



# The impact of COVID-19 pandemic on potential income and employment in India

**Respond. Reboot. Recover.**



December 2020

[home.kpmg/in](https://home.kpmg/in)



# Table of contents

1. Executive summary	4
2. Current state of Indian economy	14
2.1 COVID-19 impedes the growth of Indian economy	14
2.2 A recovery is in progress	16
2.3 A shift of equilibrium in the economy	18
3. Objective and methodology	22
4. Sector-wise impacts on final demand components	23
4.1 Sector-wise impacts on consumption and investment	23
4.2 Sector-wise impacts on exports and imports	25
5. A summary of findings	27
6. Key inferences	40
7. Policy recommendations	44
8. Conclusion and limitations	55
9. Appendix	56
10. Reference	62



# 1. Executive summary

## Background

COVID-19 is menacing the global economy and has had a huge destructive impact on both demand as well as supply forces globally. The spread of COVID-19 in India, coupled with a series of lockdowns has slowed down the economy through reduced consumption, production, investment etc. Both global and Indian economy are likely to move from a high output and high employment equilibrium to a low output and low employment equilibrium. Various international organizations and agencies have forecasted a negative growth for India and have revised the projections further, due to the extended lockdowns and the performance of the Indian economy in Q1 FY2021. IMF and World Bank have projected a contraction in India's real GDP of about 10.3 per cent<sup>1</sup> and 9.6 per cent<sup>2</sup> respectively over FY2020.

The government of India has announced an economic stimulus package of INR 20.9 trillion to push the economy through significant fiscal and monetary measures<sup>3</sup>. The net impact on output, employment and growth trajectory of India would depend on three main factors-a) extent of morbidity and mortality; b) duration of external and internal restrictions; c) actual size and efficacy of fiscal and monetary policies introduced by the Indian government. Accordingly, the recovery post-lockdown can either be V-shaped, U-shaped or L-shaped depending upon the time taken by the economy for a gradual upturn from the existing situation.

## Methodology

To evaluate the impact of COVID-19 on India's Gross Value Added (GVA) and employment, an analytical framework based on a demand-driven Input- Output model has been developed. The overall impact of slowdown has been computed by analyzing the impact of negative shocks on major components of final demand (consumption, investment, government expenditure, net exports) for different sectors of the economy under different recovery scenarios. The economy level shocks (as derived from the sector-specific shocks) on consumption, investment, at the economy-wide level for each scenario are in Table 1.

In our model, different negative shocks and recoveries are assumed for different sectors with respect to their final demand components. Higher negative shocks are assumed for sectors such as aviation, hotel and restaurants etc. that are most severely affected by COVID-19, while mild shocks are assumed for essential service sectors like Agriculture.

## Key results

Using a demand driven Input-Output model of the Indian economy, we find that the economy is expected to contract in the range of 1.1 per cent to 13.6 per cent over FY 20 under different (V, U and L) recovery scenarios assumed for the post-lockdown period. Table 2 presents the projected GVA growth rate of economy over FY 20.

**Table 1: Economy-level shocks on each demand component**

% change over baseline	V recovery	U recovery	L recovery	Baseline FY21 values (INR Trillion)
Consumption	-7.3%	-11.0%	-14.9%	135
Investment	-16.7%	-23.3%	-30.1%	61
Government expenditure	8.1%	10.2%	13.0%	26
Exports	-11.0%	-15.2%	-19.5%	42
Imports	-17.1%	-23.0%	-29.1%	48

Source: KPMG in India's analysis 2020

1. 'Countries/IND' section, IMF website, Accessed in October 2020  
 2. World Bank projects India's GDP to contract 9.6% in FY21, Mint, October 8, 2020

3. Atmanirbhar Bharat: Break-up of Rs 20 lakh crore package announced in five tranches by FM Sitharaman, Financial Express, May 17, 2020



**Table 2: Projected growth rates of economy over FY20 under various scenarios**

Scenarios	V-shaped recovery	U-shaped recovery	L-shaped recovery	Baseline scenario
Projected growth rate in FY21 over FY 20 (%)	-1.1%	-7.2%	-13.6%	9.8%

Source: KPMG in India's analysis 2020

A snapshot of the reduction in GVA and employment growth in the three scenarios, over the baseline (no-COVID-19 scenario) is presented below:

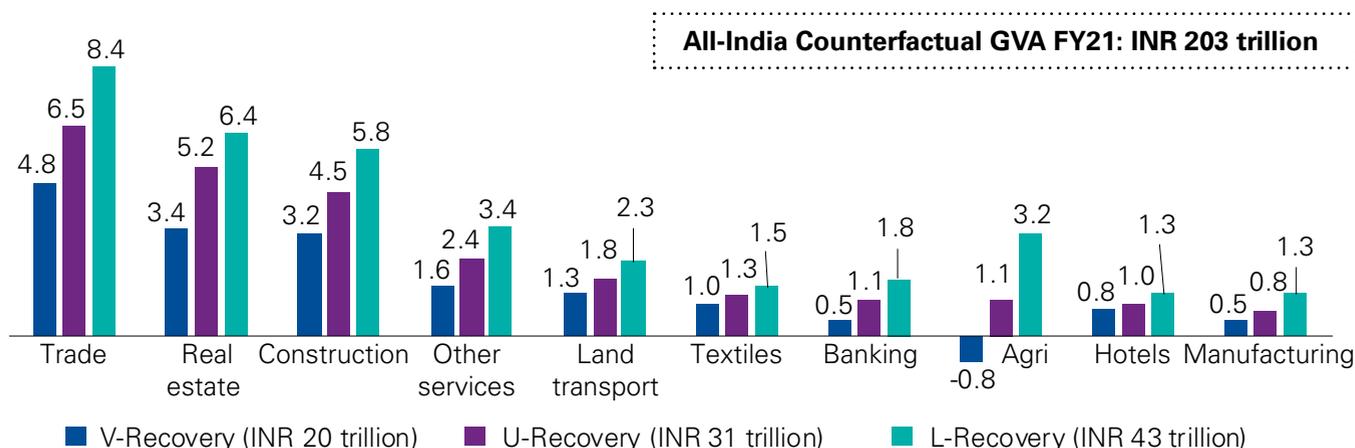
**Table 3: Absolute and percentage reduction in GVA and employment over baseline scenario**

Absolute and % reduction over baseline scenario	V-shaped recovery	U-shaped recovery	L-shaped recovery	Baseline FY21 values (INR Trillion)
GVA (in INR Trillion)	20.1 (9.9%)	31.4 (15.5%)	43.3 (21.3%)	203
Employment (in million)	61.3 (12.4%)	107.0 (21.7%)	156.5 (31.7%)	493

Source: KPMG in India's analysis 2020

There are significant inter-sectoral differences in the impacts. The top 10 sectors in terms of estimated absolute fall in GVA and employment are presented in the figures below.

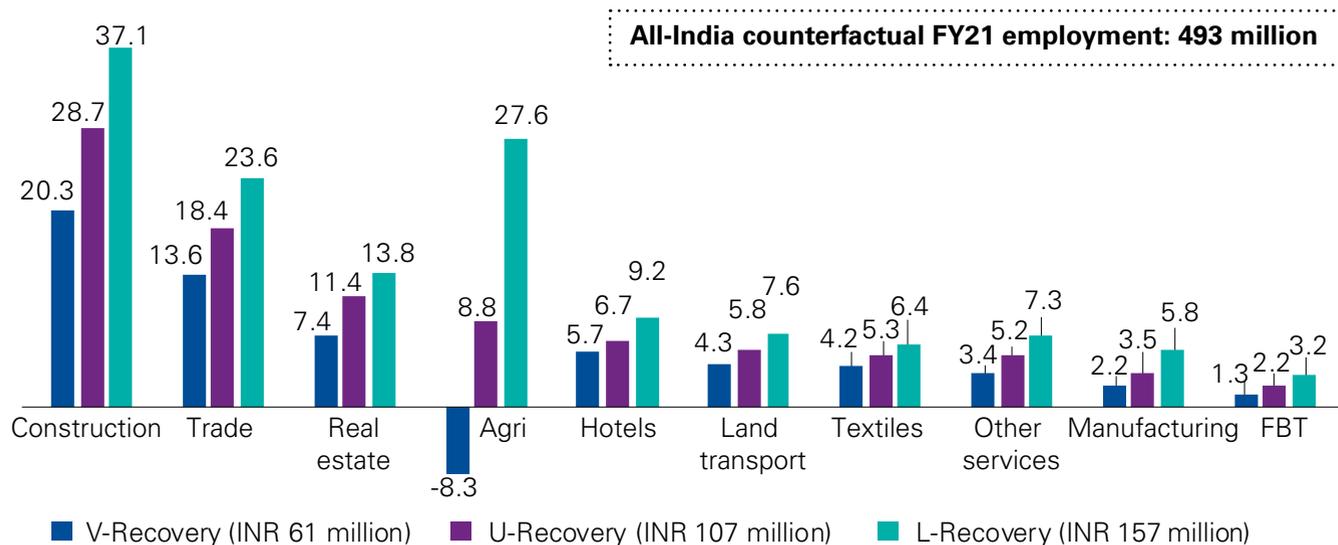
**Figure 1: Top 10 sectors (as per U-recovery) with highest estimated fall in GVA (INR trillion) against counterfactual FY21 values**



Source: KPMG in India's analysis 2020



**Figure 2: Top 10 sectors (as per U-recovery) with highest estimated fall in employment (in million) against counterfactual FY21 values**

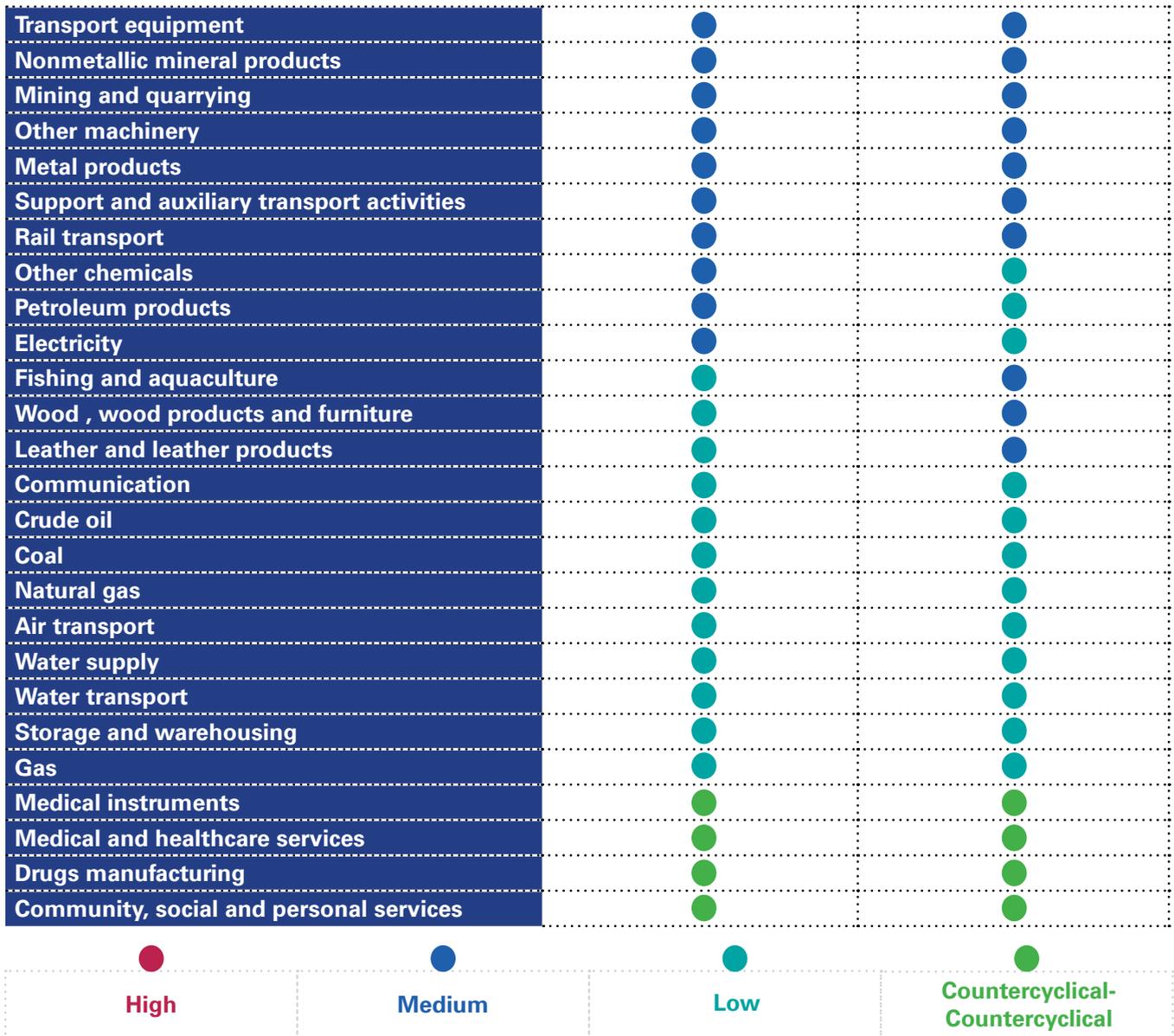


Source: KPMG in India's analysis 2020

With respect to each of the variables of GVA and employment, all the sectors can be categorized into 'high impact', 'medium impact', 'low impact', and 'countercyclical' sectors. This is shown in the figure below. Subsequently eight categories can be formed to denote estimated absolute impact of GVA and employment simultaneously as follows: 'high-high', 'high-medium', 'medium-high', 'medium-medium', 'medium-low', 'low-medium', 'low-low', and 'countercyclical-countercyclical'.

**Table 4: Categorisation of sectors based on impact on all-India GVA and employment**

Sector	Impact on All-India GVA	Impact on All-India employment
Trade	●	●
Real estate	●	●
Construction	●	●
Other services	●	●
Land transport	●	●
Textiles and readymade garments	●	●
Agriculture	●	●
Hotels and restaurants	●	●
Public administration	●	●
Banking and financial services	●	●
Other manufacturing	●	●
Food, beverages and tobacco	●	●



Source: KPMG in India's analysis 2020

Different factors are important for making relative contribution higher/lower for these sectors. In the current model, the contribution of a given sector to the all India GVA and employment fall will depend on the four key factors: -

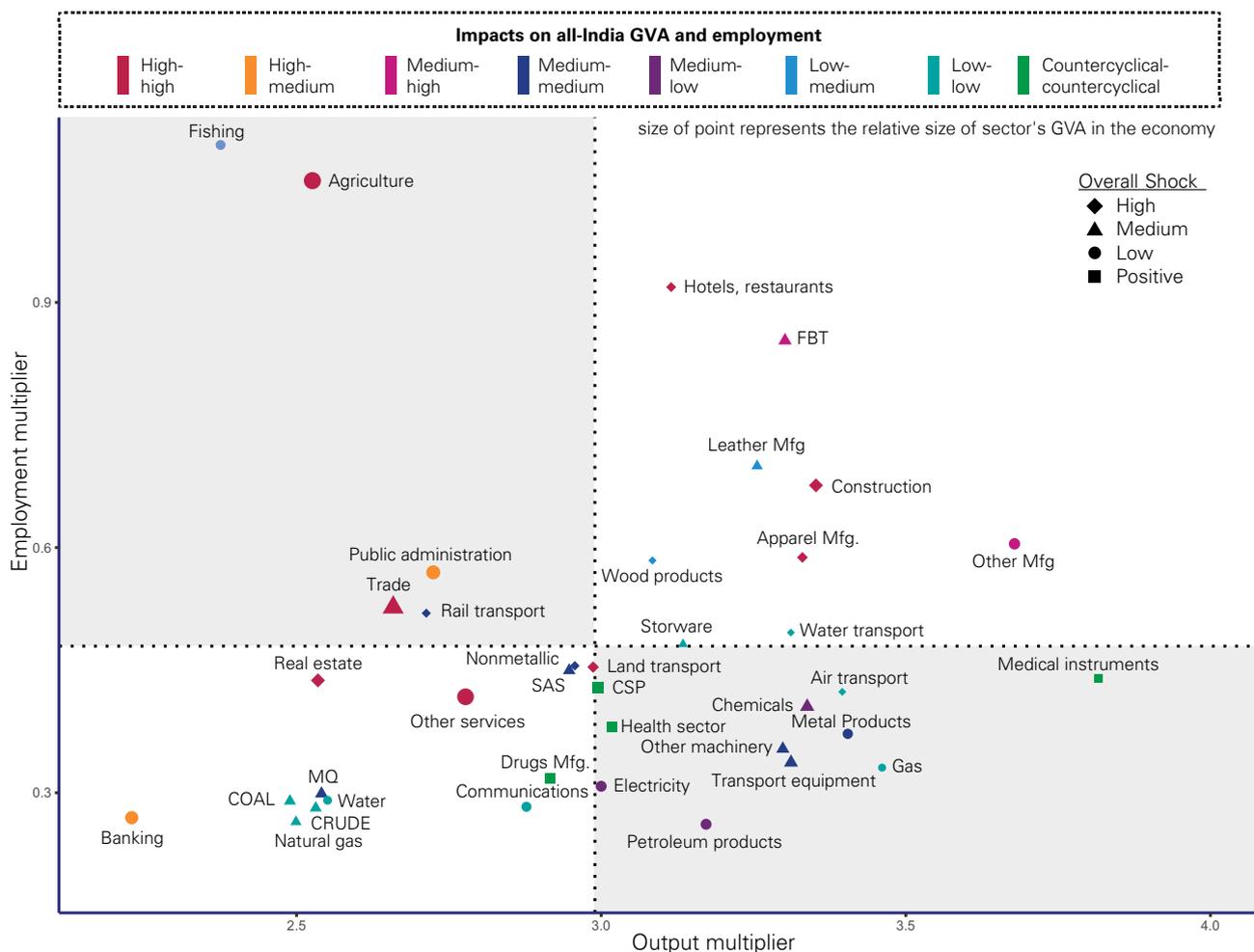
- Backward linkages (output multipliers) and forward inter-industry linkages
- Employment multipliers
- The size of the sector as indicated by the share of a given sector in all- India's GVA, employment and key final demand components (consumption, investment, exports and imports).
- The level of demand and supply disruptions in that sector due to COVID-19.



## A four-quadrant graph below delineates the relative position of all 38 sectors with respect to the above identified four factors.

First, all sectors are grouped based on two factors-output and employment multipliers. The output multipliers are represented by the X axis and employment multipliers are represented by the Y axis. The dotted lines which divide the graph in to four quadrants, represent the average output and employment multipliers. Both these multipliers can act as guiding tools along with the other factors, for identifying the sectors that could help revive the economy and enable speedy post- COVID-19 recovery. The color of the points in the graph corresponds to eight different groups listed above for the estimated high/medium/low impact on all-India GVA fall and employment fall. The size of the point represents the size of the sector in the economy (share in the GVA), and the various shapes indicate the level of demand and supply disruptions in the sector.

**Figure 3: Factors determining sector-wise contributions to impact on all-India GVA and employment**



Source: KPMG in India's analysis 2020

Note: The suffix 'Mfg' refers to manufacturing FBT refers to Food, Beverages and Tobacco industry; CSP refers to community, social, and personal services; MQ refers to Mining and Quarrying; SAS refers to support and auxiliary services for the transport sector; Storware refers to storage and warehousing



For example, all red colored points represent sectors that are expected to have high contribution to fall in all-India GVA and employment, are scattered across the quadrants indicating that different factors are driving the overall contribution by these sectors. Some of these are large sectors in terms of their GVA, while some are medium-sized sectors. Large sectors include wholesale and retail trade, real estate, construction, agriculture and other services, while the medium-sized sectors that are estimated to contribute very significantly to the decline in GVA and employment are sectors such as land transport, apparel manufacturing and hotels and restaurants. For some sectors such as construction, hotels and restaurants and apparel manufacturing, output multiplier/backward linkages play a bigger role than the forward linkages implying that they stimulate other sectors. For other sectors such as agriculture, wholesale and retail trade and other services forward linkages are quite significant indicating that they are stimulated by other sectors.





All light-green colored points represent sectors that are estimated to have a low contribution to the fall in all-India GVA and employment are mostly concentrated in quadrant 3 and 4. GVA and employment shares of these sectors in the national GVA and employment are low. Most of these sectors have low shares in the overall final consumption or investment as they are primarily used as an intermediate input by other sectors of the economy. For example, in this category, communications sector accounts for the highest share of about 3.2 per cent of private final consumption expenditure in the economy, while the remaining 8 sectors account for a total of 1.6 per cent consumption expenditure (Figure 17). This category includes many ENR sectors such as natural gas, coal and crude oil and essential sectors such as water supply which have relatively lesser multiplier impacts on both the output and the employment of the economy despite being key enablers of growth. Air transport, despite being severely hit, is relatively smaller in its estimated contribution to all-India GVA and employment fall.

### Policy recommendations

COVID-19 is a global pandemic that has led to a public health crisis with adverse economic consequences. As the disease outbreak is not likely to disappear in the immediate near future, proactive policy actions are required to not only save lives but also protect the economy

Using the estimated average all-India income multiplier of 1.5, we can get closer to V-shaped scenario by increasing final demand by 7.4 trillion in the U-shaped scenario and 15.1 trillion in the L-shaped scenario. We recommend this required increase in final demand to be met 50 per cent by an increase in the consumption expenditure by way of direct benefits and health related expenditures (over and above 3.1 trillion announced in the economic stimulus) and 50 per cent to be met by increase in the investment (over and above 1.58 trillion announced in the economic stimulus) in the health and critical infrastructure sectors.





2019

2020

2021



## Achieving V-shaped recovery by increasing final demand





## Sector-specific triggers to achieve V-recovery

	Sectors	Category	Consumption	Investment	Exports	Indicative impact of INR 1 trillion increase in final demand on*		
						Output of economy (INR trillion)	Employment of economy (million-person years)	
Prioritised focus	Healthcare	Medical instruments	Countercyclical	✓	✓	✓	3.82	4.40
		Medical and health	Countercyclical	✓	✓		3.02	3.80
		Drugs manufacturing	Countercyclical	✓	✓	✓	2.92	3.18
	Agriculture	Agri	High-high	✓	✓	✓	2.53	10.49
	Construction	Construction	High-high	✓	✓		3.35	6.76
	Other sectors	Trade	High-high	✓			2.66	5.27
		Real estate	High-high	✓			2.54	4.37
		Other services	High-high	✓	✓	✓	2.78	4.17
		Land transport	High-high	✓	✓		2.99	4.54
		Apparel manufacturing	High-high	✓	✓	✓	3.33	5.88
Banking		High-medium	✓			2.23	2.69	
Hotels, restaurants		High-high	✓			3.11	9.19	
Other manufacturing	Medium-high	✓	✓	✓	3.68	6.05		
FBT	Medium-high			✓	3.30	8.53		

Source: KPMG in India's analysis 2020

Impact of INR 1 trillion increase in consumption or investment on overall economy

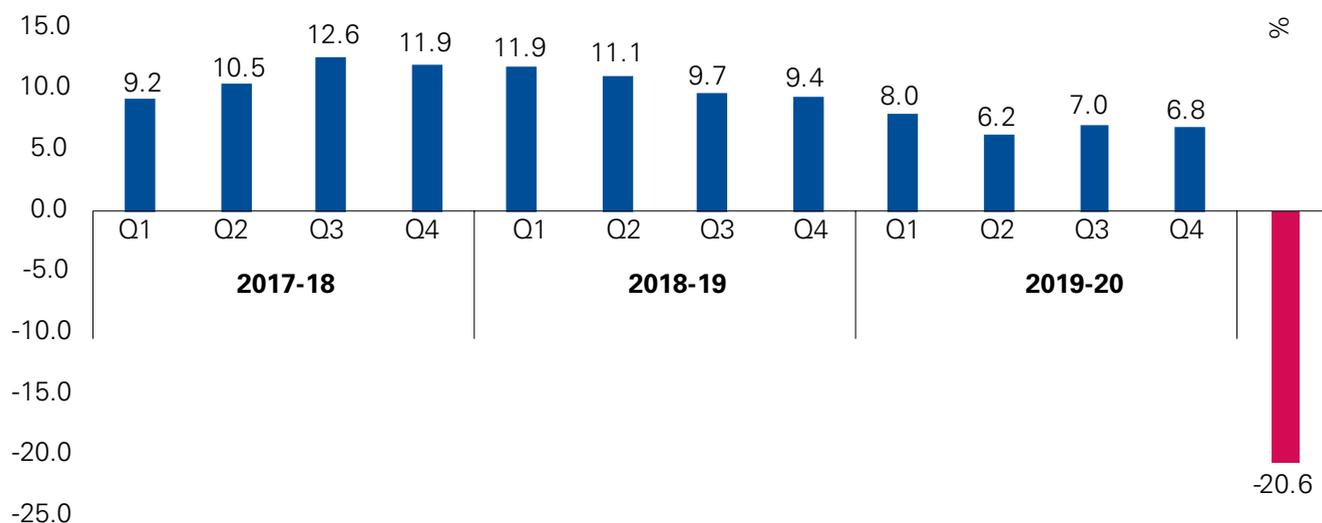


## 2. Current state of Indian economy

### 2.1 COVID'19 impedes the growth of Indian economy

India's GDP was on a slowdown mode even before the coronavirus pandemic hit the country. Precautionary steps needed to contain the spread, inflicted further pressure and India's GDP, as a result, contracted by 22.6 percent at current prices (23.9 percent in constant prices) in 1Q 2020-21.<sup>4</sup> While the process of gradually winding down lockdown restrictions helped economic activity, businesses have not been able to achieve their full capacities due to internal supply chain disruptions and shortage in labour, as well as demand weakness. The growth of government spending provided some support, but that was far outweighed by the contraction of consumption and investment, both constitute a large portion of India's GDP

**Figure 4: Quarterly GDP growth (%) at current prices**



Source: Database on Indian Economy, Reserve Bank of India [accessed in October 2020]

Source: Database on Indian Economy, Reserve Bank of India [accessed in Oct 2020], and KPMG in India analysis

4. Press note on estimates of GDP for the first quarter (April - June) 2020-2021, MOSPI Website, August 21, 2020



**Table 5: NAS aggregated sector-wise Q1 growth and counterfactual values**

Sectors (at current prices)	5-year average growth rate for Q1	1Q 2020-21 growth	Counterfactual GVA 1Q 2020-21 (INR trillion)	Actual GVA 2020-21 (INR trillion)	%change over counterfactual GVA
Agriculture, forestry, and fishing	9.1	5.7	7.77	7.52	-3.1
Mining and quarrying	2.4	-41.3	1.07	0.62	-42.7
Manufacturing	8.2	-39.3	7.52	4.22	-43.9
Construction	7.3	-51.4	3.76	1.71	-54.7
Electricity, gas, water supply, and other utility services	12.6	-5.3	1.40	1.18	-15.9
Trade, hotels, transport, and communication, and services related to broadcasting	9.7	-47.4	8.85	4.25	-52.0
Financial, real estate & professional services	11.2	-4.3	11.76	10.11	-14.0
Public administration, defence and other services	13.8	-5.0	7.26	6.06	-16.6

Agriculture was the only sector that registered growth in 1Q 2020- 21, as the consumption of essential items had largely been unaffected by the lockdown

Economic activity showed signs of improvement once the lockdown restrictions were eased, and hence it is reasonable to expect the numbers for the subsequent quarter to indicate better performance.



## 2.2 A recovery is in progress

A great deal of key economic indicators point to a recovery from a sharp contraction noticed in 1Q 2020-21. **This recovery could stay alive with more activities having been opened up, but its pace is likely to be uneven.**

**Table 6: Key indicators of the Indian economy**

Indicators	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
<b>Consumer economy</b>						
<b>Discretionary</b>						
Refinitiv-Ipsos PCSI (percentage points)	NA	-8.9	0.4	2.6	-1.6	1.1
Passenger vehicle - sales	NA	NA	-49.59	-3.86	14.16	26.45
Two wheeler - sales	NA	NA	-38.56	-15.24	3.00	11.64
IIP - Durable goods	-57.6	-33.9	-16.6			
<b>Non-discretionary</b>						
IIP - Non-durables	-48.6	-11.1	14			
<b>Spending power</b>						
Unemployment rate	23.5	23.5	11.0	7.4	8.4	6.7
PCSI employment confidence index (percentage points)	NA	-5.3	-3.4	0.7	-4.5	1.4
PCSI Current personal financial conditions (percentage points)	NA	-11.7	1.2	2.2	-0.4	0.4
<b>Investment</b>						
IIP - Capital goods	-92.6	-65.2	-36.9			
PCSI Investment climate (percentage points)	NA	-12.9	2.1	2.1	0.2	1.4
<b>Trade</b>						
Merchandise exports, %	-60.3	-36.0	-12.4	-10.2	-12.7	6
Merchandise imports, %	-58.7	-51.0	-47.6	-28.4	-26.0	-19.6
Non-oil imports	-58.5	-43.1	44.7	-27.3	-20.0	-14.4
Trade balance, USD Bn	-6.8	-3.2	0.8	-4.8	-6.8	-2.7
Services exports	-8.9	-10.2	-8.4	-10.8	-9.9	
Inter-state E-way bill, million	2.4	8.4	16.1	18.5	19.0	22.8
Intra-state E-way bill, million	6.2	17.1	27.4	29.8	30.4	34.6
<b>Credit flow</b>						
Gross non-food credit, %	7.3	6.8	6.7	6.7	6.0	5.8
Credit offtake - Agriculture, INR Bn	3.9	3.5	2.4	5.4	4.9	5.9
Credit offtake - Industry, INR Bn	1.7	1.7	2.2	0.8	0.5	0.0
Credit offtake - Services, INR Bn	11.2	11.2	10.7	10.1	8.6	9.1
Personal loans, INR Bn	12.1	10.6	10.5	11.2	10.6	9.2



Industry						
Manufacturing PMI	27.4	30.8	47.2	46.0	52.0	56.8
Services PMI	5.4	12.6	33.7	34.2	41.8	49.8
Peak hour demand met	-24.9	-13.2	-7.3	-3.1	-4.2	2.5
Consumption - petroleum products (MMT)	9.9	14.6	16.2	15.7	14.4	15.5
Freight loading	-35.3	-21.3	-7.7	-4.6	3.9	15.5
Eight core sector, %						
Overall growth	-37.9	-22.0	-12.9	-9.6	-8.5	-0.8
Growth of coal	-15.5	-14.0	-15.5	-5.7	3.6	21.2
Growth of crude oil	-6.4	-7.1	-6.0	-4.9	-6.3	-6.0
Growth of natural gas	-19.9	-16.8	-12.0	-10.2	-9.5	-10.6
Growth of petroleum refinery	-24.2	-21.3	-8.9	-13.9	-19.1	-9.5
Growth of fertilizers	-4.5	7.5	4.2	6.9	7.3	-0.3
Growth of steel	-82.8	-43.1	-25.4	-16.4	-6.3	0.9
Growth of cement	-85.2	-21.4	-6.8	-13.5	-14.6	-3.5
Growth of electricity	-22.9	-14.8	-10.0	-2.3	-2.7	3.7

Source: Database on Indian Economy, RBI [accessed in October 2020] and other sources including MoSPI, Centre for Monitoring Indian Economy (CMIE), Ministry of Commerce and Industry, GST System Statistics, PMI press releases, IHS Markit, Petroleum Planning and Analysis Cell (PPAC), Power System Operation Corporation Limited (POSOCO), Statistics and Economics Directorate, Indian Railways

The relaxation of lockdown measures did help the economy, but the recovery path is currently clouded by the continuous spread of the pandemic and the risk of a second-wave. Thus, it is imperative to subject the potential recovery to various scenarios and understand the resultant impact on key industries, which is the main objective of this report.



## 2.3 A shift of equilibrium in the economy

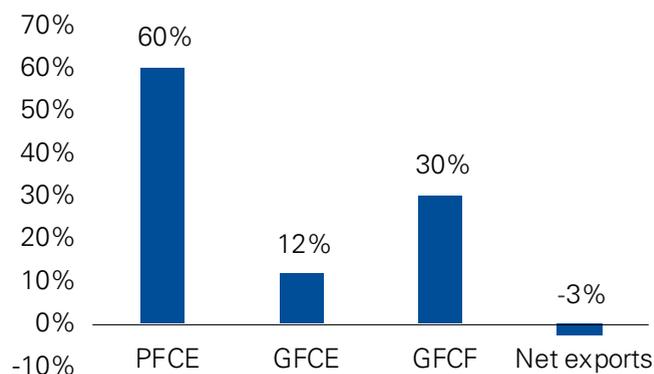
COVID-19 has had a huge destructive impact on both demand as well as supply forces globally. The spread of COVID-19 in India, coupled with a series of lockdowns has already slowed down the economy through reduced consumption, production, investment etc. Both global and the Indian economy are likely to move from a high output and employment equilibrium to a low output and employment equilibrium. The overall impact on the economy happens through the demand and supply side channels.

On demand side, private consumption and gross capital formation contribute 90 per cent to GDP (Figure 5) and both are likely to be negatively affected by the COVID-19 outbreak resulting in an overall economic slowdown.

Both exports and imports are likely to fall due to COVID-19. India exported 18.7 per cent of its GDP in FY20 (in current prices) while imports accounted for 21.4 per cent of total supply, making India a net importer<sup>5</sup>. Exports have been declining for the last six months and since May 2020, the month-wise percentage fall in imports with respect to previous year, has been greater than that of exports (refer to Table 6)

leaving a trade deficit in August of USD 6.8 billion

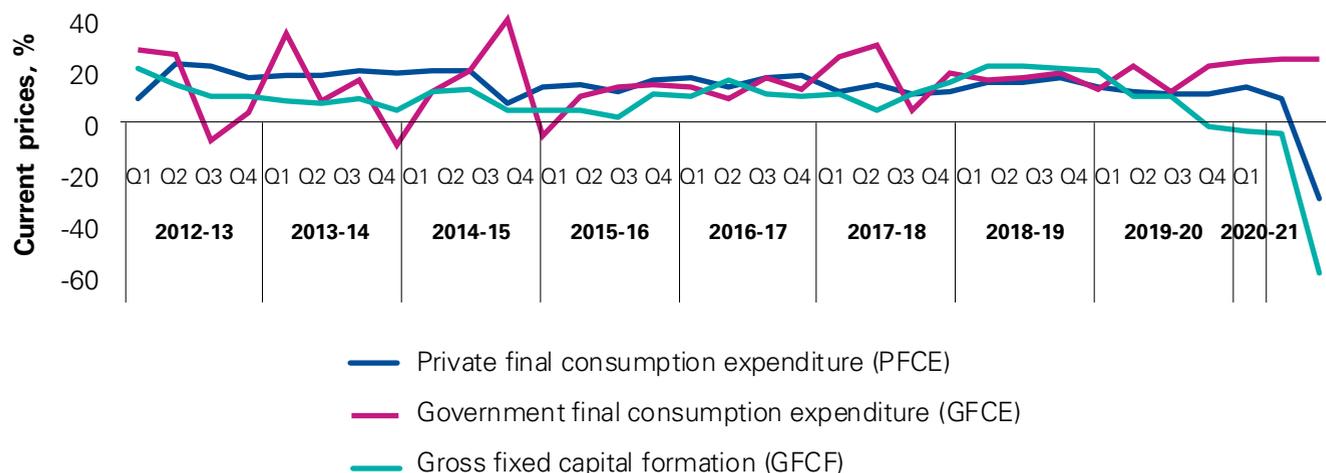
**Figure 5: Composition of GDP (2019-20)**



Source: Website of Ministry of Statistics and Programme Implementation (MOSPI), [accessed in October 2020]

The growth of government spending provided some support, but that was far outweighed by the contraction of consumption and investment.

**Figure 6: Quarterly growth rates of PFCE, GFCE, and GFCF over the years**



Source: Database on Indian Economy, Reserve Bank of India [accessed in October 2020]

5. National Accounts Statistics 2019, MOSPU website, Accessed in October 2020



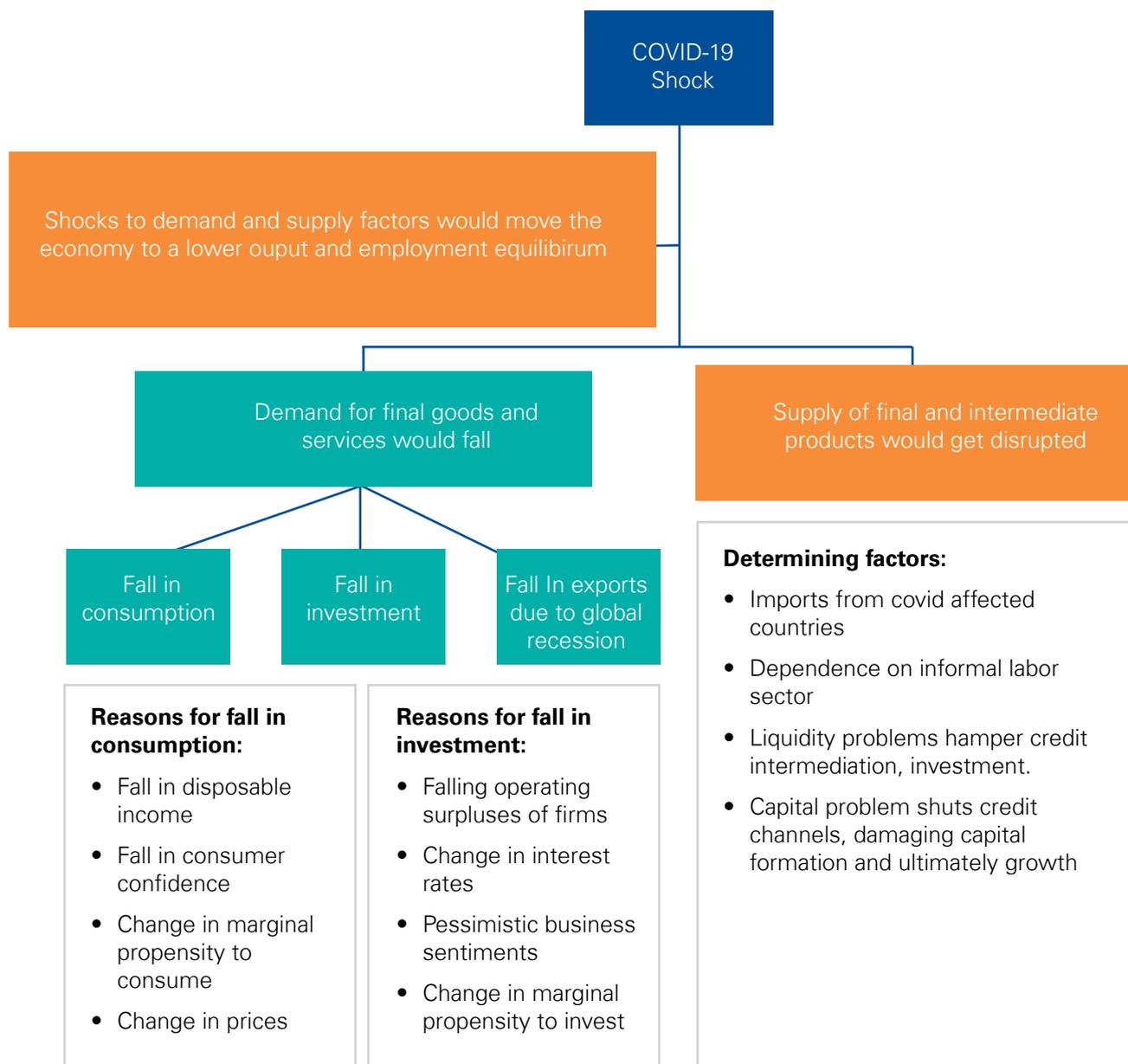
The extent to which COVID-19 will disrupt domestic and global supply chains will be an important factor in determining its impact on the Indian economy. Some key factors from the supply side include labour unavailability, fall in liquidity, capital formation in the market, and, changes in cost of operations resulting from an increase in prices of material inputs, cost of transportation etc. due to input shortages.

The reduction in total output and employment, change in prices post- COVID-19 and overall growth trajectory of India would depend on the extent of morbidity and mortality, duration of external and internal restrictions, and actual size and efficacy of fiscal and monetary policies introduced by the Indian government.





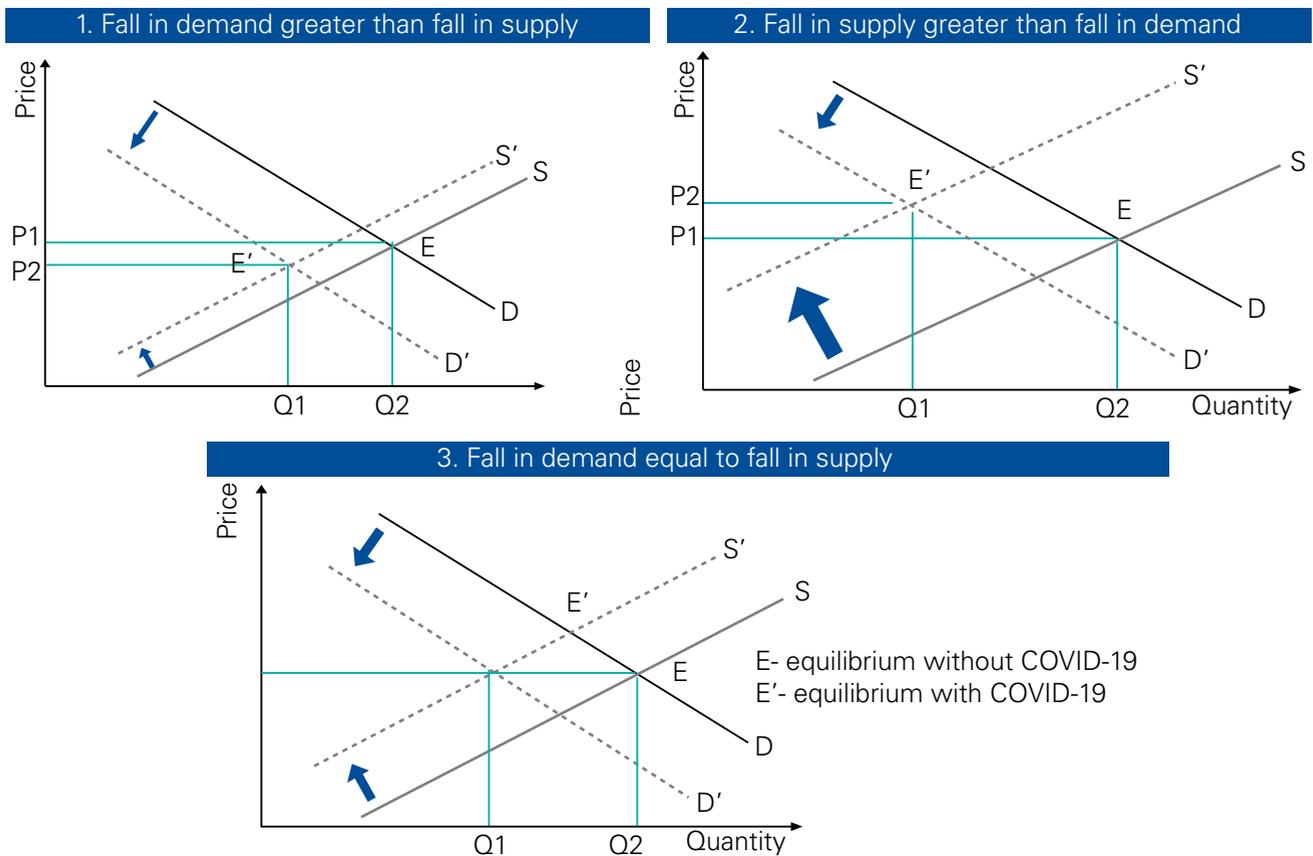
**Figure 7: Underlying mechanism determining the impact of COVID-19**



Linear demand and supply curves are assumed in our model. For a given fall in demand, supply may fall proportionally to demand, or fall greater than demand or fall less than supply (see chart). In reality, demand and supply curves will be highly non-linear due to factors such as social distancing measures, belief-based elements of the shocks and disruption of supply chains but the key point is that the interaction between demand and supply curves will determine net quantitative and qualitative impact on the economy.



**Figure 8: Shifts in demand and supply curves**



Source: KPMG in India's analysis 2020

Given all these factors and scenarios, the recovery post-lockdown can either be V-shaped, U-shaped or L-shaped depending upon the time taken by the economy for a gradual upturn from the existing situation.





## 3. Objective and methodology

### Objective:

- To estimate the impact of COVID-19 on all India GVA and employment for the FY 21 under three different recovery scenarios- V-recovery, U- recovery or Lrecovery
- To formulate policy recommendations for mitigating the impact of COVID-19 on Indian economy based on the key learnings of the analysis.

### Methodology

A three-step approach to estimate the impact of COVID-19 on India Economy in FY 20-21

- Multiplier analysis using I/O table of 38 sectors**
- Development of a demand driven impact assessment model**
- Simulation of economic output under different scenarios (shocks for consumption, investment, trade, etc. may be given in a tabular format)**

Firstly, for undertaking inter-industry analysis, the 'Input-Output' (I/O) table for India for FY 2015-16 with 38 distinct sectors of the economy is constructed. Using the I/O Table, output and employment multipliers are computed, which account for the total effect of external shocks on the entire economy through forward and backward linkages.

Secondly, different negative shocks and recoveries are assumed in our model for different sectors. Higher negative shocks are assumed for sectors such as aviation, hotel and restaurants, etc. that are most severely affected by -19, while mild shocks are assumed for essential service sectors like agriculture. For the sector-wise shocks the data pertaining to exports, imports, and Index of Industrial Production (IIP) for Q1 2020 and FY2019 were considered (Tables A1 to A3 in the Appendix).

Lastly, using the impact assessment model, three different scenarios assuming V-shaped recovery, U-shaped recovery and staggered recovery over the baseline values for FY20-21 are modelled. These baseline values are obtained for each sector based on their growth rate over last two years from the KLEMS/NAS dataset.

**Table 7: Economy-level percentage shocks on consumption, investment, etc. in all scenarios at current prices**

Change over baseline (in trillion and % decline)	V recovery	U recovery	L recovery	Baseline values - FY21 (INR trillion)
<b>Consumption</b>	-9.8 (-7.3%)	-14.8 (-11.0%)	-20.2 (-14.9%)	135
<b>Investment</b>	-10.3 (-16.7%)	-14.3 (-23.3%)	-18.5 (-30.1%)	61
<b>Government expenditure</b>	2.1 (8.1%)	2.7 (10.2%)	3.4 (13.0%)	26
<b>Exports</b>	-4.6 (-11.0%)	-6.4 (-15.2%)	-8.2 (-19.5%)	42
<b>Imports</b>	-8.2 (-17.1%)	-11.0 (-23.0%)	-13.9 (-29.1%)	48

Source: KPMG in India's analysis 2020

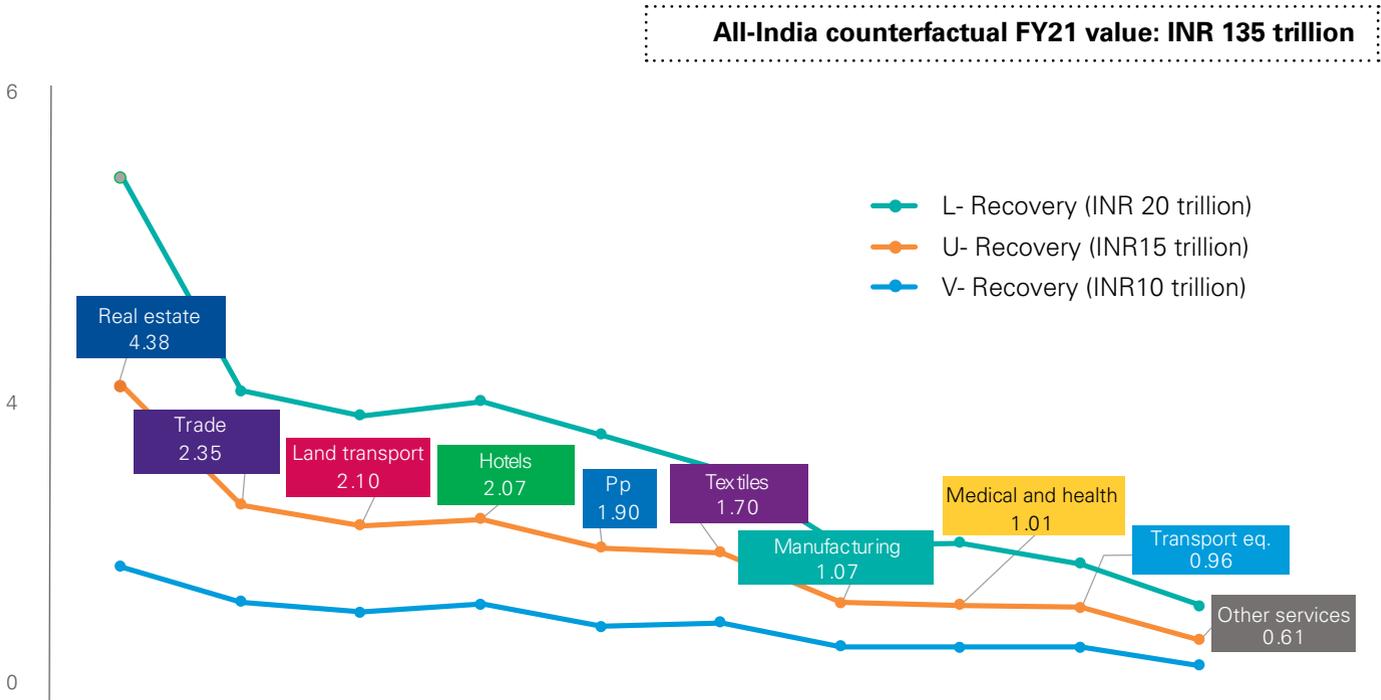
# 4. Sector-wise impacts on final demand components



## 4.1 Sector-wise Impacts on consumption and investment

Sectors such as real estate, wholesale and retail trade, land transport, hotels and restaurants, etc. are expected to be the most impacted in terms of a decline in private final consumption expenditure.

**Figure 9: Top 10 sectors with highest estimated fall in consumption (INR trillion) over counterfactual FY21 values**



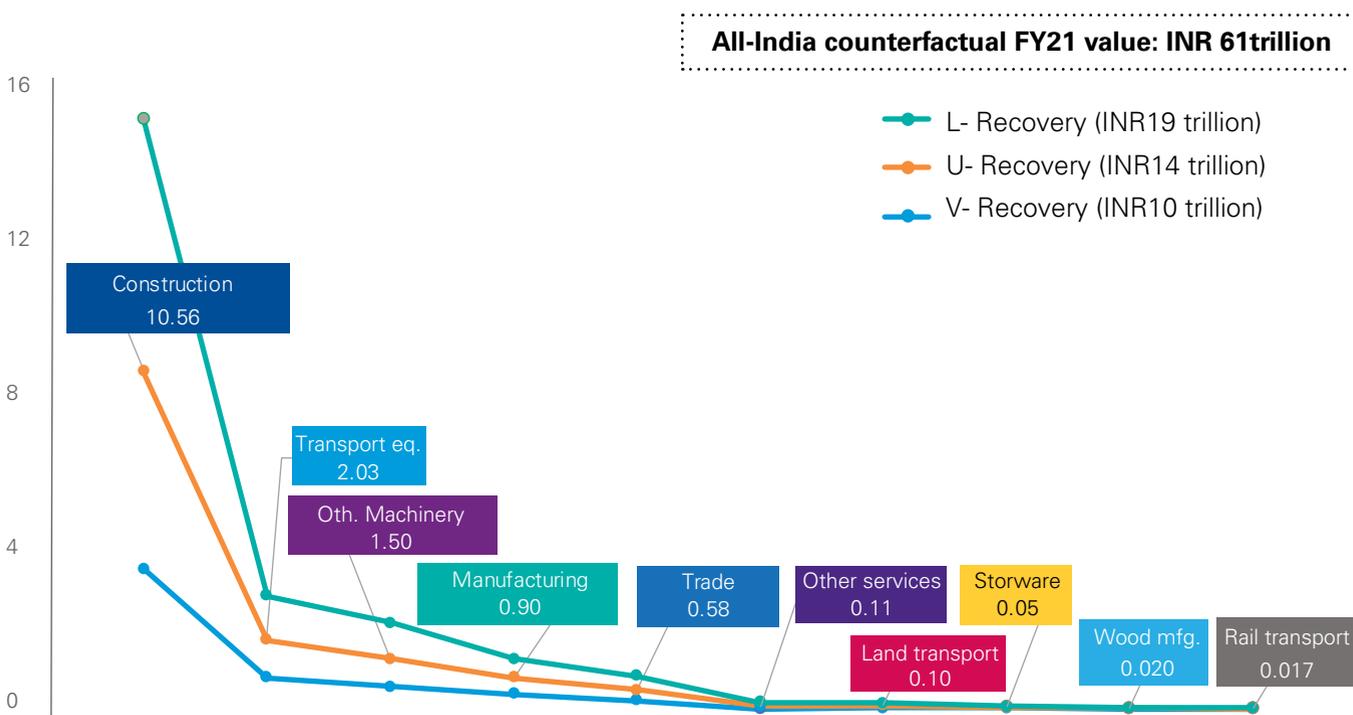
Source: KPMG in India's analysis 2020

Note: Refer to Table A6 in Appendix for complete list of abbreviations used for the sectors



Construction is expected to be the worst hit sector in terms of a fall in investment of INR 10.6 trillion (u-shaped scenario) over the baseline value (Figure 10). It also accounts for around 59 per cent of investment in the entire economy (Figure 17). Investment in Transport equipment, other machinery and other manufacturing are also expected to be highly impacted.

**Figure 10: Top 10 sectors with highest estimated fall in investment (INR trillion) over counterfactual FY21 values**



Source: KPMG in India's analysis 2020

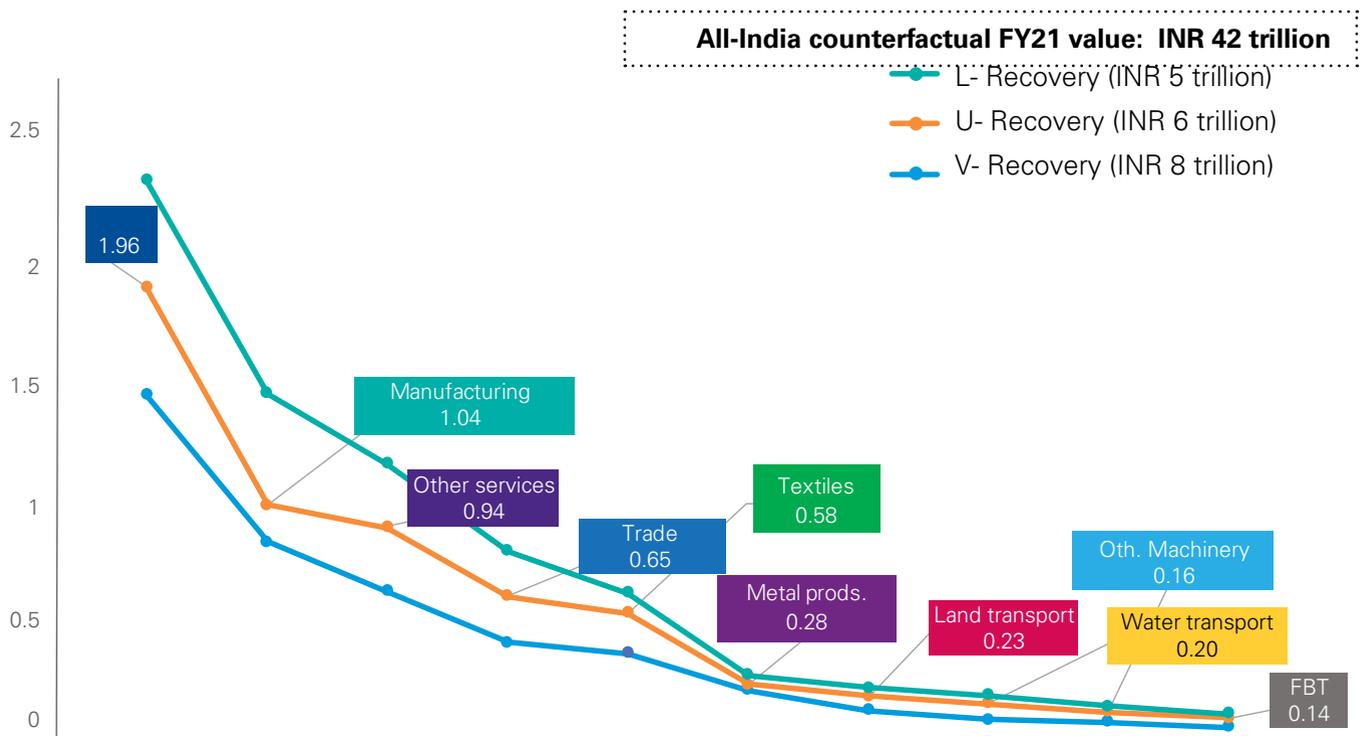
Note: Refer to Table A6 in Appendix for complete list of abbreviations used for the sectors



## 4.2 Sector-wise impacts on exports and imports

Petroleum products sector is expected to see the highest decline in exports (INR 1.96 trillion) followed by sectors such as other manufacturing, other services, and wholesale and retail trade (Figure 11). Exports in most sectors were impacted negatively during the lockdown, while there was a recovery in Agricultural exports which registered a growth in June 2020 (Table A3).

**Figure 11: Top 10 sectors with highest estimated fall in exports (INR trillion) over counterfactual FY21 values**



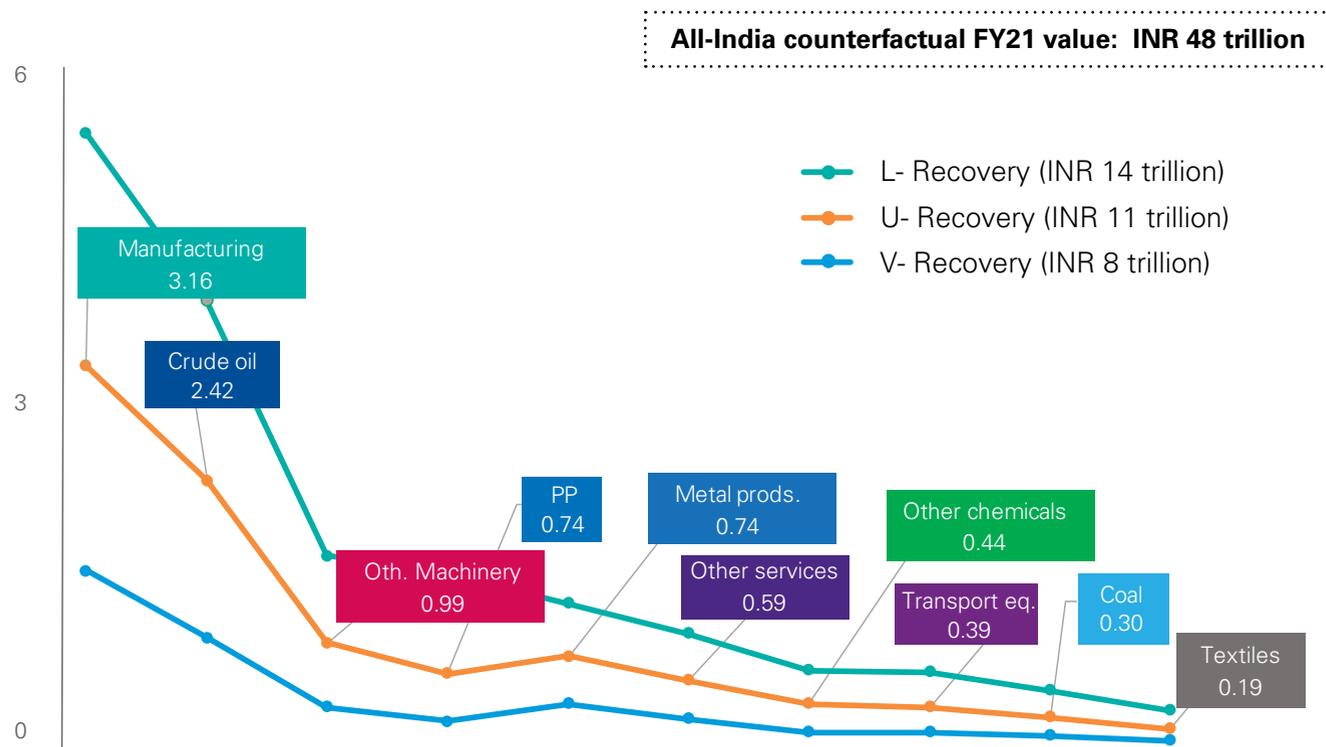
Source: KPMG in India's analysis 2020

Note: Refer to Table A6 in Appendix for complete list of abbreviations used for the sectors



Major importing sectors such as other manufacturing, crude oil, and other machinery are expected to be impacted the most due to the pandemic. These sectors together account for nearly 49 per cent of the imports in the economy (Figure 17).

**Figure 12: Top 10 sectors with highest estimated fall in imports (INR trillion) over counterfactual FY21 values**



Source: KPMG in India's analysis 2020

Note: Refer to Table A6 in Appendix for complete list of abbreviations used for the sectors

## 5. A summary of findings



Our analysis finds that Indian economy is expected to contract in the range of 1.1 per cent to 13.6 per cent in FY21 over FY20 under different scenarios of shocks to consumption, investment, exports etc. triggered by the coronavirus outbreak and the associated lockdowns.

**Table 8: Projected growth rates of economy over FY20 under various scenarios**

Scenarios	V-shaped recovery	U-shaped recovery	L-shaped recovery	Baseline scenario
<b>Projected growth rate in FY21 over FY 20 (%)</b>	-1.1%	-7.2%	-13.6%	9.8%

Source: KPMG in India's analysis 2020

**Table 9: Comparison with baseline FY21 values at current prices**

Scenarios	V-shaped recovery	U-shaped recovery	L-shaped recovery	Baseline values FY21
<b>Absolute fall in GVA (INR Trillion)</b>	20.1	31.4	43.3	203 trillion
<b>% fall in GVA</b>	(9.9%)	(15.5%)	(21.3%)	
<b>Absolute fall in employment</b>	61.3	107.0	156.5	493 million
<b>% fall in employment</b>	(12.4%)	(21.7%)	(31.7%)	

Source: KPMG in India's analysis 2020

**Analysis on GVA:** While the fall in GVA at an economy level is driven by the declining output of all major sectors, some sectors are expected to shrink more, thereby contributing more to this fall at a macro-level. Of such sectors, our analysis suggests that wholesale and retail trade could be the hardest sector hit followed by real estate and construction.

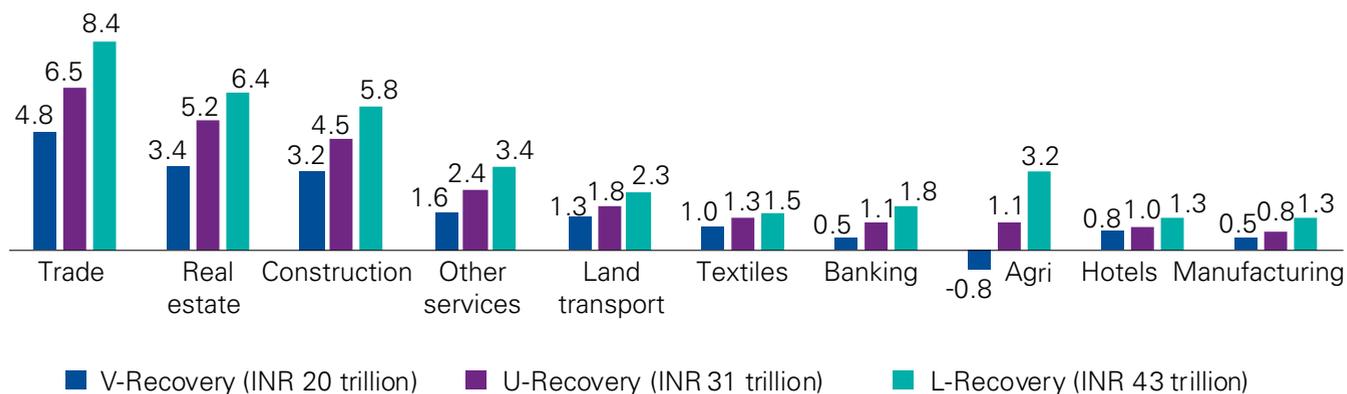
These sectors (trade, real estate, construction, services etc.) largely cater to the “non-essential products/services or were significantly impacted by social distancing and hence, were severely impacted during the lockdown. Even after lockdowns have been lifted, the demand of such sectors is likely to remain subdued due to low economic growth and business sentiments and social distancing measures. Since these sectors also contribute largely to the national GVA, even a small decline in output of these sectors affects the economy significantly.

The decline in GVA of these sectors has been different under the different scenarios as the annual impact of the pandemic could vary depending upon the length of non-essential business closures and the spread of the virus. Table A5 shows the results of U-recovery scenario for 8 sectors aggregated as per National Accounts Statistics.



**Figure 13: Top 10 sectors (as per U-recovery) with highest estimated fall in GVA (INR trillion) against counterfactual FY21 values**

**All-India counterfactual value: INR 203 trillion**



Source: KPMG in India's analysis 2020

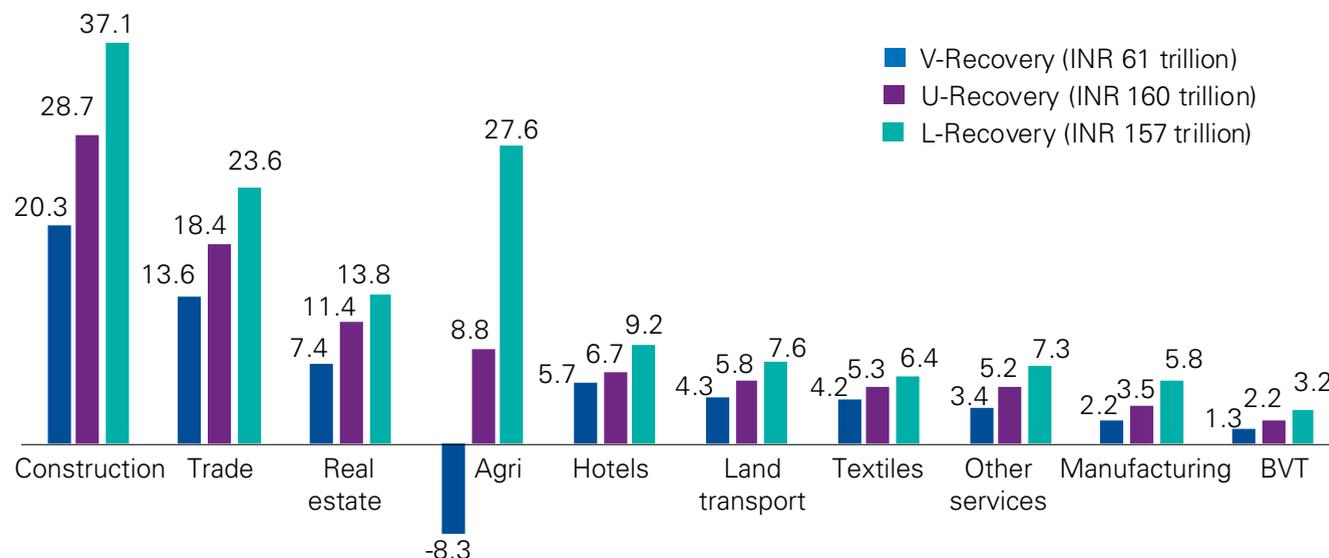
**Analysis on employment:** Coming to employment, the series of lockdowns along with social distancing measures have led to a significant loss of jobs in the economy. Construction, second largest employer in the country (after agriculture) with over 15 per cent of the labour force (Figure 16), is expected to contribute significantly to the national unemployment figures followed by wholesale and retail trade sector, real estate, and hotel and restaurants.

The decline in employment in these sectors is driven by both demand as well as supply factors. In some areas, the reduced economic activity of various sectors coupled with lockdowns reduced labour demand, while in other areas the supply of labour was constrained due to labour migration to villages.



**Figure 14: Top 10 sectors (as per U-recovery) with highest estimated fall in employment (in million) against counterfactual FY21 values**

**All-India counterfactual FY21 employment: 493 million**



Source: KPMG in India's analysis 2020

Other sectors that are estimated to witness job losses include aviation, automobile, tourism, entertainment, etc. Since the percentage of total workforce employed by these sectors is relatively lower, these sectors do not appear in Figure 14 which shows the top sectors with the highest estimated fall in absolute employment.

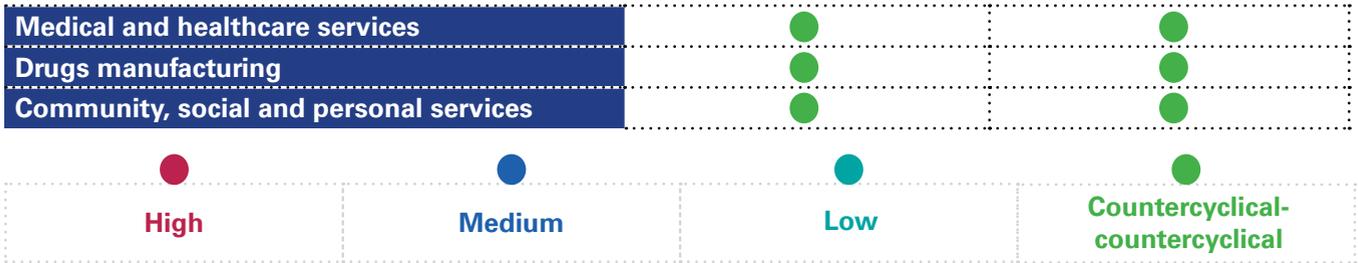
**Categorisation of the sectors basis contribution to fall in GVA and employment:** All 38 sectors are grouped into four categories with respect to the estimated contribution of different sectors to absolute fall in all-India GVA and Employment in the U-shaped Scenario-High (top 10 sectors), medium (next 12 sectors), low (remaining 12 sectors with negative impact on the economy) and counter-cyclical (four sectors which are expected to positively impact the economy):

On one hand, there are eight sectors of the total 38 sectors that are estimated to have high contribution to both GVA fall and employment fall at an all-India Level. These include wholesale and retail trade, real estate, construction, other services, land transport, apparel manufacturing and hotels and restaurants and agriculture. On the other hand, there are nine sectors that are estimated to have relatively lower contributions to both GVA fall and employment fall at an all-India level. These include many essential sectors such as energy and natural resources, gas distribution and water supply.



**Table 10: Categorization of sectors based on impact on all-India GVA and employment**

Sector	Impact on All-India GVA	Impact on All-India employment
Trade	●	●
Real estate	●	●
Construction	●	●
Other services	●	●
Land transport	●	●
Textiles and readymade garments	●	●
Agriculture	●	●
Hotels and restaurants	●	●
Public administration	●	●
Banking and financial services	●	●
Other manufacturing	●	●
Food , beverages and tobacco	●	●
Transport equipment	●	●
Nonmetallic mineral products	●	●
Mining and quarrying	●	●
Other machinery	●	●
Metal products	●	●
Support and auxiliary transport activities	●	●
Rail transport	●	●
Other chemicals	●	●
Petroleum products	●	●
Electricity	●	●
Fishing and aquaculture	●	●
Wood , wood products and furniture	●	●
Leather and leather products	●	●
Communication	●	●
Crude oil	●	●
Coal	●	●
Natural gas	●	●
Air transport	●	●
Water supply	●	●
Water transport	●	●
Storage and warehousing	●	●
Gas	●	●
Medical instruments	●	●



Source: KPMG in India's analysis 2020

Different factors are important for making contribution to GVA and employment fall higher/lower for these sectors. In the current model, the contribution of a given sector to the all India GVA and employment fall will depend on the four key factors: -

- Backward linkages (output multipliers) and forward inter-industry linkages
- Employment multipliers
- The size of the sector as indicated by the share of a given sector in all- India's GVA, employment and key final demand components (consumption, investment, exports and imports)
- The level of demand and supply disruptions in that sector due to COVID-19.

**Backward linkages, forward linkages and employment multipliers:** Output multiplier or backward linkage score of a sector describes how the total output of the economy is expected to change with one additional unit of final demand in a sector. Higher is the output multiplier of a given sector, greater is the impact of the fall in final demand of this sector on the overall GVA of the economy due to backward inter-industry linkages. Similarly, when the final demand of all other sectors in the economy falls by one unit, the output of the given sector falls by forward inter-industry linkage score.

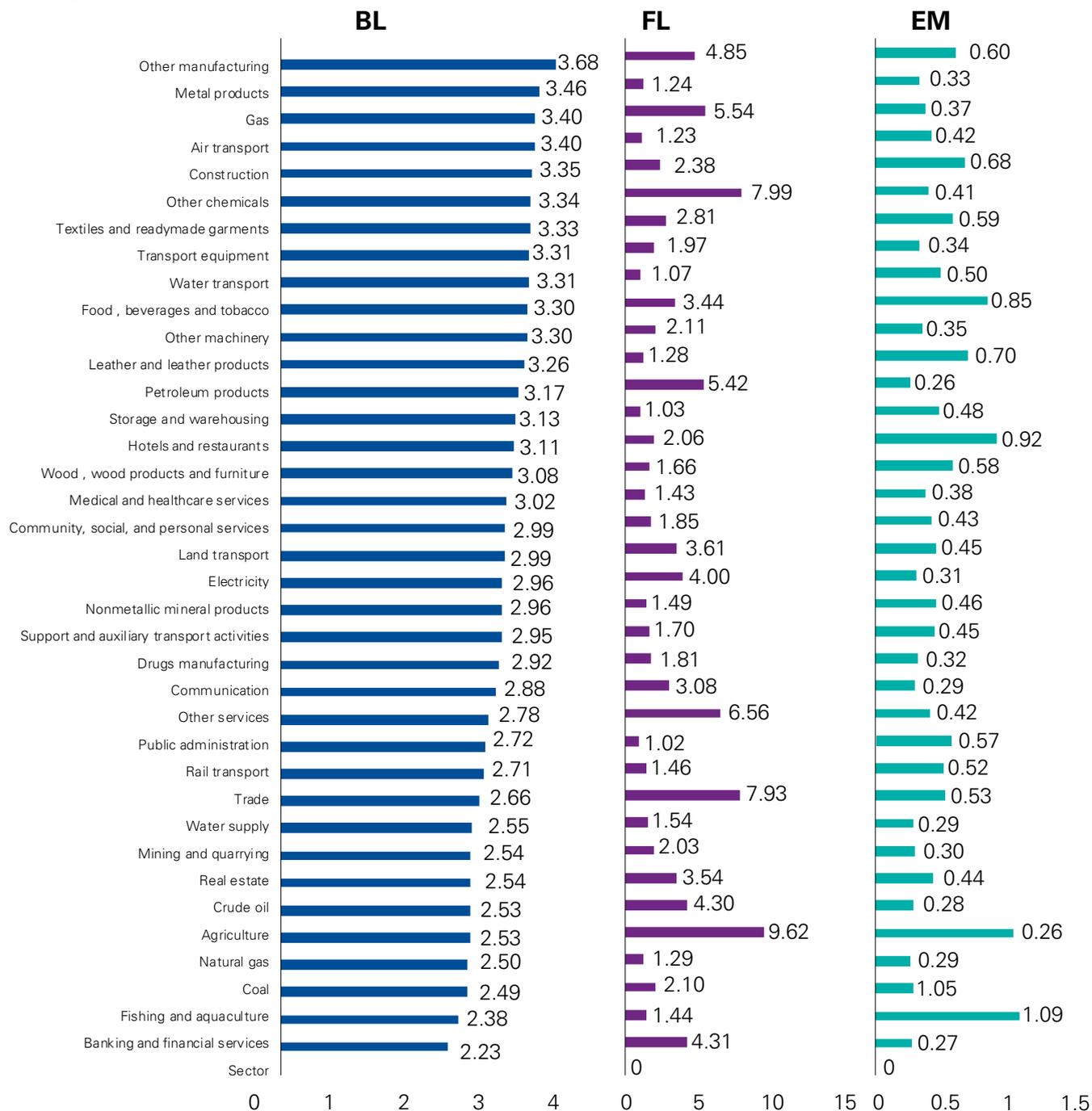
Employment multiplier is the total jobs generated in the economy as a result of one unit increase in the final demand of a given sector. Higher is the employment multiplier, greater is the expected impact of the fall in final demand of this sector on the overall employment of the economy through backward inter-industry linkages. Similarly, when the final demand of all other sectors in the economy falls, the employment of the given sector falls through forward inter-industry linkages.





Below graph depicts backward linkage (BL) scores, forward linkage (FL) scores and employment multipliers (EM) for all 38 sectors

**Figure 15: Sector-wise backward linkages (BL), forward linkages (FL) and employment multiplier (EM)**

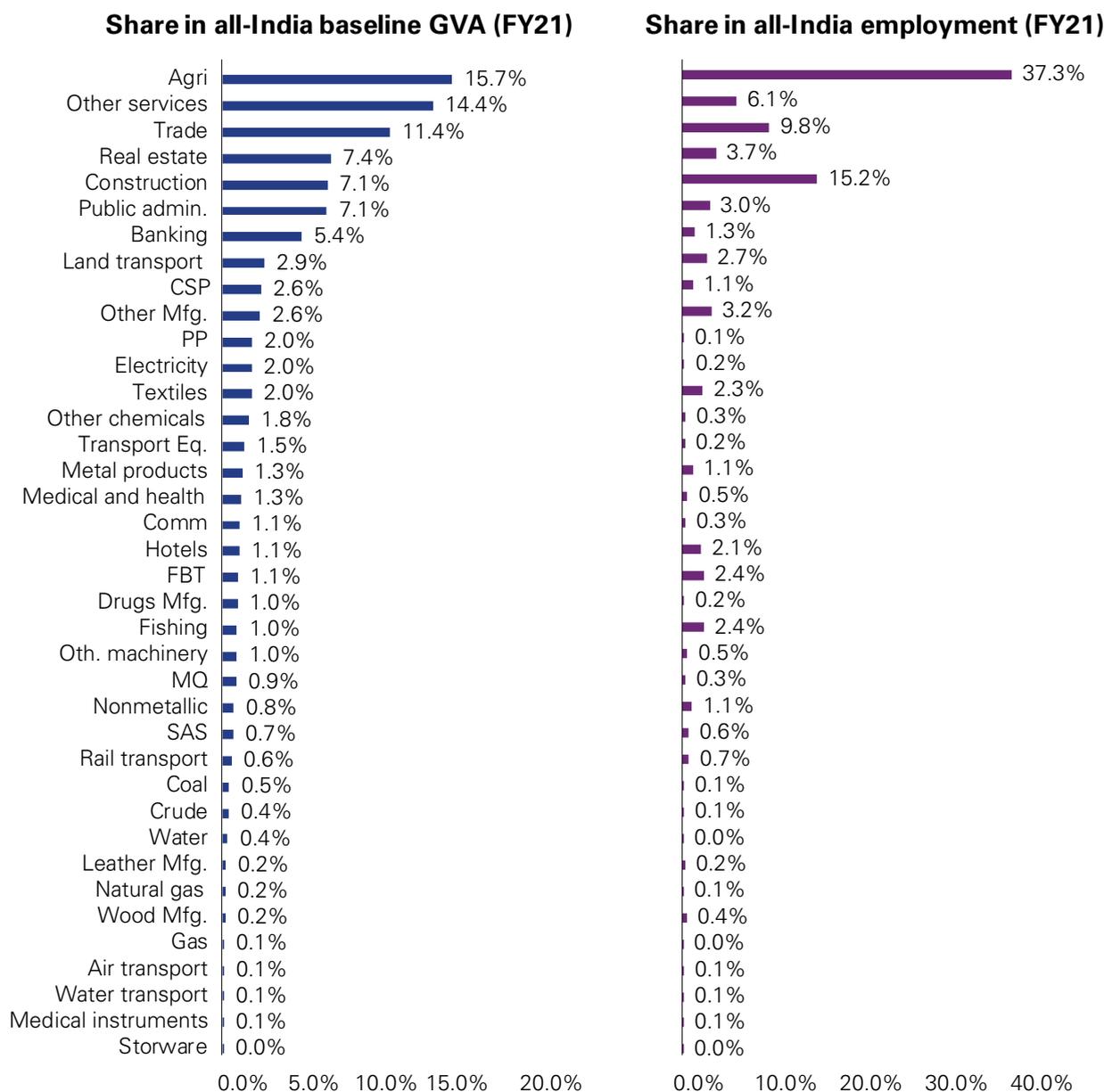


Source: KPMG in India's analysis 2020



**Sector-wise share in all-India GVA, employment and key final demand components:** Sectors with higher share in GVA, employment and key final demand components are likely to contribute more to the overall fall in GVA and employment at an all-India level. Agriculture, wholesale and retail trade, other services, real estate, construction and public administration are the top six sectors when ranking them on basis of share in all-India GVA and employment. This factor is very important since the impact of any stimulus would be higher through a sector which has a greater size than other smaller sectors. Below graph ranks all sectors on basis of their share in all-India GVA and employment and key demand components.

**Figure 16: Shares in all-India counterfactual FY21 GVA and employment**

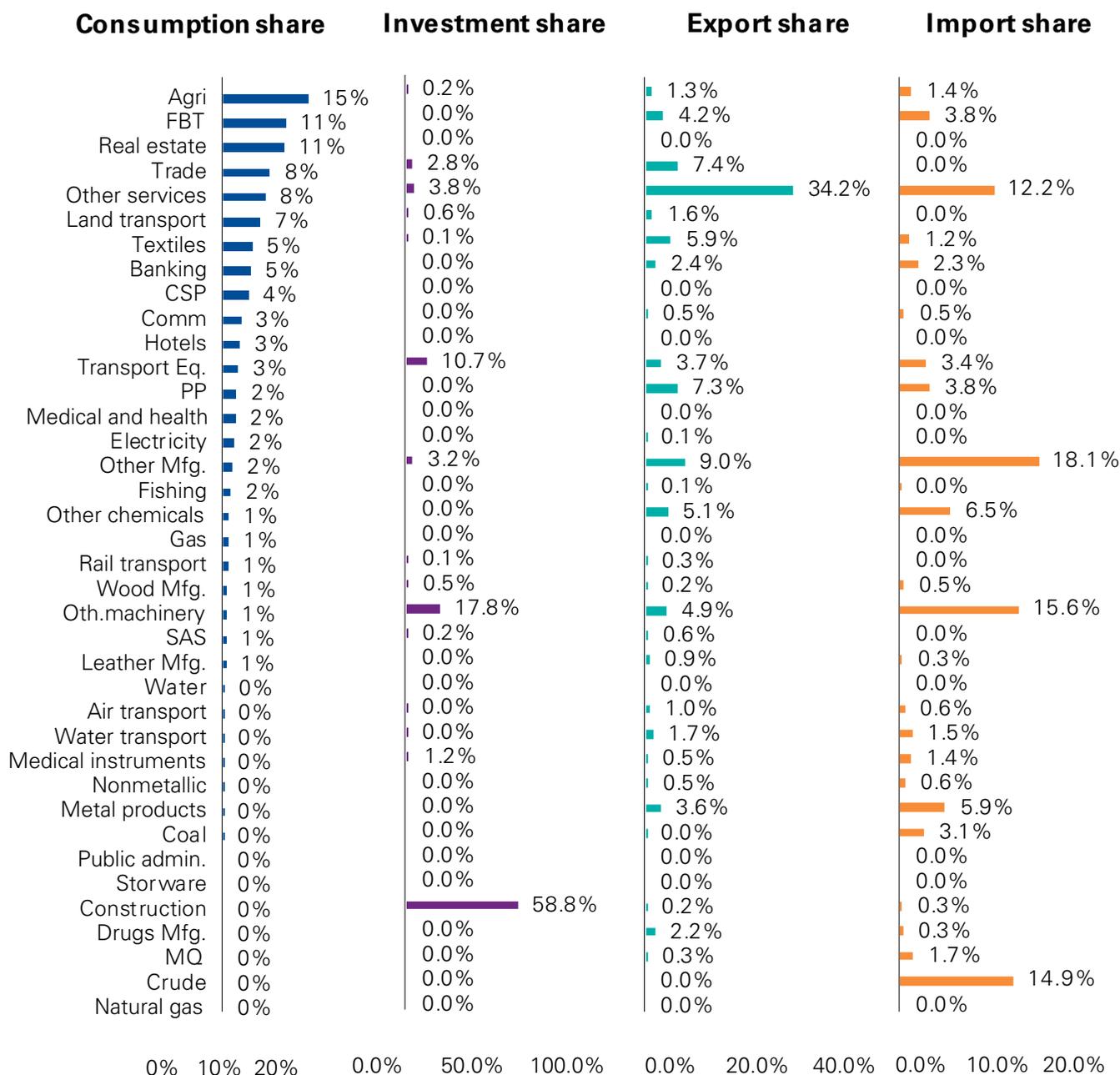


Source: KPMG in India's analysis 2020

Note: Refer to Table A6 in Appendix for complete list of abbreviations used for the sectors



**Figure 17: Sector-wise share in all-India final demand components**



Source: Supply and Use Tables 2015-16, MOSPI



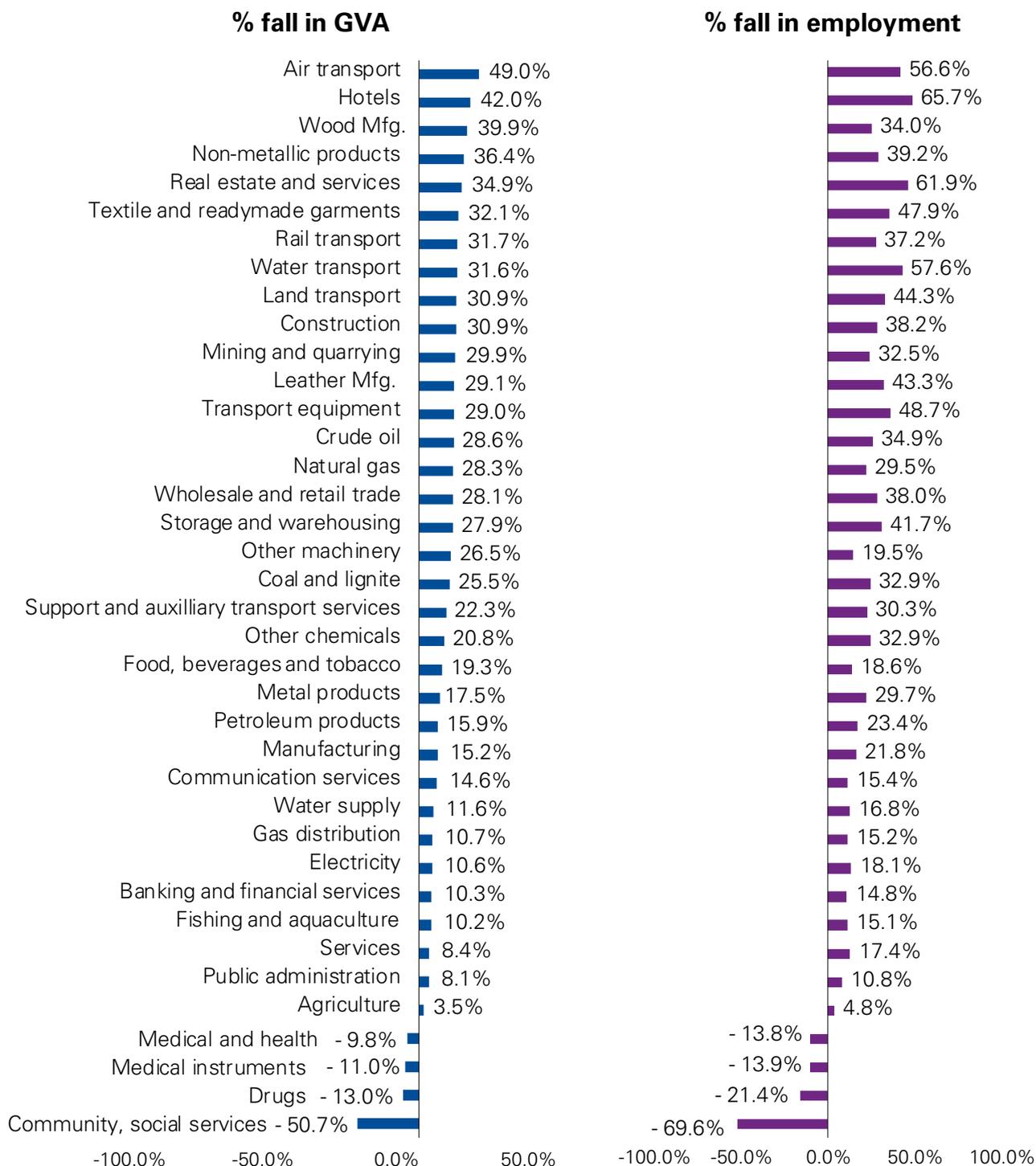
**The level of sector-wise impact of demand and supply disruptions:** On one hand, there are sectors such as air transport and hotels and restaurants that are hardest hit due to social distancing and supply disruptions. For the air transport sector, more than 100 per cent fall in final demand is assumed in our model to account for the expected structural change with the weakening of backward and forward linkages due to social distancing measures. For import dependent sectors such as crude oil, mining and quarrying and natural gas, final demand shock is assumed in our model to be negative due to fall in imports in these sectors.

For agriculture, a negative final demand shock is assumed in our model due to 1.5 trillion investment-fund announced in the stimulus package for the agriculture sector. However, the overall impact on GVA and employment can be negative or positive in these sectors (Figure 18) as the impacts will be driven by inter-industry linkages in addition to the assumed final demand shocks. Further, there are countercyclical sectors such as manufacturing of drugs, health and medicine, community and social service provision that are given high negative final demand shocks and are likely to be positively impacted due to COVID-19. Figure 19 provides sector-specific final demand shocks assumed over baseline final demand under U-shaped scenario along with percentage fall in GVA of the sectors with respect to the baseline scenario in FY21 obtained from the estimated impact assessment model.





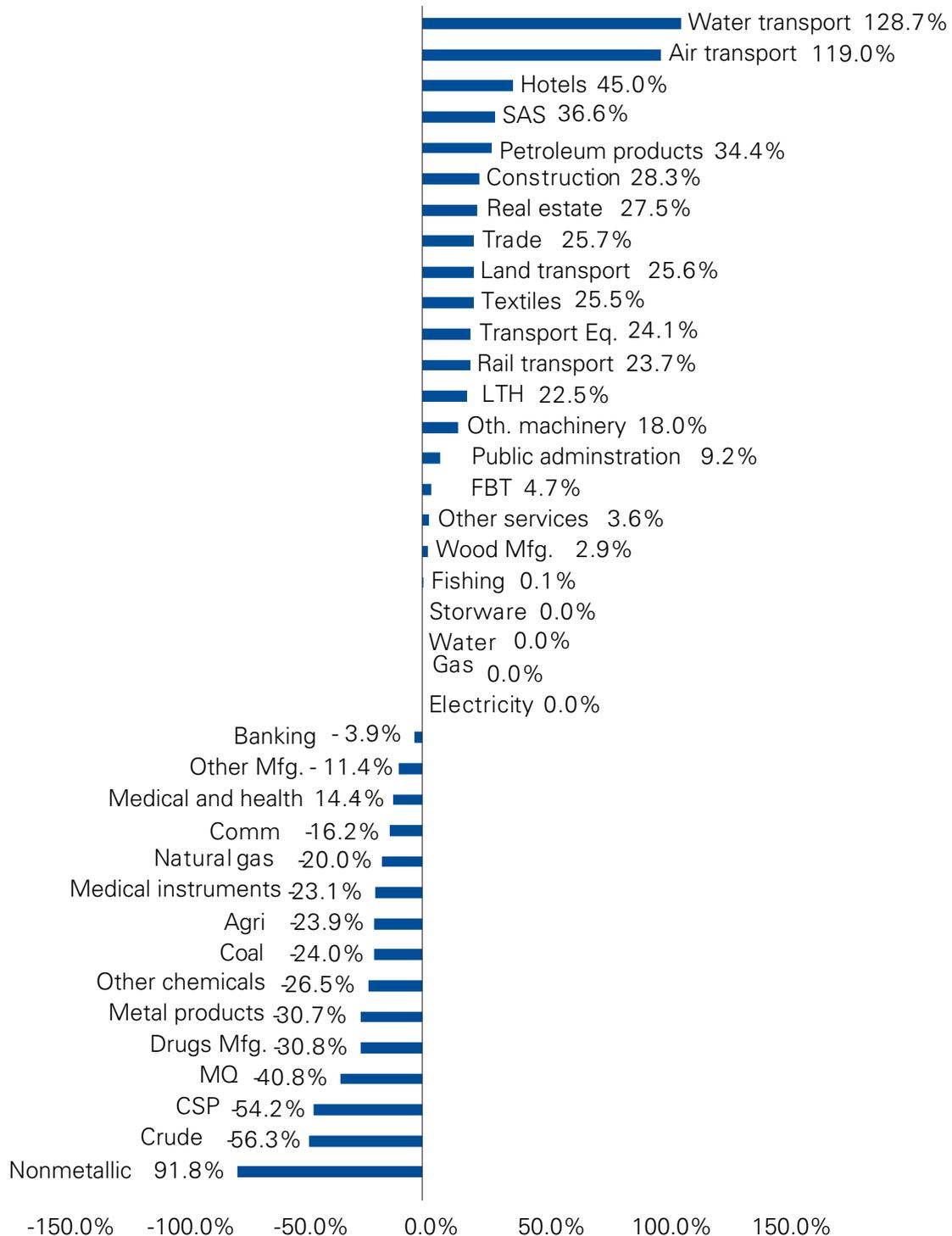
**Figure 18: Percentage fall in GVA and employment over baseline FY21 values**



Source: KPMG in India's analysis 2020



**Figure 19: Percentage fall in final demand under U - shaped scenario**



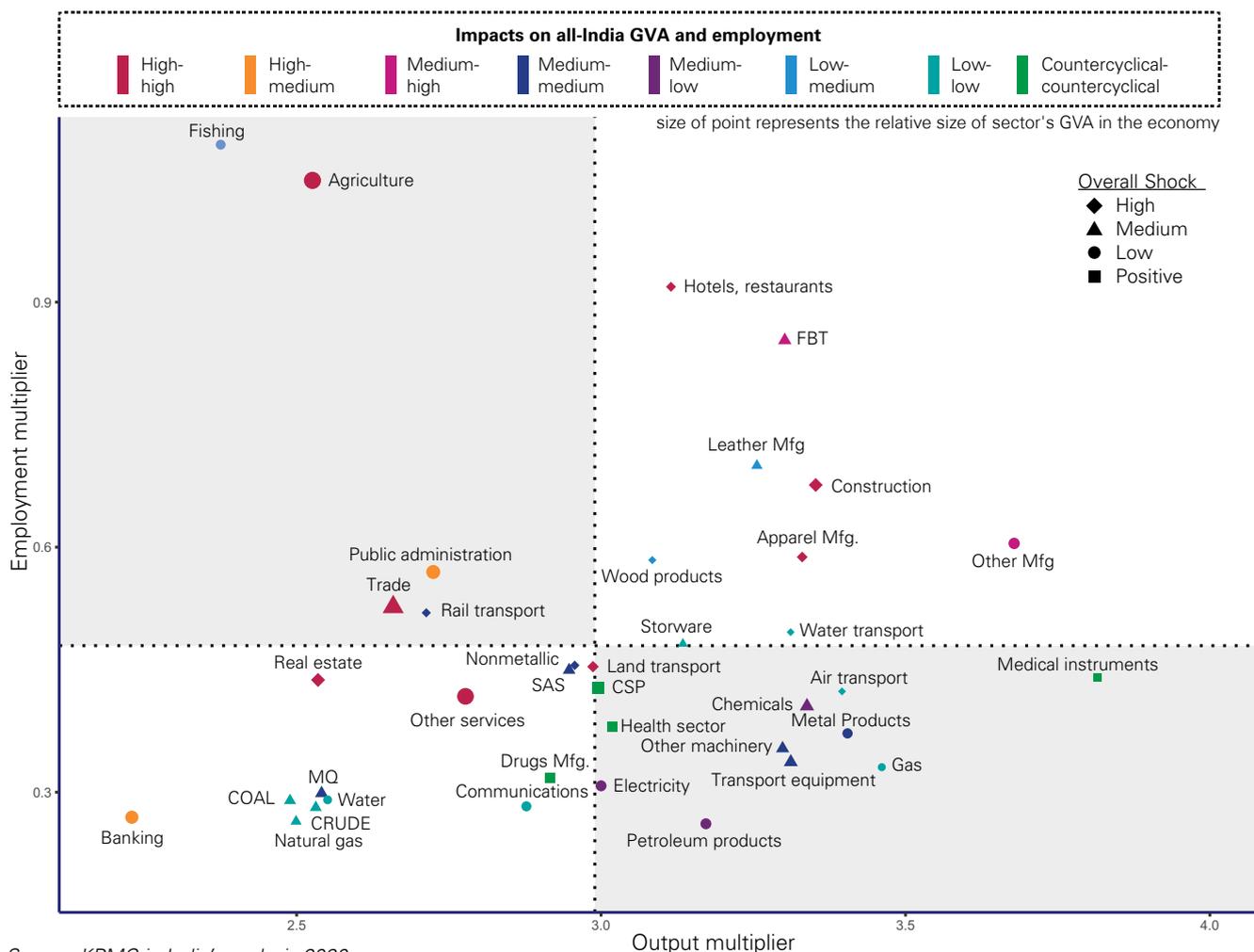
Source: KPMG in India's analysis 2020



**Factors determining sector-wise contributions to impact on all- India GVA and Employment:** To explain the overall high/medium/low contribution of a given sector to all-India GVA and employment, we have drawn a four- quadrant graph that delineates the relative position of all 38 sectors with respect to the above identified four factors. The color of the points in the graph corresponds to eight different groups listed above for the high/ medium/low impact on all-India GVA and employment.

Firstly, all sectors are grouped based on first two factors-output and employment multipliers. The output multipliers are represented by the X axis and employment multipliers are represented by the Y axis. Any circle shaped point in these two dimensions display output multiplier and employment multiplier of the corresponding sector. Both these multipliers can act as guiding tools for identifying the sectors that could help revive the economy and enable speedy post-COVID-19 recovery.

**Figure 20: Factors determining sector-wise contributions to impact on all-India GVA and employment**



Source: KPMG in India's analysis 2020

Note: The suffix 'Mfg' refers to manufacturing FBT refers to Food, Beverages and Tobacco industry; CSP refers to community, social, and personal services; MQ refers to Mining and Quarrying; SAS refers to support and auxiliary services for the transport sector; Storware refers to storage and warehousing



Secondly, the shape of the points has been varied as per the severity of COVID-19' s estimated impact on a sector. Thirdly, the size of the points has been varied according to the share of that sector in economy's GVA. Higher is the share of a given sector to all-India GVA, higher is the size of the point of any given shape.

- Quadrant I display sectors such as construction, apparel manufacturing, hotels and restaurants among others with above average output and employment multipliers indicating high impact on output and employment of the economy with the per unit change in the final demand of these sectors
- Quadrant II displays sectors such as agriculture and wholesale and retail trade among others with above average employment multipliers but below average output multipliers indicating relatively higher impact on employment than output per unit change in the final demand of these sectors
- Quadrant III display essential sectors such as oil, natural gas, mining and quarrying among others with below average output and employment multipliers indicating lower impact on output and employment of the economy with per unit change in the final demand of these sectors
- Quadrant IV displays sectors such as air transport, electricity, land transport among others with above average output multipliers but below average employment multipliers indicating relatively higher impact on output than employment per unit change in the final demand of these sectors.





**1. Eight red colored sectors having high estimated contributions to fall in all-India GVA and employment are scattered across the quadrants indicating that different factors are driving the overall contribution by these sectors.**

- a. The size of the sector, as characterised by the share in GVA and employment, is high for sectors such as wholesale and retail trade, real estate, construction, other services, and agriculture. The remaining three sectors-land transport, apparel manufacturing and hotels and restaurants are medium in size
- b. For some sectors such as construction, hotels and restaurants and apparel manufacturing, output multiplier/backward linkages play a bigger role than the forward linkages implying that they stimulate other sectors. For other sectors such as agriculture, wholesale and retail trade and other services forward linkages are quite significant indicating that they are stimulated by other sectors
- c. In addition to the high share in all-India employment, most of these sectors display above average employment multipliers except sectors such as other services and real estate. Agriculture being the highest employer in the economy also has the highest employment multiplier and is estimated to be the fourth largest contributor to the employment fall under u-shaped scenario due to its high size. It is important to note that as compared to the baseline employment in FY 21, the estimated percentage decline in this sector is 4.8 per cent which is much lower when compared to other sectors such as construction where the estimated decline is 38.2 per cent in the U-shaped scenario (Table A4 in the Appendix)
- d. These sectors differ significantly when it comes to severity of sector-specific demand and supply shocks. Most of these sectors have very high share in the private final consumption of the economy except construction which is driven by investment. About 59 per cent of total annual investment in India happens in construction related infrastructure projects (Figure 17) in different sectors- power sector (generation, transmission, and distribution), irrigation, road/land/rail/air transport, real estate, oil and gas, urban and rural development. As construction is heavily driven by investment, it is likely to suffer a decline in output because existing government funds have been redirected towards COVID- 19 relief efforts. Due to the restrictions on the sale of many non- essential items, social distancing measures, and fall in exports, some sectors such as wholesale and retail trade, real estate and hotel and restaurants have been highly impacted as against essential sectors such as agriculture and sectors with high share of digitally enabled workforce such as other services.

**2. Two orange-colored sectors representing banking and financial services, and public administration, are estimated to have high contribution to impact on all-India GVA and a medium contribution to all-India employment impact. Some characteristics of these sectors are as follows:**

- a. Though the estimated percentage fall in the GVA of the banking and financial services sector as compared to the counterfactual FY21 is low in the U- shaped scenario (10.3 per cent), it is expected to have a high absolute impact on the decline (INR 1.1 trillion) in all-India GVA (Figure 13) due to a high share of 5.4 per cent in the all-India baseline GVA (Figure 16). On the other hand, the sector has a low share of 1.3 per cent in the employment of the economy and is estimated to have a medium impact on fall in all-India employment. It possesses above average forward linkages and below average output and employment multipliers. It is a capital-intensive sector with the capital share of GVA being 68 per cent<sup>6</sup>. The private consumption in this sector which accounts for 4.9 per cent (Figure 17) of the entire economy, is expected to recover fast post-lockdown



- b. Public Administration: The funds for a lot of government relief measures during the lockdown, have been sourced by way of diversion of funds from public administration. Thus, the sector is estimated in our model to contribute to the fall in all-India GVA of around INR 1.18 trillion under the U-shaped scenario.

**3. Nine light-green colored sectors representing low estimated contribution to all-India GVA and employment are mostly concentrated in quadrant 3 and 4. Some characteristics of these sectors are described below:**

- a. The estimated contribution of these sectors to fall in the national GVA and employment, is low. Most of these sectors have low shares in the overall final consumption or investment as they are primarily used as intermediate inputs by other sectors of the economy. For example, in this category, communications sector accounts for the highest share of about 3.2 per cent of private final consumption expenditure in the economy, while the remaining 8 sectors account for a total of 1.6 per cent consumption expenditure (Figure 17)
- b. This category includes many ENR sectors such as natural gas, coal and crude oil and essential sectors such as water supply which have relatively lesser multiplier impacts on both the output and the employment of the economy despite being key enablers of growth.
- c. All the ENR sectors in this category are highly capital-intensive with average capital share of 70 per cent in the GVA and average labour share of 30 per cent in the GVA<sup>7</sup>. Though the ENR sectors come under essential industries and thus their operations have been minimally impacted from supply side, however, due to the overall slowdown in the industrial and commercial sectors (which use these resources as inputs), there is an estimated fall in GVA of these ENR sectors as compared to the baseline GVA in the range of 26-29 per cent under the u-shaped scenario (Table A4)
- d. Air transport, despite being severely hit, is relatively smaller in its estimated contribution to all-India GVA and employment fall. In terms of absolute value of the decline in GVA, it is estimated to be low (0.07 to 0.11 trillion in the 3 scenarios) compared to other sectors in the economy but in terms of the percentage decline in GVA (39 per cent to 63 per cent), the sector is expected to be impacted the most. There is an estimated fall in employment of 56.6 per cent (U-shaped scenario) over the projected baseline FY21 employment of 0.50 million, and the corresponding percentage fall in GVA in this scenario is estimated to be around 49.0 per cent (Table A4 in the Appendix).
- e. Most of the sectors in this category, except for crude oil, have below average forward linkages, and thus are estimated to have a low impact on the all-India GVA. Among them, sectors such as air transport, water transport, gas distribution, and storage and warehousing, have above-average output multipliers but these sectors are relatively smaller sectors in the economy in order to cause a high impact on the economy. Sectors such as coal, crude oil, natural gas, and water supply have below-average output and employment multipliers in addition to being small sectors in terms of share in all-India baseline GVA.

7. Measuring Productivity at the Industry Level – The India KLEMS Database, RBI website, September 2020



**4. Twelve sectors have a medium estimated contribution to GVA fall. Seven of these are associated with medium contribution (as represented by dark blue color) to employment fall while three are associated with low (purple color) and two with high (pink color) estimated contribution to employment fall. Some key points are as follows:**

- a. Other manufacturing and food, beverages and tobacco (FBT) are the two most important sectors belonging to the group of medium and small manufacturing enterprises (MSME). They both have above average output and employment multipliers and medium share in all-India GVA and employment. While other manufacturing accounts for about 3 per cent GVA and employment in the economy, FBT on the other hand accounts for 1.1 per cent GVA and 2.4 per cent employment (Figure 16)
- b. Petroleum products and Electricity, two of the key ENR sectors also belong to this category and they account for 2 per cent each of all-India GVA and 0.1 per cent and 0.2 per cent respectively of the employment in the economy (Figure 16). Both the sectors exhibit high output multipliers and high forward linkages scores implying that they enable other sectors in the economy as well as are enabled by them. Both electricity and petroleum products are capital intensive sectors and have below average employment multipliers making their overall contribution to employment fall. The lockdown resulted in a sharp decrease of 70 per cent in demand for petroleum products due to fall in demand from aviation, petrochemicals and exports. However, as the economy recovers from COVID-19, demand for petrol and diesel is likely to bounce back<sup>8</sup>. Electricity demand also reduced 20-25 per cent during lockdown due to fall in the industrial and commercial sectors but it has recovered fast post lockdown with starting of the businesses<sup>9</sup>
- c. Rail transport accounts for a small share in GVA and employment in the economy but is a critical infrastructure sector. It was severely hit by the lockdown as all passenger rail services were stopped. Selected services have been started across the country, but complete recovery is still a long way off. It has below average backward and forward linkage score but above average employment multiplier and hence it is expected to have a medium contribution to employment fall in the country despite its small size
- d. Mining and quarrying sector accounts for 0.9 per cent GVA and 0.3 per cent employment in the economy (Figure 16) and has below average output and employment multipliers resulting in a low estimated contribution to employment fall in the economy. Despite being one of the essential sectors, this sector had supply as well as demand side impacts. It was affected by labour shortages due to migration; by the closure of other sectors that provide inputs for mining; and other sectors that buy the output of the mining sector like construction and machinery, among others. Offtakes from 5 major state for mining fell by an average of ~60 per cent, during the lockdown<sup>10</sup>. Demand is likely to recover slowly as operations/demand in the economy resume and labour migrates back for employment
- e. Other machinery is another important sector in this category which accounts for 1 per cent GVA and 0.5 per cent employment in the economy (Figure 16). It's a capital-intensive sector and accounts for 18 per cent investment in the economy (Figure 17). It has above average output multiplier but below average employment multipliers. It has a high import share in the economy which is expected to be severely impacted due to COVID-19

8. Petrol, Diesel Demand Return To Pre-Covid Levels, BW Businessworld, November 2, 2020

9. KPMG in India's analysis 2020, based on data from NLDC website, accessed in September 2020

10. Impact of COVID-19 on the Mining sector in India, KPMG in India, May 2020



- f. Transport equipment has an above-average output multiplier and a below-average employment multiplier. The sector has been severely impacted due to the lockdown restrictions and the multiplier-impacts arising from other transport sectors such as air transport, water transport, land transport, etc. The sector accounts for around 11 per cent of the investment in the economy and around 3-4 per cent of the all-India exports and imports. It has a baseline GVA of INR 3.1 trillion, and a baseline employment of 1 million. The lockdown has resulted in a significant reduction in its private final consumption expenditure, investment, exports, and imports.

**5. The sectors which are expected to witness an increase in GVA or employment are being marked with dark-green color in the graph. These sectors include medical and healthcare services, drugs, medical instruments, community social and personal services etc. Some characteristics of these sectors are described below:**

- a. GVA and employment contribution of these sectors in the national GVA and employment is less than 2 per cent, except for community social and personal services (CSP)<sup>11</sup> which contributes 2.6 per cent to the overall GVA of the economy (Figure 16). All sectors have above average output multipliers (except drug manufacturing) along with below average employment multipliers.
- b. CSP and Medical and Health services (MHS) are the two most important sectors driven by private final consumption expenditure and government consumption expenditure. In the times of COVID-19, private and public consumption expenditure of CSP sector has significantly increased due to higher allocations to various welfare schemes such as MNREGA and community programs run by different private organisations. The boost in the MHS sector after COVID-19 has primarily been on account of creation of new COVID-19 treatment facilities, isolation wards, increased testing capacities, additional manpower etc. which in turn increased the net value added by the sector.
- c. Drugs manufacturing sector has high forward linkages with medical and health sector and is likely to witness increase in its demand during current pandemic. At the same time, India contributes to about 20 per cent to the total drug exports in the world, while some drugs are also imported<sup>12</sup>. The export and import shares of drug manufacturing in the national account are about 2.2 per cent and 0.3 per cent respectively (Figure 17).
- d. Medical instruments on the other hand are more investment driven (constituting roughly 1.2 per cent in the economy's investment, see Figure 17) and most instruments are imported by India from US firms. Almost 80 per cent of India's medical devices are imported and barriers to entry are low in comparison to other industries<sup>13</sup>. India has a high dependence on imports for various kinds of medical devices, particularly higher-end products used for cancer diagnostics, medical imaging, ultrasonic scans, and PCR technologies. In the aftermath of COVID-19, some critical breathing devices such as ventilators are now being manufactured within the nation, that has boosted the GVA of the sector.

---

11. CSP includes services such as sewage and refuse disposal, rehabilitation, sanitation, recreational, artistic, cultural and sporting activities, funeral and related services, hairdressing and other beauty treatment, washing and dry-cleaning of textile, etc  
12. Pharmaceutical Exports from India, IBEF website, November 2020  
13. Healthcare Resource Guide: India, export.gov website (International Trade Administration), October 2019



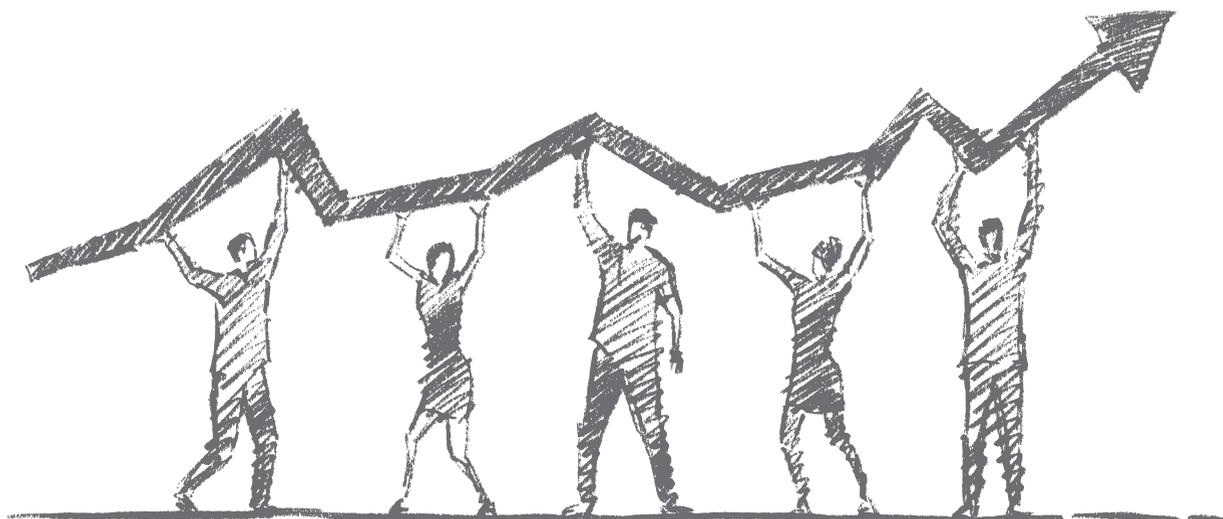
## 7. Policy recommendations

COVID-19 is a global pandemic that has led to a public health crisis with severe economic consequences. As the disease outbreak is not likely to recede or be under full control in the immediate near future, proactive policy actions are required to save lives and protect the economy.

Government policies can significantly determine the speed of recovery of output and employment to the baseline scenario. The existing stimulus package of INR 20.9 trillion is focused on improving liquidity in the market, providing collateral free loans to MSMEs and introducing some structural reforms, along with some fiscal measures to give money and food to the economically weaker households. While these measures to an extent address the supply side problems, the coronavirus pandemic requires higher government expenditure and investment to push the economy back on a growth trajectory by directly increasing final demand and boosting both consumer and business sentiments.

A concern of higher government spending is that it leads to an increase in the fiscal deficit. According to the Controller General of Accounts (CGA), the fiscal deficit for FY2020 stood at 4.59 per cent of GDP, higher than the aim of 3.8 per cent. According to IMF projections<sup>14</sup>, India's fiscal deficit for the year 2020 (calendar year), may rise to 13.1 per cent of GDP. This includes both central and state deficits. However, considering the extraordinary situation that has arisen, it may be beneficial to increase spending despite the rise in fiscal deficit. The outbreak has caused an acute humanitarian crisis as well as an economic one. Other economies like Germany<sup>15</sup> and Japan<sup>16</sup>, have stepped up borrowing to fight the pandemic.

**Using the estimated average all-India income multiplier of 1.5, we can get closer to V-shaped scenario by increasing final demand by 7.4 trillion in the U-shaped scenario and 15.1 trillion in the L-shaped scenario. We recommend this required increase in final demand to be met 50 per cent by an increase in the consumption expenditure by way of direct benefits and health related expenditures (over and above 3.1 trillion announced in the economic stimulus) and 50 per cent to be met by increase in the investment (over and above 1.58 trillion announced in the economic stimulus) in the health and critical infrastructure sectors.**



14. FISCAL MONITOR: Policies for the Recovery, IMF, October 2020

15. Germany tears up fiscal rule book to counter coronavirus pandemic, March 21, 2020

16. Japan's Coronavirus Response Increases Public Debt Challenge, FitchRatings, April 15, 2020



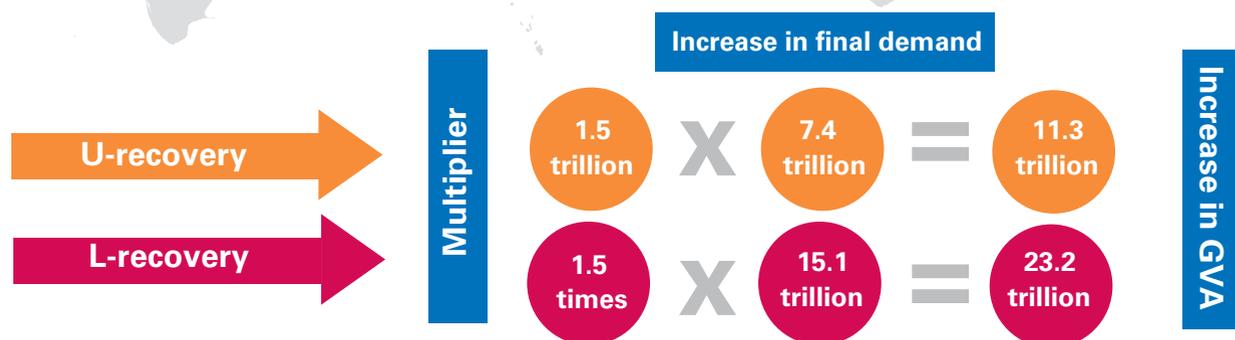


## Achieving V-shaped recovery by increasing final demand



- -23.9% GDP Decline in Q1-2021
- Falling manufacturing activity
- High unemployment
- Falling exports

- Strong V-recovery
- Flourishing manufacturing activity
- New employment opportunities
- Rising exports



## Changes in final demand components over baseline values

Changes in demand components over baseline values	Change over baseline (in INR trillion)			Baseline values - FY21 (INR trillion)
	V recovery	U recovery	L recovery	
Consumption	-9.8	-14.8	-20.2	135
Investment	-10.3	-14.3	-18.5	61
Exports	-4.6	-6.4	-8.2	42
Imports	-8.2	-11.0	-13.9	48

Source: KPMG in India's analysis 2020



## Sector-specific triggers to achieve V-recovery

	Sectors	Category	Consumption	Investment	Exports	Indicative impact of INR 1 trillion increase in final demand on*		
						Output of economy (INR trillion)	Employment of economy (million-person years)	
Prioritised focus	Healthcare	Medical instruments	Countercyclical	✓	✓	✓	3.82	4.40
		Medical and health	Countercyclical	✓	✓		3.02	3.80
		Drugs manufacturing	Countercyclical	✓	✓	✓	2.92	3.18
	Agriculture	Agri	High-high	✓	✓	✓	2.53	10.49
	Construction	Construction	High-high	✓	✓		3.35	6.76
	Other sectors	Trade	High-high	✓			2.66	5.27
		Real estate	High-high	✓			2.54	4.37
		Other services	High-high	✓	✓	✓	2.78	4.17
		Land transport	High-high	✓	✓		2.99	4.54
		Apparel manufacturing	High-high	✓	✓	✓	3.33	5.88
Banking		High-medium	✓			2.23	2.69	
Hotels, restaurants		High-high	✓			3.11	9.19	
Other manufacturing	Medium-high	✓	✓	✓	3.68	6.05		
FBT	Medium-high			✓	3.30	8.53		

Source: KPMG in India's analysis 2020

Impact of INR 1 trillion increase in consumption or investment on overall economy



Specific recommendations for selected sectors are presented in the table below:

## Strengthening healthcare systems in India

In India, health expenditure is 1.29 per cent of GDP in FY20<sup>17</sup>, which is one of the lowest in the world. For improved pandemic preparedness, we need to focus on creating effective health systems. While all the other action plans are a response to a pandemic, a well-developed healthcare system can support even in containing the pandemic. Further, a well-developed healthcare system can be pushed to create additional capacity and skills, in the time of pandemic versus investing in creating the health systems in the middle of the pandemic. While preparedness costs only a fraction of the pandemic impact, the returns on this investment are exponential.

This preparedness should proactively be developed on the basis of affordable health infrastructure, integration of supply chain networks of essential resources, regular coordination between national and international organisations on R&D, policies health commodities and workforce management, clear surveillance and risk communication strategy, financial preparedness and innovative funding mechanisms. Access to protection should not be a factor of ability to pay and must focus on frontline healthcare, other essentials workers and the most vulnerable.

### Proposed measures in key sub-sectors for strengthening healthcare systems.

### Indicative impacts

#### Medical and health services (Hospitals)

1. Higher government expenditure on healthcare infrastructure from district hospitals to health & wellness centers.
2. Adoption of digital health

1. Greater access to medical services will help in bridging systemic gaps in Indian Public Health System
2. Boost consumer and business sentiments important for reviving consumption and investment.
3. 1 trillion investment in this sector is expected to result in 3 trillion increase in output and 3.8 million-person year employment in India across sectors.

#### Manufacturing of drugs and medicines

1. Increasing investment in such facilities to increase supply
2. Measures such as Performance linked incentives (PLI) can boost setting up of new manufacturing units in Active Pharmaceutical Ingredients (API) and bulk drugs .

1. Better availability of raw material, reduction in import dependency and increase in domestic supply of drugs.
2. 1 trillion investment in this sector results in 2.92 trillion increase in output and 3.18-million-person year employment in India across sectors .

#### Manufacturing of medical equipment

1. Increasing investment in the units producing ventilators and testing kits.
2. Boost to medical device sector with PLI and Medical Device Parks

1. Drive employment and reduce import dependability.
2. 1 trillion investment in this sector is expected to result in 3.82 trillion increase in output and 4.4 million-person year employment in India across sectors.

17. India's economy needs big dose of health spending, Mint, April 8, 2020



## To stimulate high impact sectors for increasing employment and output of the economy.

India's informal sector is the largest in the world, employing almost 90.7 per cent of the total workforce in FY18 and contributing ~45 per cent to GDP (Mehrotra and Jajati, 2019<sup>18</sup>; Dev and Sengupta, 2020<sup>19</sup>). Most of these jobs are concentrated in the agriculture, construction sector and small-scale manufacturing (through unorganized outlets) and services sectors (wholesale and retail trade and hotels and restaurants).

With all the major employment providing sectors undergoing a distress due to COVID-19 and the associated lockdown, employment could fall by 11.6 to 31.1 per cent over the 2019-20 figures as estimated by our study. In addition, the vastness of the informal sector is likely to cause a disproportionate effect. Appropriate measures for boosting employment and output in selected sectors need to be taken in addition to targeted short-term direct income transfers to vulnerable groups who are hard hit during the pandemic.

### Proposed measures

### Indicative impacts

#### Agriculture and allied activities

This sector has the highest employment multiplier and belongs to the high-high category when it comes to the contribution to absolute fall in all-India GDP and all-India employment due to COVID-19 because of its large size.

1. By increasing final demand in the sector through pushing investments/ private and government consumption expenditures will have a strong impact on employment generation. There is a need to share a clear plan on the mode through which INR 1.5 trillion<sup>20</sup> investment (allocated for farm gate infrastructure and strengthening the agriculture supply chain) will happen along with the timelines.
2. Krishi Vigyan Kendras (KVKs) and similar bodies should be strengthened, and trainings should be conducted for farmers, rural migrated and stranded urban workforce.
3. Illustrative communication on the three Agri reforms + PM-FME scheme plus 10,000 FPOs scheme
4. To increase coverage of INR 1.79 trillion package to include landless poor farmers.

1. 1 trillion investment in this sector is expected to result in 2.53 trillion increase in output and 10.5 million-person year employment in India across sectors.
2. Clarity on the investment mode will attract additional funds in the sector from the private sector and farmer producer organisations and the overall impact of the package can be enhanced.
3. Trainings by local institutions will help farmers prepare better to cope with demand and supply challenges. And get clarity on the key benefits under the economic stimulus package and state specific relief measures.
4. There is lot of miscommunication on the impact of recent agricultural reforms. These three reforms must be clubbed with other reforms like PMFME and FPO schemes that will create a new perspective on the benefits that can accrue to the farmer groups.
5. Direct benefits to landless farmers will help them sustain basic consumption expenditure.

18. India's employment crisis: rising education levels and falling non-agricultural job growth, Azim Premji University publication, Mehrotra and Parida 2019  
19. Covid-19: Impact on the Indian economy, Indira Gandhi Institute of Development Research, Dev and Sengupta, accessed in September 2020  
20. Atmanirbhar Bharat: Break-up of Rs 20 lakh crore package announced in five tranches by FM Sitharaman, Financial Express, May 17, 2020



## To stimulate high impact sectors for increasing employment and output of the economy.

### Proposed measures

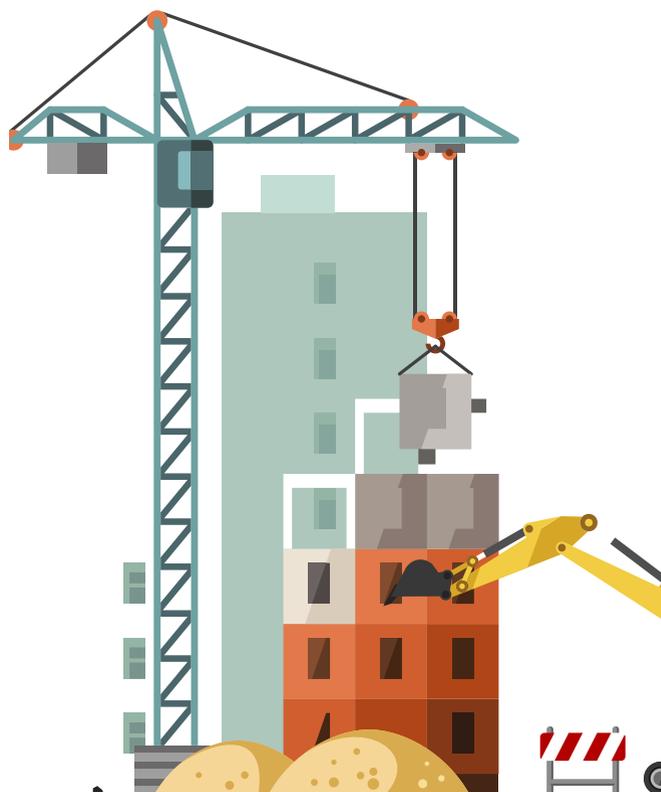
#### Construction

The Indian construction industry is only behind agriculture in terms of its employment numbers (57.5 million), and it has high employment and output multipliers. It falls in the high-high category when it comes to its contribution to the absolute fall in all-India GVA and employment. The size of the industry is INR 10.5 trillion, and it accounts for around 8 per cent of the nation's GDP<sup>21</sup>. Despite being fragmented, it was the second largest recipient of Foreign Direct Investment (FDI) in 2017. A fall in economic activity in other sectors would impact construction services through the mechanism of forward linkages. Similarly, a fall in output of construction sector would have a multiplier effect through backward linkages which would further cause the overall economic activity to shrink.

1. Commission a crisis management construction task force team for fast-tracking some specific projects that are impacted by COVID-19, re-prioritizing projects portfolio, and suggesting policy interventions without changing the infrastructure targets.
2. Amend model concession agreements for the public- private partnership (PPP) projects to revive private sector interest.
3. Infuse a one-time fund to accelerate projects nearing completion. For infusing capital and required funds, a policy can be put in place for harmonious substitution of special purpose vehicle (SPV) in consultation with lenders and concessionaire, subject to certain terms and conditions.
4. At state and municipality levels, provide healthcare and dedicated housing facilities for construction workers at the project sites to disincentivize reverse migration in such times.

### Indicative impacts

1. 1 trillion investment in this sector is expected to result in 3.35 trillion increase in output and 6.8 million-person year employment in India across sectors.
2. Suggested measures will enhance quality of living and meet project timelines and budgets.



21. COVID-19: Assessment of economic impact on the construction sector in India, KPMG, May 2020



## To stimulate high impact sectors for increasing employment and output of the economy.

### Proposed measures

#### Other key sectors

Three MSME sectors with very high informal unemployment and high output and employment multipliers include other manufacturing, textiles and garment manufacturing, and food and beverages sector (FBT). In terms of absolute contribution to the fall in all-India GVA and employment, the textiles sector belongs to the high-high category while the other manufacturing and FBT sectors belong to the medium- high category.

Two major service sectors with very high informal employment and high employment multipliers include hotel and restaurants (HR) sector and wholesale and retail trade sector.

Below are listed some suggested measures for these sectors:

1. To provide direct tax cuts and unemployment benefits in addition to liquidity stimulus to these sectors.
2. Business Facilitation Center (BFC): BFCs for MSMEs should be created in every district. MSME Departments in States should be provided a budget of least INR 3-5 Cr. per year for developing, monitoring, tracking programs and their progress. Districts which achieve the measurable Key Performance Indicators (KPI) or milestones can be provided an extra grant of INR 50 lakh per year.
3. Increase the limits of existing schemes such as PMEGP, CGT-MSE in line with new definitions for Micro, Small, Medium Industries
4. Immediate tracking of people who have been laid off should be done through industry surveys in rural and urban sector at the district and block level. There should be special centers/helplines/online website where these people can register with minimum information for seeking social benefits.
5. Identification of safe jobs in the supply chain of counter- cyclical sectors which have capacity to pivot such as drug manufacturing, hospital and communication, can provide opportunities for employing labour from other sectors negatively impacted. For example, the hotel industry can tie up with hospitals to provide food and accommodation facilities on large scale.
6. Developing Rural Ecosystem and Sustainable Business Models In the medium to long run , develop "Make in Rural India" as a program for Localizing Supply Chains. In the medium to long run, a well thought plan is required for sustainable development of the rural economy. The identified sectors and their sub-sectors that depend on rural economy for the supply of raw materials can be promoted within the rural/semi-urban areas using a cluster-based approach as already proposed for micro-food enterprises in the stimulus package.

### Indicative impacts

1. Higher investment in other manufacturing sector has the highest impact on the economy's output amongst the MSME sectors with one trillion increase in investment resulting in 3.7 trillion increase in output and six million person year increase in the employment in India across sectors.
2. Higher investment in FBT/HR sector has the highest impact on the economy's employment amongst identified other key sectors with 1 trillion increase in investment resulting in 3.1-3.3 trillion increase in output and 8.5-9 million person year increase in the employment in India across sectors.
3. Mapping will help in providing targeted support and enable efficient use of limited resources.
4. Medium-long run plan will build regional capacities and strengthen the supply chain along with local job creation. This will help make the Indian economy more resilient to such pandemic situations and less vulnerable to the labour migration problem in future.



## Boosting consumption in the economy

For the economy to go back to its normal growth trajectory, the consumption lever can be pulled for major sectors by increasing disposable incomes, reducing prices of commodities and increasing consumer sentiments. This is because little over 50 per cent of the gross output of Indian economy comprises of final demand, the remaining being the inter-industry demand. According to the consumption expenditure survey conducted by NSS (68th round, 2011-12), expenditure on food and non-food items varies across rural and urban sectors. Overall, the share of non-food items in the MPCE was higher among urban households (57.4 per cent) while among rural households, the share of food items in MPCE was higher (52.9 per cent). Below identified sectors can be focused on to boost consumption in the economy:

### Proposed measures

Direct cash transfers to farmers and other vulnerable sections of the society would boost consumption of essential commodities and rural economy in sectors such as agriculture, FBT, transport and cooking gas fuel (gas).

### Indicative impacts

#### Boosting consumption of non-essential products

The consumption of non-essential items and that of urban economy would likely remain low on account of low consumer sentiments and psychological impact of the pandemic. Some consumption categories would recover on their own, while others would need some stimulus from the government. Since consumer spending makes up a significant proportion of economic output, the government must try to boost consumption in the economy of key sectors such as real estate and wholesale and retail trade.

1. Need to take appropriate measures to improve spending of middle-income groups through income and corporate tax reforms, tax deferrals, interest subvention etc.
2. Recovering social consumption in the hard-hit sectors such as air transport sector, hotels and restaurants, etc. which have witnessed a significant fall in revenues and will need a special stimulus to recover in post pandemic period for example through loans and credit support, tax credits and cuts.

1. Cash transfers and subsidies would help in promoting consumption of essential commodities and are important and relevant in context of current employment issues.
2. Measures to boost these sectors would give a temporary big push to large consumption driven sectors and help the economy to recover fast. A one trillion increase in final demand in real estate/wholesale and retail trade is expected to result in 2.6 trillion increase in output and four to five million jobs in the economy.
3. Special measures will enable hard-hit sectors to kick start their operations after the COVID-19 spread has been contained. A one trillion increase in final demand in air transport sector is expected to result in 3.4 trillion increase in output and 4.2 million jobs in the economy.



## Boosting investments in critical infrastructure sectors of the economy for long-run sustainable growth

Investment comprises of 30 per cent of final demand in the economy (Figure 5). For achieving the normal growth path, investment lever can be pulled in critical infrastructure sectors such as large construction projects in water and sanitation, electricity, transport and agriculture sector which can generate significant multiplier impact on employment and output of the economy. Further, investment efforts can be focused primarily on key sectors where India can offer greater competitive advantage such as IT/ITeS, medical tourism, pharmaceuticals, renewable energy, transportation and food processing etc.

### Proposed measures

1. A priority list of large construction projects can be prepared which can immediately be started in green zones of rural and semi-urban areas such as large-scale agriculture and irrigation projects, solar projects, DT metering, feeder segregation, smart metering, improving infrastructure related to drinking water and sanitation provisions under different schemes etc.
2. Investment in automation and digitization is essential for increased efficiency and productivity, especially in the current environment, where it is feasible to work remotely.
3. Plug and play model can be promoted under which foreign investors can be provided land with power, water and road access.
4. A country-sector focus needs to be adopted (identify countries globally committing large investments and enhance bilateral engagement with those nations)
5. Need to create a conducive support system and provide access to high quality legal assistance
6. Need to develop a Regional Industrial Framework based on local industrial advantage of State/regions. Case in point: the Neemrana investment zone or the Gurgaon IT ecosystem
7. Focused joint ventures and technical collaborations with global players to scale investments

### Indicative impacts

1. A one trillion higher investment in the electricity/transport sector is expected to increase output by three trillion and employment by three-to-five-million-person years in India across sectors.
2. Investment in the critical sectors would not only support industrial growth but would also lead to generation of new jobs and opening avenues for private sector investment thereby laying the foundation for a resilient economy in the future.
3. Proposed measures will boost the level of FDI in the country
4. With appropriate investment policies, India may also be able to benefit from the exodus of foreign investment from other countries.



## Boosting exports in high growth potential sectors

Further government can introduce reforms in trade policies to increase India's competitiveness as compared to other countries. The following are the sectors that hold a high growth potential in exports:

1. Food processing (Food, Beverages, and Tobacco)
2. Automobile (Transport Equipment)
3. Pharmaceuticals (Drugs Manufacturing)
4. Engineering goods (Metal Products, Transport Equipment, Other Machinery)
5. Textiles and apparels (Apparel Manufacturing)
6. Leather products (Leather Manufacturing)
7. Organic and inorganic chemicals (Other Chemicals)
8. Gems and jewelry (Other Manufacturing)
9. Medical devices (Medical Instruments)

### Proposed measures

1. Need to strengthen industrial clusters with related infrastructure and port connectivity
2. To create necessary infrastructure for promoting standards and certifications
3. To push state-level export strategy taking into account comparative advantages
4. To make export-import-related compliance easier (NITI Aayog's proposal to set up a national trade network (NTN), which could enable exporters to file documents and all information online at one place, should be considered)
5. To make custom process and IT infrastructure more efficient
6. To assess the export ecosystem and readiness of the states based on gaps in export infrastructure, basic trade support, lack of access to financial facility and low export credit.

### Indicative impacts

1. Increasing competitiveness of Indian products is key to increasing India's share in global trade flows.
2. Tapping into capabilities of Indian states by plugging in the gaps in policy and infrastructure



## 8. Conclusion and limitations



This study assesses the impact of COVID-19 on GVA and employment using output and employment multipliers of all sectors of the economy. A one trillion shock to final demand is likely to have a multiplier impact of 1.5 trillion on GVA and employment loss of six million jobs during FY 2021. Our findings suggest that the Indian economy is expected to contract in the range of 1.1 per cent to 13.6 per cent (V, U, and L-shaped recovery scenarios) over FY 20. Assuming an average all-India income multiplier of 1.5, we can get closer to V-shaped scenario by increasing final demand by 7.4 trillion in the U-shaped scenario and 15.1 trillion in the L-shaped scenario. The study can be used as a guiding tool for future policies that can aid recovery by stimulating growth in the economy through investments in sectors with high-multiplier effects.

The main data source for the study is the Input-Output table for 2015-16. Usually the inter-industry flows within an economy remain intact for years, but COVID-19 is a special event that might have induced some structural changes in the economy. These changes include variations in consumer's purchasing capacity and spending patterns, technological shifts in the production processes (such as changes in the use of capital and energy intensive resources), changes in labour productivity, resource availability, and changes in environmental as well as the political landscape.

Since the pandemic has led to loss of jobs and disrupted global supply chains, there could be permanent changes in spending and production activities. Due to the lack of recent data, the impact of such changes has not been captured by the study. Though this study carefully examines the linkages between various sectors to assess the overall impact of COVID-19, it does not consider the structural changes resulting from the pandemic such as sudden boost in teleconferencing, changes in consumer behaviour, work-from-home business models, reduced travel, rise in e-commerce etc. However, the study is still based on reasonable assumptions on the nature and the quantum of impact on each sector in both lockdown and post lockdown phases.

The study quantifies the impact of demand shocks considering the prices to be "fixed". However, realistically, it should be expected that as the demand and supply shift in the aftermath of COVID-19, equilibrium prices in the economy would also change. If the prices were to change, a firm would re-assess its input mix and shift to cheaper substitutes if possible. Similarly, the consumer would also be sensitive to price changes and switch to other commodities if one commodity becomes too expensive. These effects are called "substitution effects", which are not included in this study.

Lastly, the model is based on linear equations relating outputs of one industry to inputs of the others. This may not hold true for all sectors as increases/decreases in output do not always require proportionate increases/decreases in inputs due to changes in techniques of production, especially after COVID-19.



## 9. Appendix



Considering the quarterly GVA of various industries over the last five years, the average year-on-year growth rate of Q1 was computed. This growth rate allowed the computation of the counterfactual GVA, given the GVA for Q1 of 2019-20. For example, in Table A1, the counterfactual GVA of agriculture of INR 7,77,169 crores was determined by the 5-year average growth rate for agriculture (9.12 per cent) and the 2019-20 GVA for Q1 (INR 7,12,222 crores). This has also been done for mining, manufacturing, electricity, construction, trade, hotels and transport, financial services, and public administration.

**Table A1: Quarterly GVA, growth, and counterfactual**

	Q1 5-year average growth	Q1 2019-20 GVA (INR crore)	Q1 2020-21 GVA (INR crore)	Counterfactual value (INR crore)	Decline from counterfactual GVA
<b>Agriculture</b>	9.12%	7,12,222	7,52,768	7,771,69	3%
<b>Mining</b>	2.37%	1,04,945	1,19,543	1,074,29	43%
<b>Manufacturing</b>	8.19%	6,94,993	4,21,746	7,519,12	44%
<b>Electricity</b>	12.57%	1,24,751	1,18,150	1,404,31	16%
<b>Construction</b>	7.29%	3,50,920	1,70,611	3,764,99	55%
<b>Trade, hotels, transport</b>	9.71%	8,06,915	4,24,739	8,852,59	52%
<b>Financial services</b>	11.24%	10,56,866	10,10,899	11,756,69	14%
<b>Public administration</b>	13.80%	6,37,682	6,05,507	72,56,68	17%

Source: KPMG in India's analysis 2020

The sector-wise index of industrial production data has been considered for the manufacturing industries for the lockdown period April-May 2020 and for June 2020. The per cent change in the index over April-May 2019 and June 2019 respectively was computed in order to estimate the impact of lockdown on the production by the manufacturing industries. The data was available for manufacture of food products, beverages, tobacco products, textiles, wearing apparel, leather, wood products, basic metals, etc. These were aggregated according to the I-O sectors and the respective percentage changes over previous year indexes were measured.



**Table A2: % change in IIP index**

	% Change April-May	% Change June
FBT	-36%	-7%
Textiles	-81%	-50%
Leather Mfg.	-76%	-22%
Wood Mfg.	-78%	-40%
Other Mfg.	-60%	-23%
PP	-26%	-14%
Other chemicals	-37%	-2%
Drugs Mfg.	-24%	35%
Nonmetallic	-57%	-7%
Metal products	-58%	-26%
Oth. machinery	-78%	-33%
Transport Eq.	-91%	-49%
MQ	-24	-20%

Source: KPMG in India's analysis 2020

**Table A3: % change in exports and imports over FY20**

	% change in export		% change in import	
	April-May 2020	June 2020	April-May 2020	June 2020
Agri	-6%	32%	-17%	-1%
Fishing	-24%		-	-
MQ	6%	37%	-42%	3%
FBT	-35%	-3%	-	-
Textiles	-70%	-16%	-45%	-45%
Leather Mfg.	-82%	-35%	-49%	-49%
Wood Mfg.	-79%	-17%	-23%	-23%
Other Mfg.	-65%	-33%	-57%	-39%
PP	-65%	-25%	-50%	-51%
Other chemicals	-21%	30%	-22%	-20%
Drugs Mfg.	19%	20%	-5%	-5%
Nonmetallic	-50%	-3%	-	-
Metal products			-71%	-63%
Oth. machinery	-38%	1%	-39%	-37%
Transport Eq.			-35%	-35%

Source: KPMG in India's analysis 2020



**Table A4: Sector-wise fall in GVA and employment in various scenarios**

Sector	Baseline GVA (trillion)	Baseline Emp (million)	U-shaped		V-shaped		L-shaped	
			% fall in GVA w.r.t to base-line	% fall in emp w.r.t baseline	% fall in GVA w.r.t to base-line	% fall in emp w.r.t base-line	% fall in GVA w.r.t to base-line	% fall in emp w.r.t baseline
Agri	31.8	183.7	3.5%	4.8%	-2.6%	-4.5%	10.1%	15.0%
Fishing	2.0	11.7	10.2%	15.1%	6.5%	9.7%	14.2%	21.2%
Coal	0.9	0.6	25.5%	32.9%	19.5%	25.3%	32.7%	42.0%
Natural gas	0.3	0.3	28.3%	29.5%	19.3%	20.2%	32.8%	34.1%
Crude	0.8	0.5	28.6%	34.9%	23.9%	30.2%	55.3%	69.8%
MQ	1.9	1.4	29.9%	32.5%	20.2%	22.0%	38.3%	41.8%
FBT	2.1	11.7	19.3%	18.6%	11.6%	11.2%	28.0%	27.2%
Apparel Mfg.	4.0	11.2	32.1%	47.9%	24.9%	37.2%	38.3%	57.0%
Leather Mfg.	0.4	1.2	29.1%	43.3%	22.3%	33.3%	34.3%	50.9%
Wood Mfg.	0.3	2.0	39.9%	34.0%	28.2%	24.2%	52.2%	44.5%
MedInst	0.1	0.5	-11.0%	-13.9%	-2.2%	-2.9%	-12.5%	-15.9%
Other Mfg.	5.2	16.0	15.2%	21.8%	9.6%	13.9%	25.1%	36.3%
PP	4.1	0.6	15.9%	23.4%	11.6%	17.1%	19.7%	29.0%
Drugs Mfg.	2.1	0.7	-13.0%	-21.4%	-8.3%	-13.7%	-15.4%	-25.4%
Other chemicals	3.7	1.3	20.8%	32.9%	14.3%	22.7%	29.0%	45.7%
Nonmetallic	1.6	5.3	36.4%	39.2%	25.8%	27.8%	47.1%	50.8%
Metal products	2.7	5.5	17.5%	29.7%	12.7%	21.5%	22.9%	38.7%
Transport Eq.	3.1	1.0	29.0%	48.7%	24.2%	40.7%	33.2%	55.7%
Oth. machinery	2.0	2.6	26.5%	19.5%	22.8%	16.8%	32.3%	23.7%
Construction	14.5	75.2	30.9%	38.2%	21.9%	27.0%	39.9%	49.3%
Electricity	4.0	1.0	10.6%	18.1%	6.8%	11.6%	14.8%	25.2%
Gas	0.2	0.1	10.7%	15.2%	7.0%	10.0%	14.6%	20.7%
Water	0.7	0.2	11.6%	16.8%	7.2%	10.5%	16.2%	23.5%
Trade	23.2	48.5	28.1%	38.0%	20.7%	28.1%	36.1%	48.8%
Hotels	2.3	10.2	42.0%	65.7%	35.2%	55.3%	57.5%	90.0%
Rail transport	1.2	3.5	31.7%	37.2%	22.7%	26.7%	40.4%	47.4%
Land transport	5.8	13.2	30.9%	44.3%	22.7%	32.6%	40.2%	57.5%
Air transport	0.2	0.5	49.0%	56.6%	39.3%	45.5%	62.6%	72.3%
Water transport	0.2	0.5	31.6%	57.6%	19.6%	35.7%	37.3%	67.8%



<b>SAS</b>	1.5	3.2	27.9%	41.7%	21.5%	32.2%	34.6%	51.7%
<b>Storware</b>	0.1	0.2	22.3%	30.3%	16.0%	21.8%	28.8%	39.1%
<b>Comm</b>	2.3	1.4	14.6%	15.4%	9.1%	9.6%	20.4%	21.5%
<b>Banking</b>	11.0	6.4	10.3%	14.8%	4.4%	6.3%	16.3%	23.6%
<b>Real estate</b>	15.0	18.4	34.9%	61.9%	22.5%	40.0%	42.4%	75.1%
<b>Medical and health</b>	2.6	2.7	-9.8%	-13.8%	-8.6%	-11.9%	-9.9%	-14.0%
<b>Public admin.</b>	14.5	14.9	8.1%	10.8%	8.1%	10.8%	8.1%	10.8%
<b>CSP</b>	5.3	5.5	-50.7%	-69.6%	-46.9%	-64.2%	-53.7%	-73.9%
<b>Other services</b>	29.2	30.1	8.4%	17.4%	5.4%	11.2%	11.6%	24.1%

Source: KPMG in India's analysis 2020

Table A4 represents the results obtained from the COVID-19 impact tool constructed to measure the impact of COVID-19 on each sector of the economy in terms of income, and employment under various scenarios, in comparison with baseline values that were computed using IOT 2015-16.

**Table A5: Fall in GVA over baseline (NAS aggregated sectors, U-recovery scenario)**

<b>Sector</b>	<b>Baseline GVA FY2021 (INR trillion)</b>	<b>Fall in GVA (INR trillion)</b>	<b>% change over baseline GVA</b>
<b>Agriculture, forestry and fishing</b>	33.9	1.3	-3.9%
<b>Mining and quarrying</b>	4.0	1.1	-28.4%
<b>Manufacturing</b>	31.4	6.4	-20.2%
<b>Construction</b>	14.5	4.5	-30.9%
<b>Electricity, gas, water supply and other utility services</b>	5.0	0.5	-10.8%
<b>Trade, hotels, transport and communication, and services related to broadcasting</b>	36.8	10.6	-28.8%
<b>Financial , real estate and professional services</b>	28.6	6.1	-21.4%
<b>Public administration, defence and other services</b>	49.0	0.9	-1.9%

Source: KPMG in India's analysis 2020



**Table A6: Abbreviations used for sectors in the study**

<b>Sector abbreviation</b>	<b>Name of sector</b>
<b>Agri</b>	Agriculture
<b>Fishing</b>	Fishing and aquaculture
<b>Coal</b>	Coal
<b>Natural gas</b>	Natural gas
<b>Crude</b>	Crude oil
<b>MQ</b>	Mining and quarrying
<b>FBT/BVT</b>	Food , beverages & tobacco
<b>Apparel Mfg. / Textiles</b>	Textiles & readymade garments
<b>Leather Mfg. / LTH</b>	Leather & leather products
<b>Wood Mfg.</b>	Wood , wood products & furniture
<b>MedInst</b>	Medical instruments
<b>Other Mfg.</b>	Other manufacturing
<b>PP</b>	Petroleum products
<b>Drugs Mfg.</b>	Drugs manufacturing
<b>Other chemicals</b>	Other chemicals manufacturing
<b>Nonmetallic</b>	Nonmetallic mineral products
<b>Metal products</b>	Metal products
<b>Transport Eq.</b>	Transport equipment
<b>Oth. machinery</b>	Other machinery
<b>Construction</b>	Construction
<b>Electricity</b>	Electricity
<b>Gas</b>	Gas
<b>Water</b>	Water supply
<b>Trade</b>	Trade
<b>Hotels / HR</b>	Hotels & restaurants
<b>Rail transport</b>	Rail transport
<b>Land transport</b>	Land transport
<b>Air transport</b>	Air transport
<b>Water transport</b>	Water transport
<b>SAS</b>	Support & auxiliary transport activities
<b>Storware</b>	Storage and warehousing
<b>Comm</b>	Communication
<b>Banking</b>	Banking & financial services
<b>Real estate</b>	Real estate



<b>Medical and health</b>	Medical & healthcare services
<b>Public admin.</b>	Public administration
<b>CSP</b>	Community, social, & personal services
<b>Other services</b>	Other services

Source: KPMG in India's analysis 2020

## Acknowledgements

1. **Anish De**
2. **Dr. Eshita Gupta**
3. **Vikas Gaba**
4. **Preeti Sitaram**
5. **Sundaresh Raja**
6. **Suruchi Sawhaney**
7. **Malvika Mahesh**
8. **Balamurali Radhakrishnan**
9. **Dave Remedios**
10. **Anupriya Rajput**





## 10. References

Thinking ahead about the trade impact of COVID-19, Economics in the Time of COVID-19, Baldwin, R. and Tomiura, E., 2020.

Mitigating the COVID economic crisis: Act Fast and Do Whatever it Takes. Centre for Economic Policy Research, Baldwin, R.E. and di Mauro, W., 2020.

Estimates of output, income value added and employment multipliers for the Maltese economy (No. WP/03/2015). CBM Working Papers, Cassar, I.P., 2015.

COVID-19: Impact on the Indian economy. Indira Gandhi Institute of Development Research, Mumbai, Dev, S.M. and Sengupta, R., April 2020.

Input-Output based measures of interindustry linkages revisited-A Survey and Discussion. In 14th International Conference on Input-Output Techniques, Montreal, Canada. Drejer, I., October 2002

Input-output analysis and tourism impact studies. Annals of tourism research, pp.514-529, Fletcher, J.E., 1989.

Report on Employment in Informal Sector and Conditions of Informal Employment, Volume IV, 2013 14, Government of India, 2015

Measuring Productivity at the Industry Level – The India KLEMS Database, RBI website, September 2020

Breakdown of Business and Workers in India: Impact of Corona Virus. Koshle, H., Kaur, R. and Basista, R., 2020.

COVID-19– Assessment of Economic Impact on the Construction sector in India, KPMG in India's analysis, May 2020

Impact of COVID-19 on the Mining sector in India, KPMG in India's analysis, May 2020

India under COVID-19 lockdown. Lancet (London, England), 395(10233), p.1315, Lancet, T., 2020.

Level and pattern of consumer expenditure 2011-12, National Sample Survey Organization India, 2014

India's Employment Crisis: Rising Education Levels and Falling Non-agricultural Job Growth, Azim Premji University, Mehrotra, Santosh, and Jajati K. Parida, 2019.

Resilience versus robustness in global value chains: Some policy implications. COVID-19 and Trade Policy: Why Turning Inward Won't Work, pp.117-130, Miroudot, S., 2020.

National Accounts Statistics 2019, Ministry of Statistics and Program Implementation (MOSPI), India. Press releases, Public Information Bureau, India.

Supply Use Tables 2015-16, Ministry of Statistics and Program Implementation (MOSPI), India.

Electricity generation in India: Present state, future outlook and policy implications. Energies, 12(7), p.1361, Tiewsoh, L.S., Jirásek, J. and Sivek, M., 2019.

Input-output analysis of the Chinese construction sector. Construction Management and Economics, 23(9), pp.905-912, Wu,X. and Zhang, Z.,2005.

FISCAL MONITOR: Policies for the Recovery, IMF, October 2020

Fitch revises India GDP forecast for FY21 to -10.5% from -5% earlier, Business Standard, September 8, 2020

Summary of announcements : Aatma Nirbhar Bharat Abhiyaan, PRS Legislative Research, May 2020

Report on Employment in Informal Sector and Conditions of Informal Employment, Volume IV, 2013 14, Government of India, 2015

'Countries/IND' section, IMF website, Accessed in October 2020

Review: What is India's GDP growth projection by different agencies?, Factly, September 19, 2020



**KPMG**



**KPMG josh** *IT SHOWS*

**IN OUR ABILITY TO TRIUMPH OVER ANYTHING  
IN OUR SPIRIT OF UNDYING ENTHUSIASM  
OUR DRIVE TO ACHIEVE THE EXTRAORDINARY  
UNMOVED BY FEAR OR CONSTRAINT  
WE'RE DRIVEN BY JOSH AND IT SHOWS**

**THIS ADVERTISEMENT FEATURES KPMG INDIA EMPLOYEES**

# KPMG in India Contacts:

## **Elias George**

### **Partner & National Head**

Infrastructure, Government & Healthcare

**T:** +91 124 336 9033

**E:** eliasgeorge@kpmg.com

## **Anish De**

### **Partner & National Head**

Energy Natural Resources & Chemicals

**T:** +91 98104 53776

**E:** anishde@kpmg.com

## **Dr. Eshita Gupta**

### **Technical Director**

Infrastructure, Government & Healthcare-

Strategy and Transformations

**T:** +91 98115 34340

**E:** eshitagupta@kpmg.com

## **Preeti Sitaram**

### **Director**

Infrastructure, Government & Healthcare

**T:** +91 96633 24621

**E:** psitaram@kpmg.com

**home.kpmg/in**

**Follow us on:**

**home.kpmg/in/socialmedia**



**#KPMGjosh**

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

KPMG Assurance and Consulting Services LLP, Lodha Excelus, Apollo Mills Compound, NM Joshi Marg, Mahalaxmi, Mumbai - 400 011 Phone: +91 22 3989 6000, Fax: +91 22 3983 6000.

©2020 KPMG Assurance and Consulting Services LLP, an Indian Limited Liability Partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. All rights reserved.

KPMG (Registered) (a partnership firm with Registration No. BA- 62445) converted into KPMG Assurance and Consulting Services LLP (a Limited Liability partnership firm) with LLP Registration No. AAT-0367 with effect from July 23, 2020.

The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization.

This document is for e-communication only.

(048\_THL1120\_DGR\_AP\_RS)