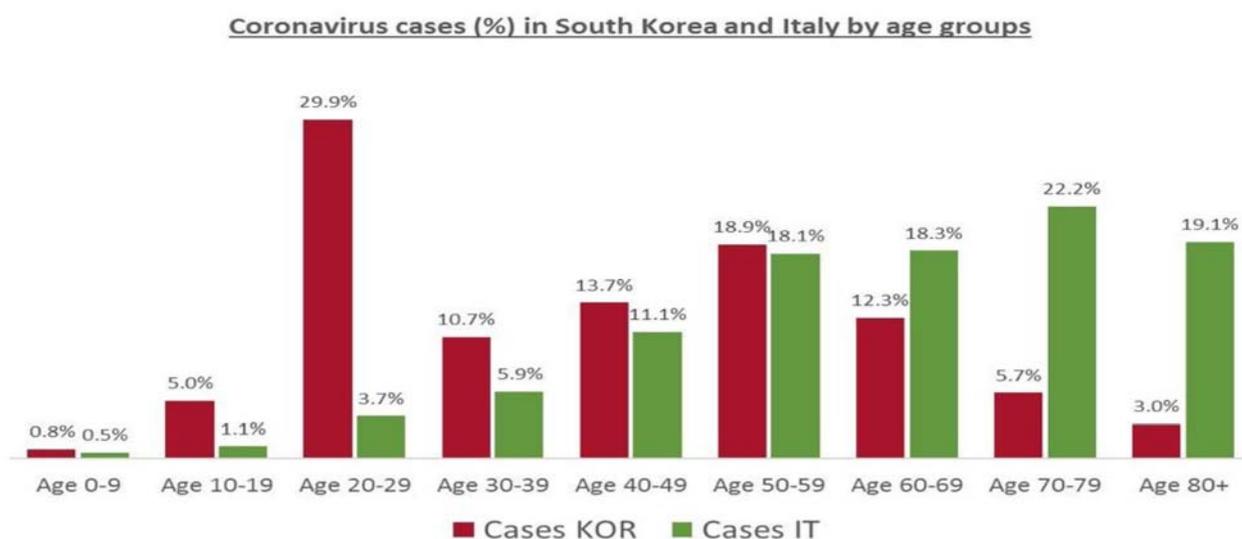
One of the key mechanisms through which the virus can be transmitted from infected to non – infected person is through personal contact. Health policy measures that aim to influence R_0 (Average number of infected people per one contagious person) broadly focus on containment measures such as quarantining of asymptomatic cases and/or suppression measures such as social distancing. Policies to contain the virus can lower the number of infected people per one contagious person. However, it is less effective in flattening the curve as it cannot lower R_0 below one. On the other hand, policies to suppress the virus can be effective in delaying the spread of the virus in the short-run, but slow-down the build-up of herd immunity, and thus population is vulnerable to new outbreaks in the medium term. However, it has advantage since it gives time to expand the health system capacity and perhaps for the availability of vaccination (3). In containing or suppressing the virus, there are various health measures including clinical/pharmaceutical and/or public health measures. Some of the major non-pharmaceutical interventions (NPIs) that countries are using to reduce COVID- 19 mortality and healthcare demand are case isolation at home, voluntary home quarantine, social distancing, closure of schools and universities and working at home.

The effectiveness of these health policy measures in flattening the curve differs depending on the country context including the capacity of its health system and social situation. For instance, the nature of the social settings or interaction of people of a particular country determines in lowering

R_0 (Average number of infected people per one contagious person). One of the typical characteristics of contagious diseases such as COVID – 19 is that they are rife with “negative externalities”, meaning that the action or choice of one individual affects other and even the whole system of containing or suppressing the virus. Low-risk category individuals have low incentives to self-isolate or take precautionary measures. This raises one fundamental question: “is it enough to tell people to self-isolate or to practice social distancing measure?”. Various measures have been taken by countries to implement public health measures including social distancing. For instance, after the first case of COVID-19 was confirmed in Singapore on 23 January 2020, a number of housing properties (including the National University of Singapore) were designated as government quarantine facilities so as to accommodate those who had been in close contact with confirmed cases of COVID-19. After the novel coronavirus become an outbreak and estimated to have high public health impact in the country, the government introduced stay – home measures in addition to its measure of leave of absence and became fully in force with legal penalty (9). On the other hand, with the spread of COVID – 19 in China, South Korea only banned the entry of those coming from the Centre of the Chinese outbreak, the city of Wuhan, and simply strengthened immigration quarantines for those entering from other areas of China. However, with the large scale group infection outbreaks in its two cities located in central South Korea, the government opt for a large scale production of test kits and adopts a ‘drive – through testing’ approach in which a person drives to testing center, a medical team collects sample and provides consultation to a person, make payment and complete all administrative procedures without having to get out of the car. This approach enables to offer medical services for over 12,000 tests per day (10).

Furthermore, a comparison of South Korea and Italy based on a quasi-natural experiment in the Italian town of Vo in Veneto shows how differences in the kind of measures taken can have different effect on the extent of the health damage. South Korea has tested large share of the population ‘at random’ but Italy has tested only (worst) symptomatic cases. On the other hand, older population accounts for higher proportion in Italy compared to in South Korea and China (11). And older population in Italy are more connected with the young than in South Korea (12). The study revealed that coronavirus hit Italy and South Korea very differently in terms of age at around the same time and the same level of the outbreak (see Figure 1 taken from the study). It shows that more coronavirus cases in younger group in South Korea but in older people in Italy. However, the fact that most carriers are actually in younger groups and that more personal contact

of older people with the young in Italy exposed older people for a greater risk for infection in Italy than in South Korea. This may indicate the difference in the rate of infection and fatality in the two countries (13). The review in this subsection has important implications. First, it implies that age structure and more social contacts have important implications for the health impact of COVID – 19. Second, the experiences of these countries indicate that homogenous interventions are likely to be sub-optimal as there is heterogeneity at individual, household and societal levels. Third, the effectiveness of the health measures to contain or suppress the spread of the virus also depends on how quick governments take public health measures and the health system of the country.



Source: <https://medium.com/@andreasbackhausab/coronavirus-why-its-so-deadly-in-italy-c4200a15a7bf>

2.2. Economic policy measures

The effect of the COVID – 19 on the economy is due to the public health measures taken to flatten the epi curve, and has a form of *supply – demand feedback loop effect*⁵. These supply – demand feedback loop effect shows that COVID – 19 does not just damage the real economic fundamentals

⁵ At first, the economic effect of covid-19 looks like a supply shock such as disruption in global supply chains, decreasing labor supply and drop in capacity utilization which are caused by the health measures such as quarantine and social distancing across the world. Then, the demand effects quickly materialize due to uncertainty about the progress of disease, uncertainty about economic policies that will alleviate the crisis, loss of income of non – permanent workers particularly in affected industries, increase in households’ precautionary savings, and lack of liquidity among firms, which also wary of investing until situation clears. These demand effect then simultaneously reflected back to supply effect since firms lack liquidity to fulfill their commitment while facing lower demand and thus are forced to file for bankruptcies. On the other hand, the supply effect feedback to demand effect since Workers who lose jobs from closing businesses do not have an income anymore and therefore lower consumption, eventually depressing aggregate demand.

it also introduces ‘a wall between demand and supply’ with strong complementary feedbacks in the real economy; contraction in supply, leading to a contraction in demand, leading to contraction in supply...leading to a large destruction of economic surplus (3).

The supply and demand shocks caused by COVID – 19 crisis are already tangible in the world. The United Nations Trade and Development Agency (UNCTAD) put the cost of the outbreak at about US\$2 trillion in 2020 (4). The report also shows that global FDI flows is expected to drop by 30% to 40% during 2020 – 2021 as a result of COVID – 19, affecting all components of FDI including real capital expenditure, greenfield investments and expansion (6). UNCTAD also reported that the damage on Global Value Chain (GVCs) as a result of COVID – 19 may have persistent effects on the long-term. On the other hand, country specific economic effects are already observed or predicted. In EU countries, for instance, COVID – 19 caused a sectoral and regional demand shock, hitting mostly tourism, air transport, hospitality and entertainment. However, it is predicted that its effect is only 5% of GDP if restaurants are included, with some variation across countries, more in Spain and Germany (14). In USA, more than six million unemployment rate was claimed within one week in March, 2020. The predicted impact of the COVID-19 outbreak on Singapore’s economy is one percentage point decline in GDP and the country is expected to experience a negative growth for the first time since 2001 (9). The author also indicated that the predicted impact of the COVID-19 outbreak on Singapore’s economy is larger than any other event of the last two decades, including the 2008 Global Financial Crisis. Moreover, despite the fact that the identification and isolation of cases resulted in substantial reduction in number of deaths in South Korea, its economy is severely damaged as a result of the corona virus pandemic. Four economic impacts of COVID – 19 crisis are identified in South Korea (10). First, since the country’s trade is highly dependent on china, which absorbs 25% of its total export, its export earning is severely affected. Second, as its industry is also deeply integrated with Chinese industry, it is affected due to disruption of parts and supplies from china. Third, many of the country’s corporations are affected due to failure in international logistics. About 120 countries have banned entry from South Korea, which affects trade in intermediate goods, investment management and construction good. Fourth, its mandatory isolation from high risk groups such as schools, sport facilities, entertainment etc affects consumption as shopping districts become empty and many SME lost their sources of demand. This contraction in spending

has adverse effect on aggregate demand. These will have a potential negative effect on employment (10).

The slowdown in the global economy and lockdown in some countries, such as Italy, Spain and most Eurozone economies and beyond as a result of COVID-19 has also caused a decline in the global demand for oil, which is estimated to surpass the loss of nearly 1 million barrels per day during the 2007-08 recession (15). This is good news to oil importing countries such as Ethiopia, which can benefit from the decline in oil price as a result of the reduction in demand for oil whereas it is bad news for oil exporting African countries such as Nigeria, which is experiencing lower export earnings from oil. The economic impact of COVID – 19 also varies with sector of the economy. For instance, the tourism sector is heavily affected as a result of the implication of the COVID – 19 pandemic, which restricts global travel. This causes a decline in demand for tour companies and hotels. Similarly, China’s manufacturing index and fixed investment declined by 30% so far this year relative to December 2019 (15). The study also indicated that while European manufacturing indices fell by similar amounts in March 2020, stock markets have plummeted with the FTSE 100 index losing close to a third of its value in the past month (15).

Countries are taking various policy measures to overcome these economic damages from COVID – 19 crisis. For instance, government of Singapore took measures USD \$ 4 billion stabilization and support package targeted specifically at COVID -19 issues (9). The package includes (i) a jobs support scheme (S\$1.3 billion) whereby the government pays 8% of the wages of local workers for three months, up to a S\$3,600 monthly cap. Singapore has 1.9 million local workers; (ii) a wage credit scheme (S\$1.1 billion) whereby the government co-funds approximately wage increases of approximately 30% for Singaporean employees, up to a S\$5,000 gross monthly wage; (iii) A care and support package (S\$1.6 billion) whereby the government provides one-off cash payments of between S\$100 and S\$300 to every Singaporean aged 21 or higher, thus helping households defray the cost of living. Beyond these large components, the 2020 budget also includes corporate income tax rebates of up to 25% of total tax payable in 2020; faster write-down for investment incurred in 2021; government co-financing of working capital loans; increased flexibility in rental payments for commercial enterprises on government properties; and retraining and reskilling programme in tourism, transport, and other affected sectors (9).

On the other hand, the government of South Korea responded to the economic shocks using a variety of measures (9) including: (i) covering the costs of COVID-19 tests, the costs of treating

the disease and patients' living expenses; (ii) providing support to help with living expenses, consumption vouchers, childcare allowances; and (iii) establishing an 'emergency management' fund for small business owners worth 1.4 trillion won. This is aimed at providing liquidity for SMEs and their owners. However, as these measures are not enough to effectively respond to the economic damage, additional measures such as supporting vulnerable people, minimizing the collapse of industrial ecosystem, strengthening the foreign exchange shield and deregulation for investment are also proposed (10).

Another study in EU countries indicated that even if some of the fallout from COVID – 19 follow a similar pattern as that of the Financial crisis, the economics of epidemic is different (16). The authors mentioned that fears of contagion and government action to contain the spread of the disease have led to a global supply shock, especially in manufacturing. However, unlike the case of the financial crisis, which was difficult to predict in advance, the coronavirus pandemic is more predictable to epidemiologists, and therefore to governments. As a result of this, there is clear path of recovery and rebound so long as governments enact early and aggressive in taking policy measures including supporting the liquidity of firms, offsetting lost wages for workers, protecting the financial system and stimulating the economy more broadly for a quick recovery after the epidemic has run its course. Other study suggested to take a long-term policy measures that will make it easier to handle the long-term effect of the crisis such as undertaking large, deficit-financed public investment on a continuing basis (17).

The review in this section implies that countries are taking economic policy measures depending on the (expected) economic damages that COVID – 19 crisis causes on their economy. The fundamental issue that countries consider when taking economic measures is their economic system. This is due to the fact that the efficiency and effectiveness of the policy measures for reducing the economic damage from COVID – 19 crises depend on the economic status of the country as well as the expectations and beliefs on the corona virus crisis. Overall, the health impact and the implied economic damage have country – specific context so that each country can effectively and efficiently overcome the COVID – 19 crisis.

3. Ethiopia's socio-economic situation and its implications to Covid – 19

The first COVID – 19 cases in Ethiopia was reported on 2nd of March 2020. As of 11 April, 65 infected cases are reported. Out of this, four are recovered and three confirmed death are reported

by the Ministry of Health (MoH). Ethiopia MoH predicted that about 30 million people are expected to be infected with the virus, the majority from urban areas. This is within the range of the 20 – 60% of the world population is expected to be infected based on estimation made by Harvard University (as cited by 18). The World Health Organization (WHO) estimates that of those who are infected, over 96% will recover at least in advanced health system (18)⁶.

Various measures are taken by the Government of Ethiopia (GoE) to contain the spread of the virus including social distancing and quarantining. However, there is high non-compliance among the public particularly in practicing the social distancing measure. As a result, in addition to these measures, few regional states such as Tigray took stringent measures including declaring state of emergency within the region, restriction of mobility from town to town, rural to rural and city to rural and vice versa. Later on, other regional states did the same and the federal government has declared state of emergency on April 10, 2020. These measures will certainly have short term and long-term effects on the economy. Looking into the details of the economy, the forms and extent of the economic damages from COVID – 19 and the policy measures adopted by developed countries and China to respond to the crisis described in the previous section may not be the same in Ethiopia and other developing countries. Country specific context plays crucial role in determining the kind of public health measures that each country needs to take to contain or suppress the virus and thereby minimize the health impact as well as the associated economic damages. Accordingly, this section discusses some of the major socio – economic features of Ethiopia that have a potential role in determining not only the kind of public health measures and their effective implementation but also the economic policy measures to be taken to minimize the economic damages associated with the health measures to overcome COVID -19.

3.1. Demographic structure

Ethiopia is a country of young population. Of the total 110 million population, 41% are below 15 years old, 30% between 15 – 29 years old and only 3.5% are above 65 years old (19). This has implication on the health impact of the COVID – 19. According to WHO, COVID-2019 affects all people, with its health effect more likely on older persons and persons with pre-existing medical conditions (such as high blood pressure, heart disease, lung disease, cancer or diabetes) and those

⁶ To our knowledge, there is no any scientifically estimated figures on the proportion of people who will recover or die in Ethiopia.

who appear to develop serious illness more often than others (20). Even if old people are more likely to die, evidences revealed that Young population are far more likely to be infected and are the carrier (13). This feature has important implications for the type of health measures to be taken to overcome the health impact. First, as indicated by Andreas (13), if the virus spreads predominantly among young people, as it appears to have been the case in South Korea, there is no immediate risk of collapse to the hospitals. However, if it spreads to the old population, as in Italy, collapse is looming. Second, given that social interaction is a major means of transmission of the virus, contact between the carriers (the Youth) and the older people will speed up the infection rate and, thus, it is likely that the older and those with pre health problems will more likely be infected and die if there is contact with the young. Thus, such demographic feature crucially determines the kind of public health measures particularly that of the effectiveness of social distancing measure to contain or suppress the virus due to the rife negative externality nature of the virus as well as lack of incentive to take precautionary measures particularly among the young who are more likely to be infected.

3.2. Health and nutrition status

The health and nutrition status of the people of Ethiopia is also different from other countries. In Ethiopia, the prevalence of malnutrition, anemia, HIV/AIDs, and tuberculosis is also higher compared to countries in far east, EU and USA. Based on Demographic and Health Survey (DHS) of the Central Statistical Agency (CSA), 57% of children age 15 – 49 months, one-quarter of women age 15-49 years and 15% of men in Ethiopia are anemic. At least 38% of Ethiopian children under five years old are stunted, an indicator of chronic undernutrition, and 10% of the children are wasted, a sign of acute malnutrition. About 45% of children from the poorest households are more likely to be stunted (21). Besides, even if access to health infrastructure has been improved over the last one and half decade, the country has poor health capacity in providing intensive care unit due to limited numbers of health professionals, health facility such as bed, ventilator, etc. Based on DHS report, 70% of women (seven in 10 women) reported at least one problem accessing health care for themselves (21). In addition, there is also poor access to improved water supply and sanitation services. Based on the 2016 Welfare Monitoring Survey (WMS) report, only 65% and 66% of the households in Ethiopia have access to an improved source of drinking water and sanitation services such as pit latrine (22), respectively. Shortage of water supply means that

people are less frequently washing their hands and are more vulnerable to be infected with the virus. This low coverage exacerbates the extent of COVID – 19 crisis unless appropriate measures are taken. Furthermore, the housing situation of the Ethiopian people is also a risk factor for the spread of COVID – 19. An average Ethiopian family shares one room for its 4 to 5 members. This not only increases household level infection but it is also highly likely that a ‘stay at home’ policy may not be effective in containing the spread of the corona viruses. In general, the poor health capacity, low levels of health and nutrition status of the Ethiopian people as well as housing condition expose the people to coronavirus infection. This finally indicates that COVID – 19 will have severe health consequences if it spreads. It also implies that ‘curative’ based health policy measures are less likely to be effective in minimizing the death due to the poor health capacity of the country.

3.3.Economic status

The economic status of the people of Ethiopia also differs from those of china, South Korea, USA and EU countries.

- (i) ***Higher proportion of Ethiopians are food insecure:*** About 26 million people in Ethiopia live below food poverty line and at least 23 million lives below absolute poverty line (proportion of people that cannot afford to buy a basic basket of goods) (23). The fact that food poverty is higher signifies that lack of sufficient food at household level triggers the persistency in poverty in Ethiopia. Besides, the bottom 40% of income - households group in urban areas of the country are more likely to fail below the poverty line due to economic shock as they are not far above from the poverty line (24).
- (ii) ***Substantial proportions of Ethiopian have vulnerable source of income:*** the source of income for the majority of the population is highly vulnerable to any kind of shock that jeopardizes it. About 30% of the income of the bottom 40% income group in urban areas comes from sale of non – agricultural goods and services. Similarly, the major sources of expenditure for the bottom 40% income group households in rural areas are own agricultural products and sale of the same products. These two constitutes at least 70% of their income in both groups (25). These sources of income are highly vulnerable to the kind of health measures to contain the spread of the virus.

- (iii) ***Micro enterprises and informal sector are major source of employment for urban livelihood.*** In urban Ethiopia, only 12% of the labor force is employed in the manufacturing sector and earn their income on regular bases. The majority are temporarily employed, self - employed or work in the informal sector and earn their income on daily bases. For instance, a recent survey on Micro, Small and Medium businesses enterprises (MSE) operated in 8 big cities in Ethiopia shows that these businesses generated job for more than 150,000 workers in these cities (26). The same survey report shows that of these, 72% are paid workers and 77% are temporary employees. The average monthly income (after tax) of workers employed in these businesses is 2069 Birr (or USD \$96), which makes them above the poverty line. Public health measures such as social distancing and ‘stay at home’ will have significant negative effect on both the workers and employers. Owners of these MSE may be forced to lay off workers due to lack of demand that arises as a result of consumers’ reduction in their spending as well as precautionary saving measures. Then workers who lost their job will immediately fail to live below the poverty line and unable to cover their daily food requirement or other basic necessity. Besides, the fact that the informal sector accounts for 37% of urban employment (27) means that those working in this sector will be heavily affected if the public health measures requires them to stay away from their businesses or affect the demand for their goods and services they are selling. Considering the economic dependency ratio in urban areas, which is 149⁷, then the magnitude of the damage is even higher.
- (iv) ***The informal food market supplies the major proportion of vegetable and other horticultural products to cities like Addis Ababa.*** More than 90% of vegetable food are supplied through the informal food market for urban residents in Ethiopia (28). These markets are vulnerable to any kind of public health measures including social distancing and, thus, those engaged in selling and buying of the food products such as vegetable or horticultural products are severely affected. The effect can be reduction in

⁷ Economic dependency ratio in urban areas of Ethiopia is 149, meaning that for each 100 employed persons, there are almost 149 dependents to be supported in terms of food, clothing, health, education and so on. This means that there were 149 non-employed persons per one hundred employed persons.

- income for the suppliers/traders and increase in price for consumers as well as effect on access to nutritious food.
- (v) ***The wholesale and retail subsectors are the ones which are highly affected.*** They employ about 1.6 million people in urban areas of the country. This accounts for 21% of urban employment. Of these, the retail subsector employs 73%. Any public health measures to contain or suppress the virus will have substantial impact on the livelihood of these workers and their families. For instance, the regional state of Tigray took stringent measures including closure of businesses and weekly market and banning of mobility from city to city, from rural to rural and city to rural areas to contain the spread of the virus. A conservative estimation based on qualitative information gathered by the author on the closure of businesses and weekly market measures in the regional capital, Mekele, which is also the second biggest city next to Addis Ababa in Ethiopia, is about 1.4 Billion Birr (or 41.8 million USD) assuming these measures stay only for one month (authors estimation based on qualitative assessment in Mekele city). These economic damages imply that the type of health measures that the government takes to contain or suppress the spread of the virus have direct relation with the extent of the economic damage.
 - (vi) ***Aviation industry: The economic damage of COVID – 19 is already observed in the aviation industry in Ethiopia.*** Ethiopian airline already announced that it has lost USD 550 Million as a result of cancelation of flights caused by COVID – 19 crises.
 - (vii) ***The tourism industry*** is heavily affected due to restriction of international mobility to contain the spread of COVID – 19. Owners and workers in Hotels and tour industries are the one who are severely affected as a result of this measure. For example, Hyatt Hotel, one of the international hotels operating in Addis Ababa, has closed its services during the last week of March.
 - (viii) ***COVID – 19 is also affecting the manufacturing sector in Ethiopia.*** Many countries already took stringent measures in their immigration law and ban entry to their country other than their own citizen. Besides, firms in China, South Korea and other western countries reduced their production due to COVID - 19. These measures affect the supply of raw materials for the production of industrial materials in Ethiopia as most large and medium scale manufacturing firms (LMMF) in the country use imported raw

materials for production. Among the LMMF in Ethiopia, the Machinery & Equipment, Basic Iron and Steel, and the Chemical and Chemical Products manufacturing industries are the worst to be affected by COVID – 19 crisis. 75% - 80% of the raw materials consumed by these firms are imported (29). Besides, if the crises continue for extended period of time (for example, for six or more months), then these firms may be forced to reduce the number of their workers because of reduced production and lack of market for their products. If firms take such measures, the economic damage to the economy and workers and their families will be huge. More than 329,000 persons are working in LMMF sector as of 2017 (29). With dependency ratio of 149 for every 100 employed workers, if firms reduced their workers by 50%, it will have a severe consequence both in the short and long term. In addition to these three firms, it is likely that the furniture and textile industries, which hire about a quarter of the total employed workers in the LMMS, will be affected by the COVID – 19 crises since there will be reduced demand for their products if the crisis will continue for more than six months. The food and beverages manufacturing industry, which employs about 39% of the employees in the LMMS, may also be affected due to reduction in production as a result of lack of imported raw materials, which constitutes 33% of its total input (29).

- (ix) ***Effect on the agricultural production:*** agriculture constitutes major share of the GDP and employment in Ethiopia. So far, the effect of COVID – 19 on agricultural production is not clear. However, early estimate shows that the sector can be affected by COVID – 19 crisis due to its effect on farm labor supply. Restriction on labor mobility from rural to rural and from city to rural areas will affect the supply of off - farm labor. In Ethiopia, migrant labor is the major source of off farm labor particularly during agricultural pick season (29, 30). This implies that there will be reduction in agricultural production due to lack of labor supply if the restriction will continue until June to September as these months are pick period for land ploughing, planting, weeding and other agricultural activities in Ethiopia. The worst to be affected are female headed and widowed households, who are majorly dependent on hired (off – farm) labor (30, 31). Evidence in China revealed that China’s economy lost USD \$100 billion in one month due to restriction on rural migrant labor mobility, which is the major source of off – farm labor, due to COVID – 19 (32).

- (x) ***Effect on Export:*** Ethiopia's export economy is highly dependent on advanced economies demand. The country exports primary agricultural commodities such as coffee, oilseed, pulses, chat, flower, and others majorly to Asia, Europe, Africa and USA. These continents account for 39.8%, 28.7%, 20.9% and 9.9% of the country's export in 2017/18, respectively (33). China, Saudi Arabia, South Korea, United Arab Emirates, Israel and Japan accounts for about 70% of the export to Asia. And the Netherlands, Germany, Switzerland, Belgium and Italy accounts for about 75% of Ethiopia's export to Europe. As these countries are among the worst affected by COVID – 19, Ethiopia's export economy will be affected due to the reduction in demand for its export commodities in these countries. There is also uncertainty for how long this expected decline in export earnings will continue. The National Bank of Ethiopia (NBE) reported more than USD \$2.6 billion export earnings from these countries in 2017/18 (33). Using this figure as a reference value and assuming a 50% decline in the export of these commodities to these country as a result of COVID – 19, Ethiopia will loss about USD \$ 1.0 billion within the next one year.
- (xi) ***Effect on remittance:*** Large numbers of Ethiopian are living in Arab countries, USA as well as European countries. Remittance from the Diasporas working in these countries has been one of the major sources of foreign currency for Ethiopia. In addition, it has been major source of income for substantial numbers of families of the diaspora living in Ethiopia. For instance, during 2017/18, net private transfers were USD \$ 6.1 billion (33). Many of Ethiopian Diasporas are engaging in low paying daily work, who are vulnerable to risk of losing their job as a result of COVID – 19 crises. For instance, thousands of Ethiopians, who were working in Arab countries, are being deported to Ethiopia due to the COVID-19 crisis since the beginning of April. As a result, Ethiopian living aboard (diaspora) are less likely to continue sending remittance to Ethiopia and thus there will be substantial amount of reduction in remittance to the country.
- (xii) ***Effect on GDP:*** needless to say, that the effect of COVID – 19 on the manufacturing, agriculture and service sectors will have direct impact in reducing the growth rate in the country's GDP at least for 2020/21.

3.4.Social setting

Social cohesion and social gatherings are of great importance in Ethiopia. It takes various forms including small group gathering for coffee ceremony, community gathering during wedding, burial ceremony, weekly or monthly gathering in *idir* and *Iqub*, etc. For example, daily and weekly attendance of a religious service is very high in the country. As a result, measures to impose social and physical distancing may prove to be more challenging, as demonstrated by the non – compliance by the public for the social distancing advise from public health experts in the country. Because of this non – compliance, the GoE banned religious and other gatherings and even started transmitting religious events on the mainstream media including TV. However, since social interactions are of great importance in Ethiopia, one can still observe various forms of social interactions. With the current economic situations described above, and such various forms of social interaction, the social settings in Ethiopia will continue to be major risk factor for the spread of the COVID – 19. On the other hand, it can also be an opportunity if public health measures can innovate how to utilize these forms of social settings as a mechanism to contain or suppress the virus.

In sum, this section has provided a glimpse of the review on the socio-economic features of the country and has important implications to the kinds of health and economic measures to be taken to overcome COVID – 19 crisis. The next section provides the implications and social and economic policy measures to suppress coronavirus in Ethiopia.

4. Policy Measures to overcome impacts of COVID – 19 in Ethiopia

The previous section has outlined some of the unique features of the country that have important implications to design health policy measures to overcome the spread of the virus and economic measures to minimize the economic damages of COVID – 19 crises. From the discussion, one can draw four major policy implications. First, the level of risk to health damage differs not only between Ethiopia and other countries but also that it varies among various socio – economic groups within Ethiopia. This implies that homogenous measures are less likely to be suboptimal since the effectiveness and efficiency of any measures substantially dependent on these socio – economic features. Second, given the poor capacity of the health system in the country, health policy measures should focus on suppression of the virus in the short run. Third, the public health measures have direct relation with the economic damage, which in turn, determines the

effectiveness of the health measures due to variation in the economic situations of the people. Fourth, the economic measures to address the short-term economic damage may also have implications for long term economic damage. Though Ethiopia can learn from other countries' experience in handling the COVID – 19, the difference in its socio - economic system implies that the country needs to consider its unique situation when taking economic policy measures to overcome the short – term and long - term economic damages. Accordingly, while we strongly advise that the first priority of the government of Ethiopia should be “*To act fast for the containment of the virus whatsoever the economic cost and save lives*”, we would like to suggest the following social and economic policy measures to suppress the virus and reduce the health damage and the associated economic impacts of the crises in the short and long terms.

4.1.Social policy measures

Various public health measures are already taken by the federal government of Ethiopia and regional states including advising for social distancing, which is one of the most widely advocated measures to suppress the virus. However, there is less compliance among the public to this measure despite the efforts of the Ethiopian government and others. This is not unexpected since its effectiveness depends on other factors which are discussed in the previous section. Given these factors, targeted and combined interventions are required for the effective implementation of social distancing.

I) Work on the Youth with the youth: The youth are low – risk categories of the society for the virus since they are less likely to die from the virus compared to older and those with some health disorders. As a rational individual, they have less incentive to self - isolate or take precautionary measures. This implies that it is not enough to tell the youth to take social distancing or self – isolate themselves. While school and university closures can protect school children and university students, these measures can increase household and local community contacts during the closure. It is, therefore, important to supplement these measures with other mechanisms including incentive and/or regulatory measures that incentivize or enforce the youth to comply with social distancing measures. In this regard, we suggest to take targeted measures including:

- (i) Use of digital messages that target the youth using various mechanisms including message from well recognized and accepted individuals that can influence the youth, respected artists, activists and even university professors and high school teachers.
- (ii) Engaging the youth through different mechanism including peer to peer message texting by incentivizing the youth through reduced fee rate or awarding bonus for youth who send text messages about COVID – 19 measures for x number of peers;⁸
- (iii) Encouraging the youth to actively participate in social or mainstream media by organizing TV show, radio program, etc and providing award; and
- (iv) Use of legal enforcement including quarantining of individuals who break measure such as those found in restricted place.

II) Intensify public awareness creation that is clear and healthy: There is a need to aggressively advise about the benefit of social distancing by different segments of the society including religious leaders, renowned individuals such as political leaders, artists, health experts, activists, and community leaders through various media outlets.

III) Restrict mobility: complete lockdown can be disastrous for Ethiopia since it requires at least the provision services such as food, medicine, and other basic services. Complete lockdown can also destroy small, medium and large business, which can have short and long-run economic damages. Besides, its implementation cannot be efficient due to identification problem, imperfection as well as principal agency problem. The feasible options are to:

- (i) Restrict the number of passengers in public buses, mini bus taxi, Bajaj and train. In this case no need to set or control transport fee in the cases of mini buses and Bajaj, since it automatically reduces the demand, which limits mobility in the city.
- (ii) Increase or organize more number of small markets for basic necessity such as markets for food commodities and other basic necessity. Total lockdown of market places has huge cost to the economy as well as harms small sellers and buyers. But one can organize more small markets for basic goods. For example, in Addis Ababa, it is feasible to organize more number of vegetable markets in different part of the city and build consensus with the business people to work in different part of

⁸ Early finding in India shows that peer to peer text message exchange on the importance of social distancing is found to have effective mechanism to implement social distancing;

the city. This, however, requires the city administration to quickly identify & organize places for such markets. In other part of the country, weekly market can be organized for different commodities in different places on the same market day so that people can do marketing. In this case, the local government can restrict the kind of commodity to be marketed. If this measure is supplemented by health measures such as use of mask, washing hands with soap at the market place, etc, it can minimize the spread of the virus and at the same time the economic damage.

IV) Use local institutions, community members to suppress the virus: social interaction in Ethiopia is part of life particularly in low and middle incomes Ethiopians. Members of these income groups share many things including basic necessity and information. This interaction also serves as social insurance. They share information during daily coffee ceremony, which takes place at least once in a day, weekly in idir, religious ceremony, etc. Information shared in these mechanisms can have substantial effect when supplemented by other means including the mainstream media. It is therefore important to use these social networks to create awareness on the transmission mechanism of the virus and other health measures. In this regard, it is important to coordinate the work of the local health officer with the local community in identifying asymptotic cases and measures to suppress the virus. The health extension workers who are reaching the local community in many rural areas of the country are important institutions to reach the local community. However, it should be emphasized that protection and incentive mechanisms should be provided to these local health workers.

4.2.Economic policy measures

The social policy measures suggested to suppress the virus will certainly have economic cost. Besides, since Ethiopia's economy is integrated to the international economy, there will be economic damages due to health policy and economic policy measures of other countries. The nature of these economic damages is both short term and long term. In order to minimize the economic impact associated with the health measures to overcome COVID – 19, the following economic policy measures are recommended.

I) **Credit support for firms and business:** The interventions proposed above to effectively implement the social distancing and mobility restriction measures as well as other measures

imposed by other countries, which the Ethiopian economy is linked with, will have significant effect on Ethiopian firms and businesses. Such measures mainly affect the supply chain that force firms and businesses to reduce production. And there is also uncertainty for how long these measures will remain effective. As a result, not only that firms will have liquidity problem but also that they will be forced to reduce workers. It is, therefore, essential to support businesses and provide credit at lower interest rate particularly to those that retain workers and pay wages. Credit support to the affected firms and businesses encourages firms to continue to retain and pay workers during the period of disruption. It also incurs lower fiscal cost to the government compared to direct transfers and avoids long term damage to the supply side of the economy. Besides, credit support to firms helps ensuring firms to continue production and keep the supply side from declining both in the short- and long- term.

II) **Transfers to SME:** as indicated above one of the worst economic damages of the COVID – 19 is its effect on SME. The damage is severe because consumers demand for goods and services produced by these small businesses is substantially reduced since consumers do not only take precautionary saving measures by reducing spending due to the uncertainty of the crisis but also that social distancing reduces current consumption. Reduction in production and consumers' demand due to COVID -19 will cause a substantial reduction in the revenue of the SMEs. On the other hand, the majority of these small businesses are paying monthly rent for the places they are working on as well as cover their livelihood. If the situation continues, it may also cause irreparable damage since it is highly likely that they will face complete shutdown. This will not only exacerbate the already existing high unemployment rate in urban areas of the country but also that some may even fall below poverty line. It is, therefore, absolutely important to take measures for direct transfers including covering monthly rent for their working place and exempt the small businesses from any kind of tax at least for this fiscal year.

III) **Strengthening the social protection program:** As described in this paper COVID – 19 pandemic threatens the survival of small businesses and people working in the informal sector in Ethiopia particularly in urban areas. The situation entails the need to take measures that protect people working in small businesses and informal sector against falling into poverty due to the consequences of the pandemic. Social protection systems

and programs are crucial to help individuals and households cope with this crisis by reducing social and economic risks and protecting the livelihoods and wellbeing of all affected. In Ethiopia social protection programs have constitutional and policy foundations. Protecting the poor and vulnerable individuals, households, and communities from different natural and manmade adverse effects of shocks is enshrined in the country's constitution (see Articles 41 and 90 of Ethiopian constitution) (34). The national social protection policy of Ethiopia also demands to protect citizens from economic and social deprivation through emergency interventions and targeted cash transfers (35). Based on this policy, social protection programs are being implemented in urban and rural areas of Ethiopia. The Urban Productive Safety Net Program (UPSNP), which aims to address the challenges of urban poverty, provides support over 4.7 million urban poor living in 972 cities and towns since 2015/16 (36). Similarly, the rural Productive Safety Net Project (RPSNP), supported by the World Bank, has been providing transfers to rural beneficiaries since 2005 and in its current phase it is providing transfers to more than 8 million beneficiaries in rural areas (37). These programs can easily be strengthened to protect those whose livelihood is affected due to COVID – 19 shock.

- IV) **Commitment from the Political Economy leadership is very crucial:** The above suggested measures and others require strong political commitment. In this regard the lesson from Singapore is worth to mention. The role of people's confidence and trust on the political leadership and the government significantly contributed to reducing the infection rate in Singapore. Political leaders in Ethiopia both at the federal and regional levels should learn from Singapore and build trust by the Ethiopian people in how they are handling the crisis. They need to become open on how they are commanding the situation to the extent they can, admit continuing to learn as knowledge gaps is closed and to be willing to adapt policies as a result. Other key elements of developing trust among citizen are use of medical and health experts, professional associations, communicating the people with clear and trusted health related information, and updating citizens with the various efforts going – on in the country in the response to the COVID – 19 crisis. In addition, it is also essential to enhance 'testing' by establishing more testing points and design convenient testing and consultation mechanism as much as capacity allows. This requires importing test kits and other relevant medical materials that speed up testing as well as

providing incentives to medical professionals who are willing to participate in testing and consultation.

References

1. WHO <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> accessed on 9 April, 2020
2. Baldwin, R (2020), “It’s not exponential: An economist’s view of the epidemiological curve”, VoxEU.org, 12 March.
3. Paolo Surico and Andrea Galeotti (2020) The economics of a pandemic: the case of Covid-19, London Business School <https://sites.google.com/site/paolosurico/covid-19> accessed 3 April 2020
4. see <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2315> accessed on 1 April 2020
5. UNCTAD (2020) ‘Coronavirus: Can policymakers avert a trillion – dollar Crisis?’ <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2300>
6. See https://unctad.org/en/PublicationsLibrary/gds_tdr2019_covid2_en.pdf accessed on 1 April 2020
7. UNCTAD (2020) ‘Impact of the COVID- 19 Pandemic on Global FDI and GVCs: Updated Analysis’ Investment Trends Monitor, Special Issue UNCTAD March 2020
8. Baldwin, R and B Weder di Mauro (2020), Mitigating the COVID economic crisis: Act fast and do whatever it takes, a VoxEU.org eBook, CEPR Press.
9. Danny Quoh, 2020 Singapore’s policy response to COVID-19 IN ed. Baldwin, R and B Weder di Mauro (2020), Mitigating the COVID economic crisis: Act fast and do whatever it takes, a VoxEU.org eBook, CEPR Press
10. Inkyo Cheong (2020) The experience of South Korea with COVID-19 IN ed. Baldwin, R and B Weder di Mauro (2020), Mitigating the COVID economic crisis: Act fast and do whatever it takes, a VoxEU.org eBook, CEPR Press
11. see <https://www.populationpyramid.net/>, based on United Nations Data
12. Mossong J, Hens N, Jit M, Beutels P, Auranen K, et al. (2008) Social contacts and mixing patterns relevant to the spread of infectious diseases. PLoS Med 5: e74. doi:10.1371/ journal.pmed.0050074
13. Andreas Backhaus (2020) Coronavirus: Why it’s so deadly in Italy <https://medium.com/@andreasbackhausab/coronavirus-why-its-so-deadly-in-italy-c4200a15a7bf>
14. Agnès Bénassy-Quéré, Ramon Marimon, Jean Pisani-Ferry, Lucrezia Reichlin, Dirk Schoenmaker and Beatrice Weder di Mauro (2020) ‘COVID-19: Europe needs a catastrophe relief plan’ in ed. Baldwin, R and B Weder di Mauro (2020), Mitigating the COVID economic crisis: Act fast and do whatever it takes, a VoxEU.org eBook, CEPR Press.
15. Ethan Ilzetzki (2020) ‘COVID-19: The economic policy response’ <https://voxeu.org/article/covid-19-economic-policy-response> accessed on 30 March 2020
16. Christian Odendahl and John Springford (2020) ‘Bold policies needed to counter the coronavirus recession’ in ed. Baldwin, R and B Weder di Mauro (2020), Mitigating the COVID economic crisis: Act fast and do whatever it takes, a VoxEU.org eBook, CEPR Press
17. Paul Krugman (2020) ‘The case for permanent stimulus’ in ed. Richard Baldwin and Beatrice Weder di Mauro (2020) in Baldwin, R and B Weder di Mauro (2020), Mitigating the COVID economic crisis: Act fast and do whatever it takes, a VoxEU.org eBook, CEPR Press.
18. See <https://www.vox.com/science-and-health/2020/3/6/21161234/coronavirus-covid-19-science-outbreak-ends-endemic-vaccine> accessed 12 April 2020
19. Central Statistical Agency (CSA) (2013), ‘Population Projections for Ethiopia 2007-2037’ Addis Ababa July 2013
20. See <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses> accessed 9 April 2020
21. Central Statistical Agency (CSA) (2016) ‘Demographic and Health Survey’ Central Statistical Agency Addis Ababa, Ethiopia

22. Central Statistical Agency (CSA) (2016) 'Welfare Monitoring Survey 2016 Statistical Report Basic Population Characteristics, Education, Health, Child Care And Breast Feeding (Volume 1)' Addis Ababa April 2016
23. National Planning Commission (2017), 'Ethiopia's Progress Towards Eradicating Poverty An Interim Report on 2015/16 Poverty Analysis Study' Addis Ababa Ethiopia September 2017
24. World Bank, '2015/16 poverty assessment report of Ethiopia', World Bank
25. Central Statistical Agency (CSA) (2018) 'The 2015/16 Ethiopian Household Consumption – Expenditure (HCE) Survey Results: Country Level Statistical Report' January 2018 Addis Ababa
26. Mulu Gebreeyesus, Abebe Ambachew, Tigabu Getahun, Berihu Assefa Girum Abebe, Seid Hassen and Haileselassie Medhin (2018), 'Main Features of Micro and Small Manufacturing Enterprises in Ethiopia: Baseline Survey Report' Ethiopian Development Research Institute (EDRI), ISBN: 978-99944-72-63-5 Printed in Addis Ababa
27. Central Statistical Agency (CSA) (2018) 'Statistical Report on the 2018 Urban Employment Unemployment Survey' Statistical Bulletin 586, Addis Ababa October 2018
28. Alebel B. Weldesilassie (2011), 'Lettuce marketing channel, consumption and hygienic behaviors in Addis Ababa city' (unpublished report), Addis Ababa, Ethiopia, February, 2011.
29. Central Statistical Agency (CSA) (2018), 'Large and Medium Manufacturing Industry Survey report 2017_18 (2009-2010). file:///C:/Users/alebe/Downloads/manufacreport%20(3).pdf
30. Alebel B. Weldesilassie, Tigabu Getahun and Hailemariam H (2018), Impact of Agricultural Growth Program I, Ministry of Agriculture and Livestock, AGP I, 2018
31. Tassew Woldehanna, 2000. Economic analysis and policy implications of farm and off-farm employment: A case study in the Tigray Region of Northern Ethiopia. Unpublished PhD dissertation, Wageningen University, the Netherlands
32. Scott Rozelle, Heather Rahimi, Huan Wang and Eve Dill (2020) 'Lockdowns are protecting China's families from Covid – 19 but the economic burden is heavy' March 30, 2020
33. National Bank of Ethiopia (NBE) (2018) '2017/18 Annual Report' <https://nbebank.com/wp-content/uploads/pdf/annualbulletin/report-2018-2019.pdf>
34. Federal Democratic Republic of Ethiopia (FDRE) (1995) 'Constitution of The Federal Democratic Republic of Ethiopia'
35. FDRE Ministry of Labour and Social Affairs (2014), 'National Social Protection Policy', Addis Ababa, November 2014.
36. World Bank (2015), 'Urban Productivity Safety Net Project (UPSNP)' November 20, 2015 Social Protection & Labor Global Practice Africa Region'
37. Kefyalew Endale, Alexander Pick and Tassew Woldehanna (2019) 'Financing Social Protection in Ethiopia: A Long – term Perspective' OECD Development Policy Papers No.15 February 2019