Forecasting the Economic Impact of Coronavirus on Developing Countries
Case of Pakistan

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Abstract

The Coronavirus (Covid-19) pandemic has already wreaked havoc on the international economy in numerous ways, differentiating itself in particular through its impact on the "real world" economy as opposed to financial market-specific damage. Both developed and developing countries are seeking to grapple with the pandemic, and all face limitations in their resource capacities; with the shortfall being more acute in the developing world. The aim of this working paper is to present some limited forecasting through scenario analysis using an aggregate demand approach for Pakistan, so as to illustrate the possible multidurational economic impacts from the Covid-19 pandemic. The findings suggest that, FY20 declines will be massive, but faster global and local recovery rates might spur a resumption of economic activity in FY21.

CASS Working Papers on Economics & National Affairs

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Schema of Model

Expenditure Category	Propor-tions	Components	Propor-tions	Direction	Reason
Consumption (C)	82%	Food and Beverages	40%	Decrease	lockdown offset by stimulus
		Housing / Utilities	20%	Constant	continued use
		Transport	8%	Decrease	Lockdown
		Health	4%	Increase	Sickness
% Impacted with a		Communication	2%	Increase	Use in confinement
Decrease = 74%		Recreation & Culture	2%	Decrease	Facilities Closed
		Education	4%	Decrease	Schools Closed
		Restaurants & Hotels	6%	Decrease	Shuttered Business
		Other Discretionary	14%	Decrease	Lockdown
		*Unemployment		Increase	Job losses / lockdown
		Subtotal (C)	100%	Decrease	Lockdown
Government (G)	14%	Debt Servicing	33%	Decrease	Renegotiation / Clemency
		Corona Stimulus	15%	Increase	Government initiatiative
% Impacted with a		Others	52%	Increase	Development expenses
Decrease = 33%		*Revenue Collection		Decrease	Falling consumption
		Subtotal (G)	100%	increase	Corona Stimulus
Investment (I)	14%	Private Investment	71%	Decrease	falling demand / uncertainty
% Impacted with a		Public Investment	29%	Increase	stimulus measures
Decrease = 71%		Subtotal (I)	100%	Decrease	falling demand / uncertainty
Exports (X)	10%	Textiles	55%	Decrease	order cancellations / falling demand
% Impacted with a		Food Group	18%	Constant	continued use
Decrease = 82%		Other	27%	Decrease	order cancellations / falling demand
		*Remittance		Decrease	Job losses overseas
		Subtotal (X)	100%	Decrease	order cancellations / falling demand
Imports (M)	-20%	Machinery Group	13%	Decrease	decreasing capex
		Petroleum Group	27%	Decrease	price collapse
% Impacted with a		Textile Group	7%	Decrease	falling end user demand
Decrease = 91%		Food Group	9%	Constant	continued use
		Other Imports	44%	Decrease	falling end user demand
		*Currency		Decrease	flight to USD
		Subtotal (M)	100%	Decrease	commodity prices / falling demand.
GDP by Expenditure	100%				
*items not included in expenditure models					

Forecast Model of GDP Declines for the Pakistan Economy

Forecast Model GDP Declines per quarter	FY20		FY21				
	Q4 (qoq)	Total FY20 (yoy)	Q1	Q2	Q3	Q4	Total FY21 (yoy)
3 Month	-10%	-5%	-1%	0	2%	4%	5%
6 Month	-10%	-5%	-3%	-1%	0%	2%	-2%
12 Month	-10%	-5%	-5%	-3%	-2%	0	-10%

Forecasting the Economic Impact of Coronavirus on Developing Countries: Case of Pakistan

Introduction

A highly contagious viral pandemic[1] has spread across the earth, wreaking havoc on the international economy in its wake, and generating international financial market declines that are in fact steeper than those witnessed in nearly a century.[2] The root of the pandemic is a virus known as coronavirus or Covid19, for which no vaccine exists and whose spread is highly contagious in droplets and particles, leading to exponential infection rates among asymptomatic carriers.[3] Although its fatality rate is low at <3%, it disproportionately attacks the immune-compromised and the aged;[4] and while the death rate might be low, its psychological and economic impacts have been devastating. But how devastating? Some recent forecasting for the US economy is worth noting in this regard. Deutsche Bank recently predicted the US economy will shrink 13% in the second quarter; while Oxford Economics puts the decline at 12% with a loss of 1 million jobs; Capital Economics sees a 10% decline in GDP, TS Lombard 8.4% and Nationwide 8%. All of this would be comparable to the biggest contraction in modern American history.[5]

Perhaps the only beneficiary of the Covid19 is the earth itself, which is certainly getting some respite from human activity.[6] For the human-economy, however, it spells dire things, particularly given that the post-2009 boom which the global economy had been riding before the virus had largely been an unsustainable credit-binged affair,[7] reliant on the artifices of cheap lending and stock buybacks to hyperinflate asset markets.[8][9] Although clear warnings

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[1] A note on terminology: covid-19, coronavirus, and corona are used interchangeably in this paper

[2] Chu, B. (2020) US Stock Market falling faster than during Wall Street Crash. *The Independent.* March 20.

[3] Bai, Y., Yao, L., Wei, T., Tian, F., Jin, D. Y., Chen, L., & Wang, M. (2020). Presumed asymptomatic carrier transmission of COVID-19. Jama.

[4] Casadevall, A., & Pirofski, L. A. (2020). The convalescent sera option for containing COVID-19. The Journal of clinical investigation, 130(4).

[5] Bartash, J. (2020). Echoes of the Great Depression? U.S. economy could post biggest contraction ever, Capital Report. MarketWatch. March 20.

[6] Chow, D. (2020). Coronavirus shutdowns have unintended climate benefits: cleaner air, clearer water, NBC News. March 19.

[7] Hockett, R. (2019). Ten Years On: What Have We Learned? What Have We Done? What Must We Do?. Challenge, 62(1), 31-48.

[8] See Ghosh, C., & Ghosh, A. N. (2019). The Crisis in the US Economy. In Keynesian Macroeconomics Beyond the IS-LM Model (pp. 233-255). Springer, Singapore.

[9] Hossain, A. T., & Kryzanowski, L. (2019). Global financial crisis after ten years: a review of the causes and regulatory reactions. Managerial Finance.

to prepare for a pandemic had been articulated in the American system for many years,[10] they had sadly gone largely ignored. US healthcare has been declared a "disaster of a system,"[11] but evidently many developing countries (although not all, see Cuba) fare much worse. For Pakistan, however, healthcare expenditure over the past decade as a percentage of GDP wallowed between 0.2% and 1% of GDP, far lower than would be required to maintain a healthy population.[12] Given a weak healthcare infrastructure and the possibility of widespread infection, what sort of economic fallout can be anticipated in a developing country such as Pakistan?

The aim of this working paper is to provide some forecasting context to that question, attempting to estimate the 3-month, 6-month and 12-month impact of Covid19 on Pakistan, therein illustrating the risks of economic stagnation in developing countries. This leads to questions about public value creation in the ambiguous and fluid context of a widespread pandemic, one of interest to the public administration literature more broadly.[13] At its basis, the report draws upon documentary sources[14] from three different departments: the State Bank of Pakistan's (SBP) report titled the *State of the Economy,[15]* the Pakistan Bureau of Statistics (PBS) national accounts documentation, and the Ministry of Planning's (MoP) Annual Review for the previous fiscal year (FY2019), all for providing a contextual grounding. Sadly, the data is not disaggregated by quarters, and so the first half of FY2020 (July 2019 – June 2020) is not available in discrete quarterly intervals. Furthermore, as the SBP observes, "SBP data for a number of variables, such as government borrowing, public debt, debt servicing, foreign trade, etc., often does not match with the information provided by MoF and PBS."[16]

These limitations notwithstanding, three scenarios can be extrapolated for forecasting purposes from the data itself: a 3-month, 6-month, and 12-month fallout extending from March 1 (slightly before 4Q20) and into the fiscal year 2021 (July 2020 – June 2021). For the purposes of this paper, the important contribution should be seen in **discussing the levers of growth/decline** and then situating them within the larger national accounts to

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[10] See Anthony, C., Thomas, T. J., Berg, B. M., Burke, R. V., & Upperman, J. S. (2017). Factors associated with preparedness of the US healthcare system to respond to a pediatric surge during an infectious disease pandemic: Is our nation prepared?. American journal of disaster medicine, 12(4), 203-226.
[11] Myers, D. (2017). US Healthcare: A" Disaster" of a System. Pitt Political Review, 12(1), 16-19.
[12] The lowest figure was 0.23% and 0.27% of GDP in FY10 and FY11, and the highest was the still paltry 0.97% of GDP in FY18.
[13] See public value discussions in Chohan 2017a-c; 2018c-d; 2019a-d;
[14] See documentary research methodology in Chohan 2019c; comparative case studies in 2019d
[15] State Bank of Pakistan [SBP] (2020). *State of the Economy.* Karachi: SBP.
[16] Ibid, p.105.

estimate fallout across increasing periods. It should be recognized, however, that providing precise guidance about an ongoing pandemic is a fool's errand,[17] for at least three reasons:

1- the uncertainty of the virus' duration, along with relapses or a series of likely mutations,[18]

2- the exogenous nature of economic revival, i.e. the importance of recovery in China and the US for Pakistan's economy,[19] and

3- the discovery of an adequate vaccine that can remedy or inoculate a large part of the world's population.

None of these factors are within the direct or endogenous control of Pakistan, or any other developing country for that matter. Covid19 represents a global problem, but requires addressal through an interconnected web of both global and local actors. An aggregate demand approach with expenditures is used in this paper,[20] which has particular merits for the question at hand,[21] largely because the coronavirus crisis differs in one crucial way: it has a massive impact on the "real" economy as opposed to just financial assets and financial markets. The "real economy" should remain in sharp focus through any pandemic analysis, and the elements of aggregate demand: consumption (C), government expenditure (G), investment (I), and net exports (X-M) are all impacted in more visceral ways than if this were some crisis caused by financial markets and the banking sector (as in 2008 or 1987).

Yet Pakistan's case is somewhat more dire than that of other emerging markets for several reasons:

1. Pakistan's economy was already reeling from an economic slowdown before the Covid19 disease stepped into the limelight. While most Asian countries were estimating reasonable growth, Pakistan was already mired in a stagflation slowdown where prices were rising for consumers but economic activity was dwindling downwards. State Bank of Pakistan (SBP) Governor Baqir feared that growth could fall below 3.5% in the current fiscal year (FY20), but this was generous compared to the IMF forecast of an even lower 2.4%.[22]

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[17] See Bernstein, J. (2013). The folly of forecasting. Clinical Orthopaedics and Related Research, 471(5), 1415-1418.

[18] Covid19 is very likely to mutate; see Qin, C., Liu, F., Yen, T. C., & Lan, X. (2020). 18 F-FDG PET/CT findings of COVID-19: a series of four highly suspected cases. European Journal of Nuclear Medicine and Molecular Imaging, 1-6.

[19] Both China and the US are among Pakistan's top 5 trading and investment partners

[20] See Aschauer, D. A. (1985). Fiscal policy and aggregate demand. The American Economic Review, 75(1), 117-127.

[21] See also Blanchard, O. J., & Quah, D. (1988). The dynamic effects of aggregate demand and supply disturbances (No. w2737). National Bureau of Economic Research.

[22] Ahmed, S.H. (2020). Pakistan's economy battling a host of challenges. Express Tribune. February 11.

2. Pakistan was under attack from well-heeled international mafiosos in the form of the FATF, the IMF, and other international agencies, operating under the influence of the United States and India. These institutions, notably the FATF, had been hijacked to pursue an agenda that was complemented by actual physical (i.e. traditional security) threats from a reckless Indian government in 2019.[23]

3. Third, the low tax base, import dependency, and weak socioeconomic structure of society meant that the government was already forced into running longstanding fiscal borrowing activities, which severely reduced its fiscal space even before Covid19 arrived.

4. Fourth, agricultural output in a still agri-dependent economy was being hammered by a locust invasion on croplands in the center and south of the country,[24] driven in part by climate shifts.

5. Healthcare expenditures in Pakistan were already exceedingly low. Over the past decade, healthcare expenditure as a percentage of GDP hovered between 0.2% and 1% of GDP, far lower than would be required to maintain a healthy population. The lowest figure was 0.23% and 0.27% of GDP in FY10 and FY11, and the highest was the still a paltry 0.97% of GDP in FY18.

As such, the "pre-existing conditions," to borrow from the medical jargon, within the Pakistani political-economy already made the situation one of hardship and squalor before the virus imposed itself. Given the aforementioned considerations, the approach of the paper is as follows. On one hand, an emphasis is laid on the economic machinery of Pakistan in terms of the constitutent drivers of GDP growth, using an aggregate demand (expenditures appraoch) that is supplemented by the aforementioned documentation from three deparments.[25] On the other hand, a discussion about the moving parts that are most likely to be affected by coronavirus outbreak of 3-, 6- and 12-months is presented. A final section discusses the findings of the paper and its limitations, with a view to justifying such as exercise even as coronavirus unfolds.

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[23] See bargaining theory approaches to the Pulwama War, where the Pakistan Air Force neutralized Indian aggression, Chohan 2019f-g
[24] Karachi saw its first locust infestation since 1961.
[25] MoP, PBS, and SBP, as mentioned earlier

Aggregate Expenditure View

As a point of departure, it is worth considering the breakdown of national GDP by expenditure. The primary categories are, as per the conventional formula: C+I+G+X-M. Yet the categories are not evenly split by importance or magnitude within the Pakistan economy, with consumption amounting to 82% of net expenditure,[26] while government spending and fixed capital investment accounts for nearly 15% each, and net exports are negative with imports roughly double the size of exports (a net -10% weighting).

Table 3: Expenditure on GDP at Current Prices with Proportions

Expenditure Categories	2018-2019	Proportions
	Rs. Millions	
Consumption (C) - Household final consumption expenditure	31670577	82%
Government (G) - General government final expenditure	4871495	13%
Investment (I) - Gross Fixed Capital Formation	5339956	14%
Exports (X) - Exports of goods & non-factor services	3733088	10%
Imports (M) - Imports of goods & non-factor services	-7673286	-20%
GDP by Expenditure	38558770	100%

Source: Pakistan Bureau of Statistics

In terms of contribution to GDP growth, the figure below illustrates how consumption has been the largest contributor for most of the past 12 years, with net exports generally decreasing GDP growth and investment only assisting consumption marginally (particularly after the initiation of CPEC[27]).

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[26] The notion of the "net expenditure" underscores the fact that the components of the formula sum to 100 after imports (a negative value) are subtracted.

[27] CPEC: The China-Pakistan Economic Corridor, a $60 billion infrastructure-oriented bilateral stimulus program coordinated between China and Pakistan.

Figure 1: Contribution in Percentage Points to GDP by Expenditure Category
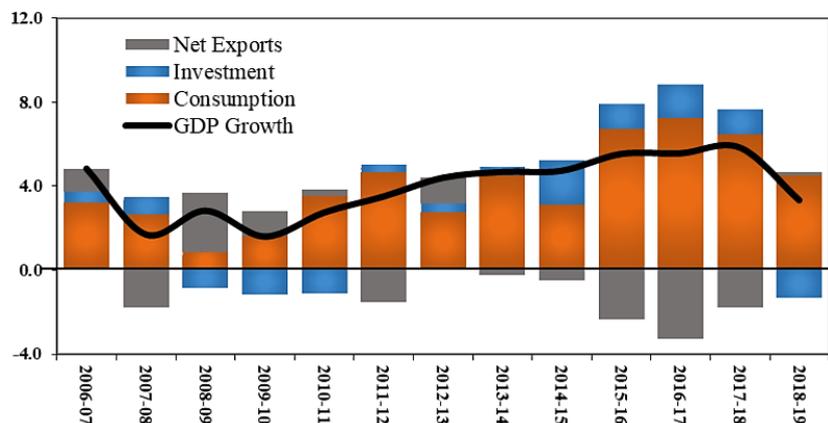
Source: Ministry of Planning

From this, we may glean several important points regarding each expenditure type, which are discussed in fuller detail in the next few subsections.

Consumption

The first point is that disruptions to consumption from Covid19 must be minimized, given that it is both the largest share (>80%) of GDP and is the largest contributor to GDP growth. Even as people will be affected by lockdowns, at least the essential service elements (the consumer staples) must be kept running. Drawing upon Pakistan Bureau of Statistics (PBS) data over the past ten years, we may infer that essential consumption items including food, beverages, housing, water, and utilities amount to 60% of household consumption,[28] while transport accounts for another 8%. As such, a full 2/3rds of household consumption in Pakistan is of non-discretionary staples, and so long as the lockdowns do not entirely disrupt these consumption patterns, a constant tranche of GDP activity will pursue. However, that is not entirely guaranteed, particularly for transport which will be disrupted; and access to consumption stores will be kept to a minimum.

Therefore, some degree of non-discretionary consumption will be impacted, while discretionary items will certainly be curtailed. Chief among these curtailed categories will be recreation & culture (2%), education (3%), and restaurants (5%), which will certainly fall since hotels, schools, and restaurants are uniformly closed. Surprisingly, healthcare amounts to a paltry 3-4% of monthly consumption expenditure, and this is very likely to spike in Covid19 conditions, albeit to an indeterminate degree. The table below disaggregates these monthly

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[28] This varies by 5 percentage points for rural-urban divide

consumption categories based on a ten-year average including rural and urban consumption patterns.

Table 4: Household Consumption Monthly Breakdown

Household Consumption - Monthly Breakdown	10-Year Average (Rural & Urban Avg, approx)	
Food and Beverages	40%	*Staples*
Housing / Water / Utilities	20%	
Transport	8%	
Health[29]	4%	*Discretionary or Semi-Discretionary*
Communication	2%	
Recreation & Culture	2%	
Education	4%	
Restaurants & Hotels	6%	
Other Discretionary	14%	
Total	100%	Total

Source: Pakistan Bureau of Statistics

However, whether consumption of staples remains fairly constant hinges in large part on the **unemployment rate**, because income levels will be disrupted by the joblessness of lockdown activity. Unemployment is rising due to the Covid19 pandemic in all countries. Recent data from the US Labor Department for the third week of March 2020 indicates that US jobless claims have skyrocketed to 3.3 million,[30] which was up from just 0.2 million the week before. This eclipsed what analysts were forecasting to be 1.7 million, meaning that consensus estimates of the magnitude were themselves too cautious; given that the US has officially become the country with the highest number of corona cases. In fact, the jobless claims from the US are the highest in history (records being kept since 1967).[31]

This should give an indication of where developing countries are headed but to a worse degree. According to World Bank Data, 7% of the Pakistani population lives on less than $1.90 a day, but 33% lives on less than $3.20 a day, and a full 75% lives on less than $5.50 a day.[32] The pattern is magnified around the world, since one in every two people on earth lives on less than $5.50 per day.[33] This data helps us to infer the size of the daily wager

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[29] Health is treated as an essential staple in developed countries, but in the developing world is often a discretionary item for many households that must save to afford medicinal, pharmaceutical, or hospital access.

[30] Badkar, M., Greenley, B. and Smith, C. (2020). US jobless claims surge to record 3.3m as America locks down. *Financial Times.* March 26.

[31] Ibid.

[32] Joliffe, DM, and Wadhwa, D. (2018). Nearly 1 in 2 in the world lives under $5.50 a day. World Bank Blogs. https://blogs.worldbank.org/opendata/nearly-1-2-world-lives-under-550-day.

[33] Ibid.

class in Pakistan, which might account for at least 70 million people in Pakistan.[34] International reporting based in Pakistan has highlighted that, in the first two weeks of the corona lockdown in Pakistan, many daily wage laborers have been going home virtually hungry, with but a slice of bread or biscuit, since there are not getting any menial jobs to earn from .[35][36] This problem is being magnified in other neighboring poor countries, such as India, where the sheer mass of destitution is far greater and the inequalities more stark; due to which daily wagers are being rendered destitute by the hour.[37]To combat this joblessness crisis, the Pakistani government is initiating a stimulus program that will include disbursements of 12,000 rupees ($75) to low-income earners, affecting an estimating 67 million people,[38] which will fall under the next section of government expenditure (G).

Government Expenditure: Stimulus

As mentioned above, the Government of Pakistan has not stood still in this crisis, and despite all of the fiscal constraints mentioned at the beginning of this paper, initiated a Rs.1.2 trillion stimulus program (or "relief package") that will be targeted towards the working poor. Government spending shall therefore rise in the next few quarters as disbursements and transfer payments are made that seek to alleviate the increasing pressures in society's lowest echelon. This counter-cyclical spending will be the only positive driver of GDP growth in the upcoming quarters;[39] but it will in turn raise two questions: (1) is the size adequate to spur activity and provide relief? and (2) how might it impact the fiscal burden that Pakistan carries? Data from the Ministry of Finance shows that a substantial chunk of the current expenditures of the government are in interest payments on domestic and foreign borrowing,[40] amounting to 36% of current expenditures in 1Q20 and 33% of total expenditures in that period, while rowing year on year by 12%, well ahead of GDP growth. Development expenditures, such as the Public Sector Development Program (PSDP), whose resources are being channeled towards fighting Covid, amount to just 9% of total

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[34] Another estimate is of 67 million, but this appears conservative. See Hashim, A. (2020). Pakistan daily wagers struggle to survive in coronavirus lockdown. March 25.
[35] Hashim, A. (2020). Pakistan daily wagers struggle to survive in coronavirus lockdown. March 25.
[36] There is a very strong case, although it lies outside the scope of the conventional model (except for partial reflection in C and I), for philanthropic activity to take place on a massive scale. In previous crises such as the 2005 earthquake, there was a large-scale philanthropically-driven movement to alleviate the hardships of the public. That civil-society public value creation effort must be replicated today to bring relief to the afflicted masses.
[37] Dore, B. (2020). India's lockdown is proving disastrous for millions of daily wagers. TRT World. March 26.
[38] Hashim, A. (2020). Pakistan daily wagers struggle to survive in coronavirus lockdown. March 25.
[39] Aside from import reductions due to price compression (oil)
[40] See longer historical analysis of debt sustainability in Chohan, U.W. (2019h). Fiscal Sustainability: A Historical Analysis of Pakistan's Debt Conundrum. Centre for Aerospace and Security Studies (CASS). CASS Working Papers on Economic and National Affairs. EC005UC.

expenditures and only appear to be growing fast due to a steep year-on-year drop in 1Q19 while being lower in absolute terms than in 1Q18 (Rs. 142 billion in 1Q20 vs. 165 billion in 1Q18). New borrowing under the IMF's Extended Fund Facility in 2019, and its concomitant austerity stranglehold, already narrowed the fiscal space in which the country could maneuver.

Table 5: Analysis of Fiscal Spending, MoF 1Q20

	Q1				Growth		
	FY18	FY19	FY20	Abs. change	FY18	FY19	FY20
Current expenditures	**1,240.5**	**1,479.9**	**1,582.2**	**102.2**	**15.9**	**19.3**	**6.9**
Federal o/w	846.4	999.3	1,069.7	70.5	11.7	18.1	7.1
Interest payment	445.4	507.1	571.7	64.6	7.5	13.9	12.7
Defence	181.9	219.4	242.6	23.2	20.1	20.6	10.6
Public order and safety	27.9	32.7	33.3	0.6	16.2	17.1	1.9
Others	191.2	240.1	222.1	-18.0	13.8	25.5	-7.5
Provincial	394.1	480.7	512.4	31.8	25.9	22.0	6.6
Development expenditures	**189.9**	**109.2**	**142.5**	**33.3**	**-0.6**	**-42.5**	**30.5**
PSDP	165.0	106.6	142.4	35.8	-1.3	-35.4	33.6
Federal	69.5	50.9	71.8	20.9	8.4	-26.8	41.1
Provincial	95.4	55.7	70.6	14.9	-7.4	-41.6	26.7
Others (including BISP)	24.9	2.6	0.1	-2.5	3.9	-89.5	-96.0
Net lending	**0.9**	**-0.3**	**4.7**	**4.9**	**-**	**-**	**-**
Total expenditure*	**1,431.3**	**1,588.9**	**1,729.3**	**140.4**	**13.5**	**11.0**	**8.8**

Therefore, the government's initiative on a relief package should be lauded but nevertheless seen within the context of massive interest payments that abound. For the purposes of simplicity within this paper, the revenue collection problem is left out in an aggregate demand expenditure approach to the problem. However, Covid19 will indeed have a negative effect on the revenue collection of government in both direct and indirect (VAT, sales tax) methods. As for the question of mitigating the loss from joblessness (whether G compensates for C in the aggregate demand model). It is worth disaggregating the elements of the government's announced Rs. 1.2 trillion ($7.2Bn) relief package in the table below.

Table 6: Government Corona Relief Package Breakdown

Corona Relief Package Tentative Breakdown	Rs. Billions	% of package	Category
Daily wage transfer payments	200	17%	C
Tax refunds to businessmen, exporters and industry	100	8%	I+X
SMEs, agriculture, deferred interest payments, concessional loan facility	100	8%	I
Poor family transfer payments (Rs. 3000)	150	13%	C
Utility stores initial tranche	150	13%	C
Utility store later tranche	50	4%	C
Wheat procurement	280	23%	C
Lowering petrol	70	6%	C

Medical Workers	50	4%	G
NDMA	50	4%	G
Total	**1200**	**100%**	**All**
Reserve Fund	100		

Source: Author's research, GoP (2020)

Figure 2: Government Corona Relief Package Breakdown
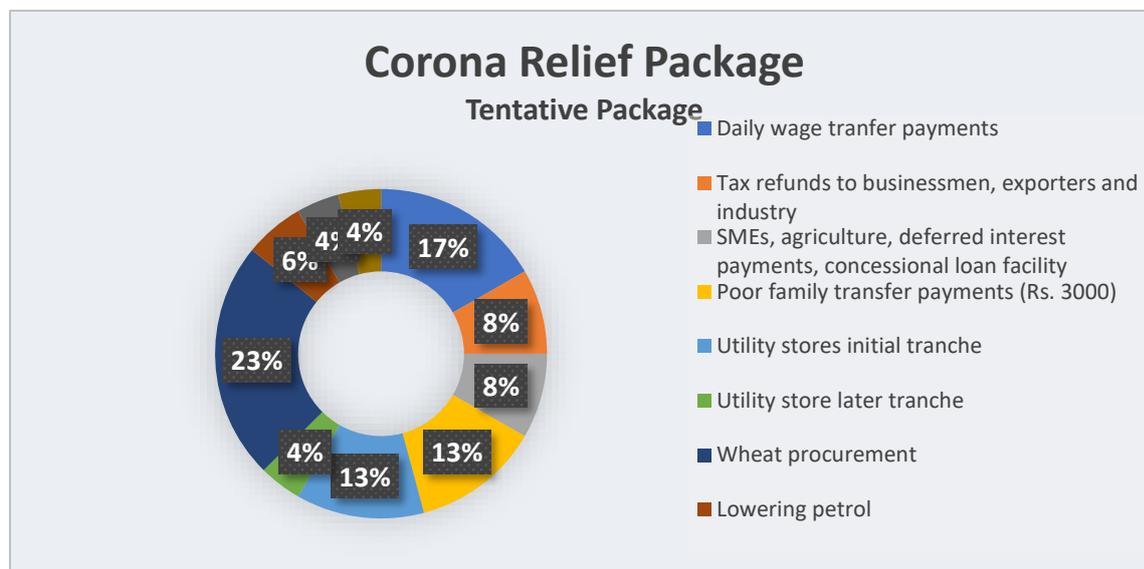
Source: Author's research, GoP (2020)

The tentative nature of the proposed corona relief package offers some important prognostications for its effect amidst the crisis of Covid19. First, it is roughly twice the size of the annualized expenditure on Public Sector Development Program (PSDP), but half the size of the annualized interest expenses on domestic and foreign debt (pre-IMF EFF). It therefore reflects a reasonable attempt to navigate a difficult and constrained fiscal space; and should be coupled with pressure put on lending institutions such as the IMF and groups such as the Paris Club to issue debt forgiveness pledges. Second, it is largely diverted towards assuring that the national consumption function isn't gravely disrupted, with about 75% allocation towards consumption-related issues including transfer payments, supply chain assurances, subsidies, and guarantees. This is a positive measure because it (1) reflects the importance of consumption to GDP, and (2) is targeted towards the lower strata. Third, for investment expenditure & capital formation, it allocates roughly 15% of the relief package to tax refunds, deferred interest payments, and concessional loans, both to Small & Medium Enterprises (SMEs) and Large-Scale Manufacturers (LSMs) alike. This reflects the relative weight of investment within the national expenditure function, and is discussed briefly below.

Investment & Capital Formation

Investment & Capital Formation was already on the decline before Covid19 hit,[41] and could be described as the victim of multifarious challenges, including "energy crises, fluctuating [raw material] prices, shortage of gas supply and load shading, law and order situation, devaluation of Pakistani currency, lack of research and development (R&D) institutions, lack of modern equipment and machinery and production costs."[42] For reference purposes, out of the 14% of GDP that investment expenditures represents, 10% is private and 4% is public investment, and these proportions have been steady for the past five years.[43]

Key to the Investment category is the industrial sector, which plays a significant role in the economic development of any country. Industry employs 24 percent of total labour force, but the industrial sector growth has remained muted in the past few years. In FY19 and it grew by 1.4% compared with 4.9% in 2017-18. The Large Scale Manufacturing (LSM) dominates the overall industrial sector, accounting for 50 percent of the sectoral share. With respect to financing in particular, which the relief package seeks to address to some degree, it is worth noting that even pre-March 2020, "since the private sector was not getting enough bank financing, it is producing less; and this low production is dragging down the GDP growth,"[44]

A mainstay of Pakistan's investment & capital formation drive over the past 5 years was the China-Pakistan Economic Corridor (CPEC), which is a $60 billion infrastructure-oriented bilateral stimulus program jointly coordinated by China and Pakistan as part of the larger One Belt One Road Infrastructure.[45] Phase 1 of CPEC was more capital-intensive and raised production activities in several sectors including construction, but Phase 2 (currently underway) is one of consolidating infrastructure and bringing in enterprise. In addition to the structural issues above, there has been a glaring lack of a "value seeking imagination"[46] on the part of local entrepreneurs.

The concentration of LSMs in the textile industry has also led to sector-specific risks, since textile has accounted for 8-10% of GDP in the investment category over the past twenty years (not to mention its share in exports X),[47] and is more than one-third of the LSM

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[41] State Bank of Pakistan [SBP] (2020). State of the Economy. Karachi: SBP.

[42] W. Shah, Warraich,U. and Kabeer, K. (2012). Challenges Faced by Textile Industry of Pakistan: Suggested Solutions. KASBIT Business Journal, 5:33-39

[43] Ministry of Planning Data.

[44] Ahmed, S.H. (2020). Pakistan's economy battling a host of challenges. *Express Tribune.* February 11.

[45] See One Belt One Road in Chohan 2018a-b

[46] See "value seeking imagination" in Chohan 2019a.

[47] Pakistan Bureau of Statistics (2019). (2019). Sector Shares in GDP (Constant Prices). PBS: Islamabad.

category in terms of volume.[48] Textiles were also the largest private sector capital expenditure (capex) investors in the current fiscal year (with Rs.8.1 billion investment), driven by concessional loan arrangements such as the Long-Term Financing Facility (LTTF).[49] But the government was in fact making things tougher for the textile industry lately, since the collection from sales tax on textile products increased to Rs 2.1 billion as compared to Rs 0.6 billion in the previous year, following the elimination of zero-rating regime for the sector.[50] So would the government's relief package, which is only tangentially focused on industrial strength, serve the purpose of rescuing industries such as textiles? Unlikely so, particularly given the export orientation of this industry and the global impact on net exports expenditure category (X-M), which is discussed next.

Net Exports

Pakistan's imports are slightly diverse but its exports are limited, and the net difference is a ratio of -2:1 with larger imports. We may cover imports first in this regard, **particularly oil**, since in recent years, the "petroleum group"[51] of imports has accounted for 25% of Pakistan's import bill.[52] In FY19, this amounted to $11.8bn out of $44bn, meaning that any reduction in the prices of petroleum imports would be a welcome relief. At present, a Saudi-Russian oil price-war and rivalry has begun to commodity's the commodity's international price.[53] Predictions are that this would reduce the internationally denominated price of oil to $20 a barrel.[54] This would augur well for the Pakistani economy, and this is factored into the model as a price-adjusted reduction in the import bill. Aside from the petroleum group, machinery imports also constitute an important import category. Cyclical industries such as those dependent on machinery imports, metal (iron & steel) imports, and textile-related imports are likely to fall due to a decline in industrial demand as a function of falling demand for (1) export-related industry (textile), and (2) phase-2 of CPEC (lower machinery requirements).

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[48] State Bank of Pakistan (2020). State of the Pakistani Economy. SBP: Karachi.
[49] Ibid.
[50] Ibid.
[51] (including crude oil, gas, and petroleum products; but excluding edible oils such as palm oil)
[52] MoP figures.
[53] On 8 March 2020, Saudi Arabia initiated a price war with Russia, triggering a major fall in the price of oil, with US oil prices falling by 34%, crude oil falling by 26%, and brent oil falling by 24%. The price war was triggered by a breakup in dialogue between the Organization of the Petroleum Exporting Countries (OPEC) and Russia over proposed oil production cuts in the midst of the 2019–20 coronavirus pandemic. See Egan, M. (2020). "Oil crashes by most since 1991 as Saudi Arabia launches price war". CNN. March 10.
[54] Stevens, P. (2020). Goldman slashes oil forecast, sees US crude at $20 per barrel. CNBC. March 17.

Table 7 Contribution of Various Groups in Total Imports

Contribution of Various Groups in Import	1Q18	1Q19	% of total 1Q19
$USD millions			
Food Group	4542	3994	9%
Machinery Group	7283	5579	13%
Petroleum Group	*11023*	*11859*	27%
Textile Group	*3330*	*3267*	7%
Metal Group	*3904*	*3306*	8%
All Other Items	16220	16028	36%
Total Imports	46302	44033	*100%*

Source: Ministry of Planning

On the exports side, the **textile group** represents nearly 55% of all exports), as the table below indicates. Cotton Yarn itself accounts for nearly 5% of all exports, while cotton cloth accounts for 9%, knitwear 11%, bedwear 9%, and readymade garments a full 10%. But to foresee how textile exports will fare in Covid19's aftermath, recent data out of Bangladesh might be indicative.[55] European and U.S. buyers including Primark, the budget fashion-chain owned by Associated British Foods Plc, have collectively canceled about $1.5 billion of Bangladesh garment orders as Covid19 roils demand. As many as 1,089 Bangladesh garment factories have seen orders getting scrapped, according to the president of the Bangladesh Garment Manufacturers and Exporters Association.[56]

Table 8: Contribution of Various Groups in Total Exports (esp. Textiles)

| Contribution of Various Groups in Exports	1Q18	1Q19	% of total 1Q19
$USD millions			
Food Group	3899	3708	18%
Textile Group	11107	11353	54%
Cotton Yarn	*1021*	*1002*	*5%*
Cotton Cloth	*1801*	*1838*	*9%*
Knitwear	*2162*	*2394*	*11%*
Bedwear	*1953*	*1975*	*9%*
Readymade Garments	*2074*	*2118*	*10%*
Other Manufactures	3462	3158	15%
All Other Items	2021	2780	13%
Total Exports	20489	20999	*100%*

Source: Ministry of Planning

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[55] Devnath, Arun. (2020). European Retailers Scrap $1.5 Billion of Bangladesh Orders. Bloomberg News. March 23.
[56] Ibid.

These cancellations are directly impacting lives of 1.2 million workers. Bangladesh is a larger garment exporter than Pakistan, coming in second place after China, and readymade clothing factories employ more than 4 million people while the industry accounts for 13% of their GDP. Pakistan's proportion is smaller but still large.

An important mention should also be made to Pakistan's "export of labor," i.e. the remittances earned from abroad. Remittances have provided an important lifeline to Pakistan in previous years, sending roughly $1 billion dollars *per month* for the past two decades, peaking in FY18 when remittances hit nearly $20 billion. In terms of geographical distribution, Saudi Arabia has remained the largest contributor country with 23.4 percent share followed by UAE (21.2%), USA (15.6%), UK (15.4%) and other GCC countries (9.6%).[57] Previous international financial crises have put pressure on overseas Pakistanis, and Covid19 will be no different. This is particularly true since many diaspora households occupy blue-collar positions in the GCC countries, which depend on income from cyclical industries, particularly in construction, maintenance, lower-tier services, and hospitality. When these industries are locked away, then the labor class will feel the pinch of unemployment or wage compression, and that too without the guarantee of employment insurance given their non-permanent or semi-permanent resident status. As with the precariate daily wager class domestically, the Overseas Pakistani precariate class will face turbulence in a protracted Covid19 slowdown.

Figure 3: Flow of Workers' Remittances ($USD Billion)
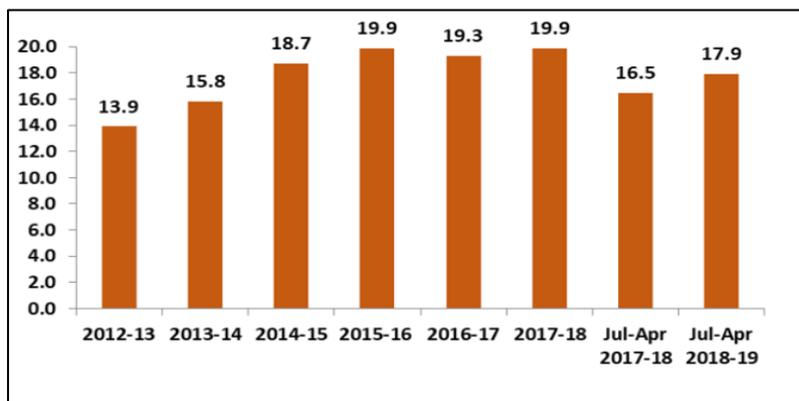
Source: SBP

In the same way that the consumption function (C) will be determined by unemployment, the net exports function (X-M) will also depend on the currency (PKR) in relation to the basket of international currencies. During crisis periods, there is a global investor tendency to take a

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[57] Figures are specifically for Jul-Apr 2018-19 period (1Q19), Ministry of Planning documents

flight to the safety of the US dollar,[58] given its status as world reserve currency.[59] There is some inclination for this to change given the whopping $4 trillion stimulus in liquidity that the US intends to deploy for Covid19.[60] In fact, greater doubts should linger around the US dollar's value after such a massive amount of (perhaps largely "misdirected"[61]) pump-priming stimulus is infused into the economy. Initially, however, investor instincts on flight-to-safety are likely to prevail, thereby weakening other currencies, particularly emerging market currencies (such as PKR). This is already being made evident, as the USD is hitting historic highs, as of this writing, against the PKR of 169 to a dollar.[62] While a boost to exporters in peacetime conditions, the slashing of orders due to overseas demand declines will not translate into export growth as desired. At the same time, although key import commodities, particularly the petroleum group, are likely to fall, the currency effect will slightly offset the overall import bill in currency translation terms.

Scenario Analysis

From the aforementioned factors of aggregate demand (expenditure side) and some analysis of specific sectors, we may devise a limited analysis of scenarios based on their impact on the Pakistan economy over a 3-month, 6-month, and 12-month horizon. This should help to illustrate the plight of many developing economies as their aggregate demand functions are struck by the coronavirus' recessionary impact. It may help to first delineate the timelines that come into focus at this juncture. A 3-month impact assumes that the world's economic machinery recovers quickly as the major economies undertake a "fantastic" rebound,[63] which is an absolute and exceedingly optimistic best-case scenario. The 3-month impact would represent the period until June 2020, and thus correspond to the end of the current fiscal year (FY2020).

Figure 4: Fiscal Year and Calendar Year Timelines

Calendar Year	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
Fiscal Year	3Q20		4Q20			1Q21			2Q21			3Q21	

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[58] Stavrakeva, V., & Tang, J. (2019). The Dollar During the Great Recession: US Monetary Policy Signaling and The Flight To Safety (No. 14034). CEPR Discussion Papers.
[59] Baele, L., Bekaert, G., Inghelbrecht, K., & Wei, M. (2020). Flights to safety. The Review of Financial Studies, 33(2), 689-746.
[60] Chohan, U.W. (2020). The Coronavirus Impacts on the World Economy. Indus News. Interview. March 22.
[61] Misdirected in the sense that the Republican version of the stimulus plan disproportionately large corporations that had been engaging in stock buybacks with cheap lending rather than amassing a war chest of cash for a rainy day.
[62] Ahmed, A. (2020). US Dollar hits new highs against Pak Rupee. *Business Recorder.* March 27.
[63] "fantastic" in the etymological sense of "fantasy"

A 6-month coronavirus fallout would, from the current epidemiological perspective,[64] still be somewhat optimistic in terms of the anticipation of a vaccine, remedial actions to mitigate international uncertainty, and undoing the damage from lockdowns and stalled economic activity. Yet it would be a more sober horizon to anticipate miraculous rebounds, and would pass onto the next fiscal year (FY21) in calculation. A 12-month coronavirus would be sobering but more encompassing of the devastation that the second-order effects of the crisis would entail. Calculating beyond this horizon would be foolhardier than any fool's errand. [65]

Some difficult assumptions must be made in the modelling exercise, and it should be remembered that any model's usefulness is predicated on its assumptions.[66] First, whether relief on debt servicing is accepted or not is an open question, given the "vampiric pathology" of the IMF and other creditors, "akin to coronavirus itself."[67] It is assumed, however naively, that some relief is offered by international creditors (impacting government spending, G). Second, it is assumed that the physical lockdowns are imposed leniently, in the first three weeks of April, to be repeated once in June in a likely aftershock (impacting all three scenarios along consumption function C).[68] More lockdowns than this is difficult to imagine, given that there is already strong resistance to the current imposition, with people flocking willy-nilly to public spaces including parks and mosques despite being strongly advised against doing so.[69]

Third, it is assumed that the stimulus measures around the world, but particularly in the US, UK, and China, will start to have an impact on financial markets after 6-months once investors feel that much of the damage has been absorbed and reflected in asset class values (particularly equities). This will impact investment (I), consumption (c), and net exports (x-m). Fourth, it is assumed that the government's corona stimulus will provide some cushion to consumption, but will not be able to offset entirely the effects of unemployment and

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[64] See example in Bai, Y., Yao, L., Wei, T., Tian, F., Jin, D. Y., Chen, L., & Wang, M. (2020). Presumed asymptomatic carrier transmission of COVID-19. Jama.

[65] See Bernstein, J. (2013). The folly of forecasting. Clinical Orthopaedics and Related Research, 471(5), 1415-1418.

[66] Kuorikoski, J., Lehtinen, A., & Marchionni, C. (2010). Economic modelling as robustness analysis. The British Journal for the Philosophy of Science, 61(3), 541-567.

[67] Chohan, U.W. (2020). Corona-capitalism. *The Nation.* March 23.

[68] This would be akin to China sealing its airports to foreigners well after no new cases are reported. Ruwitch, J. and Kennedy, M. (2020). China Temporarily Closes Its Borders To Foreign Nationals. *NPR.* March 26.

[69] Abi-Habib, M., ur-Rehman, Z. and Mehsud, I.T., (2020). 'God Will Protect Us': Coronavirus Spreads Through an Already Struggling Pakistan. New York Times. March 26.

essential consumption. From this, we may arrive at a schema of the economic model in question, as presented below.[70]

Table 9: Schema of Model

Expenditure Category	Propor-tions	Components	Propor-tions	Direction	Reason
Consumption (C)	82%	Food and Beverages	40%	Decrease	lockdown offset by stimulus
		Housing / Utilities	20%	Constant	continued use
		Transport	8%	Decrease	Lockdown
		Health	4%	Increase	Sickness
% Impacted with a		Communication	2%	Increase	Use in confinement
Decrease = 74%		Recreation & Culture	2%	Decrease	Facilities Closed
		Education	4%	Decrease	Schools Closed
		Restaurants & Hotels	6%	Decrease	Shuttered Business
		Other Discretionary	14%	Decrease	Lockdown
		*Unemployment		Increase	Job losses / lockdown
		Subtotal (C)	100%	Decrease	Lockdown
Government (G)	14%	Debt Servicing	33%	Decrease	Renegotiation / Clemency
		Corona Stimulus	15%	Increase	Government initiatiative
% Impacted with a		Others	52%	Increase	Development expenses
Decrease = 33%		*Revenue Collection		Decrease	Falling consumption
		Subtotal (G)	100%	increase	Corona Stimulus
Investment (I)	14%	Private Investment	71%	Decrease	falling demand / uncertainty
% Impacted with a		Public Investment	29%	Increase	stimulus measures
Decrease = 71%		Subtotal (I)	100%	Decrease	falling demand / uncertainty
Exports (X)	10%	Textiles	55%	Decrease	order cancellations / falling demand
% Impacted with a		Food Group	18%	Constant	continued use
Decrease = 82%		Other	27%	Decrease	order cancellations / falling demand
		*Remittance		Decrease	Job losses overseas
		Subtotal (X)	100%	Decrease	order cancellations / falling demand
Imports (M)	-20%	Machinery Group	13%	Decrease	decreasing capex
		Petroleum Group	27%	Decrease	price collapse
% Impacted with a		Textile Group	7%	Decrease	falling end user demand
Decrease = 91%		Food Group	9%	Constant	continued use
		Other Imports	44%	Decrease	falling end user demand
		*Currency		Decrease	flight to USD
		Subtotal (M)	100%	Decrease	commodity prices / falling demand.
GDP by Expenditure	100%				
*items not included in expenditure models					

Plugging in for the subtotals of C+I+G+X-M in the model above allows for a disaggregated treatment of the various levers that were discussed in the body of this paper. From this, we can impute quarterly GDP growth estimates, reflecting the various movements of expenditure components. [71] This leads to a forecast model over the horizon (FY20-FY21) displayed earlier, and demonstrates that the scope of the GDP declines will be a function of the estimated period of economic drawdown, in our model whether at 3-months, 6-months, or 12-months, with the latter two impacting FY21 severely as well. The data is expressed in terms of quarterly changes (qoq) and yearly changes (yoy).

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[70] This is also presented at the beginning of the paper.
[71] By convention, and for brevity, the calculations are omitted from this paper. However, they are available with permission from CASS, by contacting cass.thinkers@gmail.com

Table 10: Forecast Model of GDP Declines for the Pakistan Economy

Forecast Model GDP Declines per quarter	FY20		FY21				
	Q4 (qoq)	Total FY20 (yoy)	Q1	Q2	Q3	Q4	Total FY21 (yoy)
3 Month	-10%	-5%	-1%	0	2%	4%	5%
6 Month	-10%	-5%	-3%	-1%	0%	2%	-2%
12 Month	-10%	-5%	-5%	-3%	-2%	0	-10%

Source: Author's Research

Forecast Model of GDP Declines per Quarter
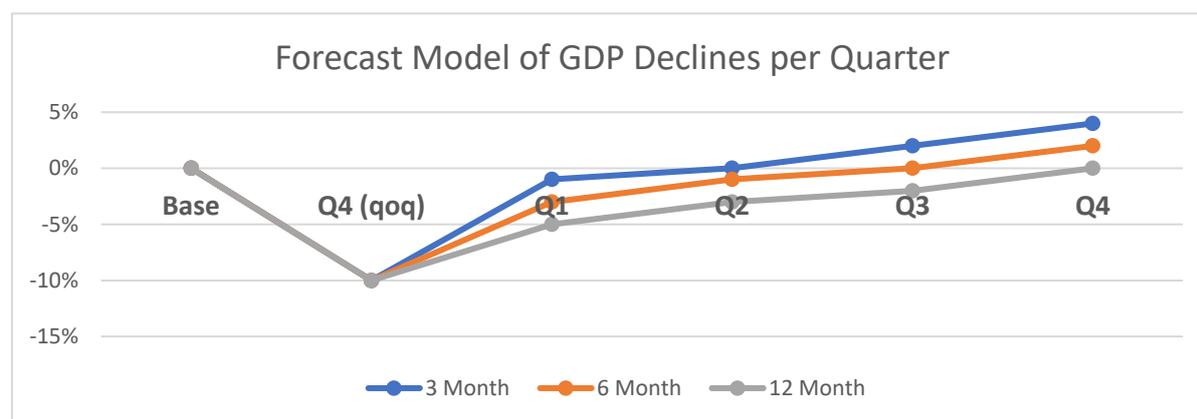
The constant factor across each of the scenarios is that the present 3-month period (Q420) will be uniformly devastating, due to lockdowns, unemployment, cancellation of orders, deferment of investment plans, and other abovementioned factors. This will be offset to some extent by the government stimulus program and the fall in certain input prices. This model assumes, however, that the stimulus will not be adequate to compensate entirely for the disruptions given its limited scope.[72] All scenarios follow a largely symmetrical progression, with the assumption that declines will be borne out initially, but the greater the prolonged prevention measures and devastation of Corona, the slower the quarter-on-quarter (qoq) recovery. A 12-month recessionary period, while entirely plausible, would be very difficult for any economy, developed or developing, to stomach. A 6-month recessionary phase would be grinding but palatable. A 3-month phase, which would in fact lead to positive yoy figures in FY21, would be ideal but far-fetched given factors discussed earlier in this paper such as time to vaccine deployment and resumption of global supply chains.

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[72] For comparison, the Pakistani stimulus is $7.2 billion (Rs. 1.2 trillion), while the US liquidity splurge is up to $4,000 billion in total (using several mechanisms including Treasury, the Fed, and Congress.

Conclusion

There is an appointed time for each of us to depart. Covid19 may be the agent of our death, or it might not, but the disruptions that it is leaving in its wake have shaken the world's political, economic, and social foundations with a burst of tremors. The brunt of that impact is likelier to be felt over time in developing countries, where health systems, fiscal resources, and governance issues hamper remedial actions. The aim of this working paper was to provide some limited forecasting work on the economic impact of Covid19 across varying time-horizon scenarios, to illustrate the economic dangers posed by coronavirus to developing countries. Pakistan is particularly indicative of the anticipated hardships since its economy was already in the doldrums before Covid19 was even contracted by a human. Despite that, the Pakistani government has mobilized an action plan and arranged a stimulus program what, despite its modest size, may help to alleviate at least some of the pressure faced by the economy. However, it does not have the fiscal space to launch Universal Basic Income (UBI) programs or a Green New Deal (GDN),[73] and its response to the problem will remain hampered by resource constraints.

This paper sought to break down the impacts across the components of aggregate demand (C+I+G+X-M) to illustrate with logical argumentation just *what* sorts of headwinds would be faced and *where* in the national accounts. This exercise, while providing a strong forecasting indication, is fraught with limitations that may prove its suggestions erroneous in the medium-run. Above all, there is still (as of this writing) very little clarity on where Covid19 is heading, what sorts of vaccine treatments might be available, and what the global recovery trajectory might be. It is in essence "all up in the air." The assumptions made by this paper can be thoroughly disputed, and reality may bear out differently. Nevertheless, applying some economic techniques and logical argumentation may still prove instructive in the study of a new pandemic's destructive economic potential and how value creation for the public might still be conceived in such circumstances. Further research is required on many fronts, above all on the epidemiological side, but even for the case of economists, many questions have yet to be raised about the context and capacity with which developing countries might confront the scourges that befall them, such as Ebola and Corona, and the scourges that might yet befall them.

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[73] See UBI and GND in Chohan 2019c and 2019d respectively

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