August 2020

# Full Potential Revival and Growth

## Charting India's medium-term journey

pwc

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# Preface

A crisis gives us a perspective not afforded by the ordinary cadence of life. COVID-19 is a crisis of dramatic proportions for India, a shared experience of 1.35bn citizens who had to go into lockdown. This shock has impacted the health, social and economic landscape of India in a way that has not been experienced since the events surrounding the country's independence. A war in 1971, earthquakes and disease spread in Latur and Surat, cyclones that devasted coastal areas, and other national calamities cannot begin to compare with the impact COVID-19 has had on the nation.

This report not only highlights the scale of the crisis but also addresses challenges and opportunities for the medium term. Our research shows that beyond the immediate pain, there are opportunities that could bring long-term gains. The crisis has highlighted frictions that were slowing India down as a country. If these frictions are addressed, the nation can accelerate recovery and drive what we call "full potential revival" and growth. This report outlines key principles that can be used by the private and public sectors, as well as citizens, to help achieve growth together. By addressing these frictions, recognising the opportunities, increasing productivity, digitalising further — and doing all these things rapidly — India will realise the full potential of people, organisations, institutions and the country.

We have attempted to validate this approach through an analysis across nine key sectors: health and pharma; financial services; power and mining; consumer and retail; infrastructure and logistics; industrial products and automotive; and technology and education; government; and agriculture. We also analyzed the Micro, Small and Medium Enterprises (MSME) segment, since it will be key to employment revival. Our report suggests that in each of the sectors, we can repair, rethink and reconfigure for faster growth. This investigation was supported by a survey that spans the country, including non-metro districts, providing a timely 'pulse check' on the nation. We interviewed key sectoral leaders and thinkers both in India and globally to arrive at our conclusions.

Given that COVID-19 cases are still rising, the risks of economic recovery are many. They include likely bankruptcy of companies, layoffs and failures of smaller businesses in the short term. Divisions that exist in every institution could be exacerbated. There is a danger that India may revert to its previous state, squandering the opportunity for change that is inherent in any crisis. In the short term, businesses will have to leverage their balance sheets, digitise further, cut costs, find new resources and rearrange their supply chains. The government is already on a path to reforms, a trend that needs to be accelerated. However, the dangers of not taking action bold enough to put the economy on a path of revival and growth cannot be ignored. Put simply, with a positive frame of mind, India can reinvent the future.

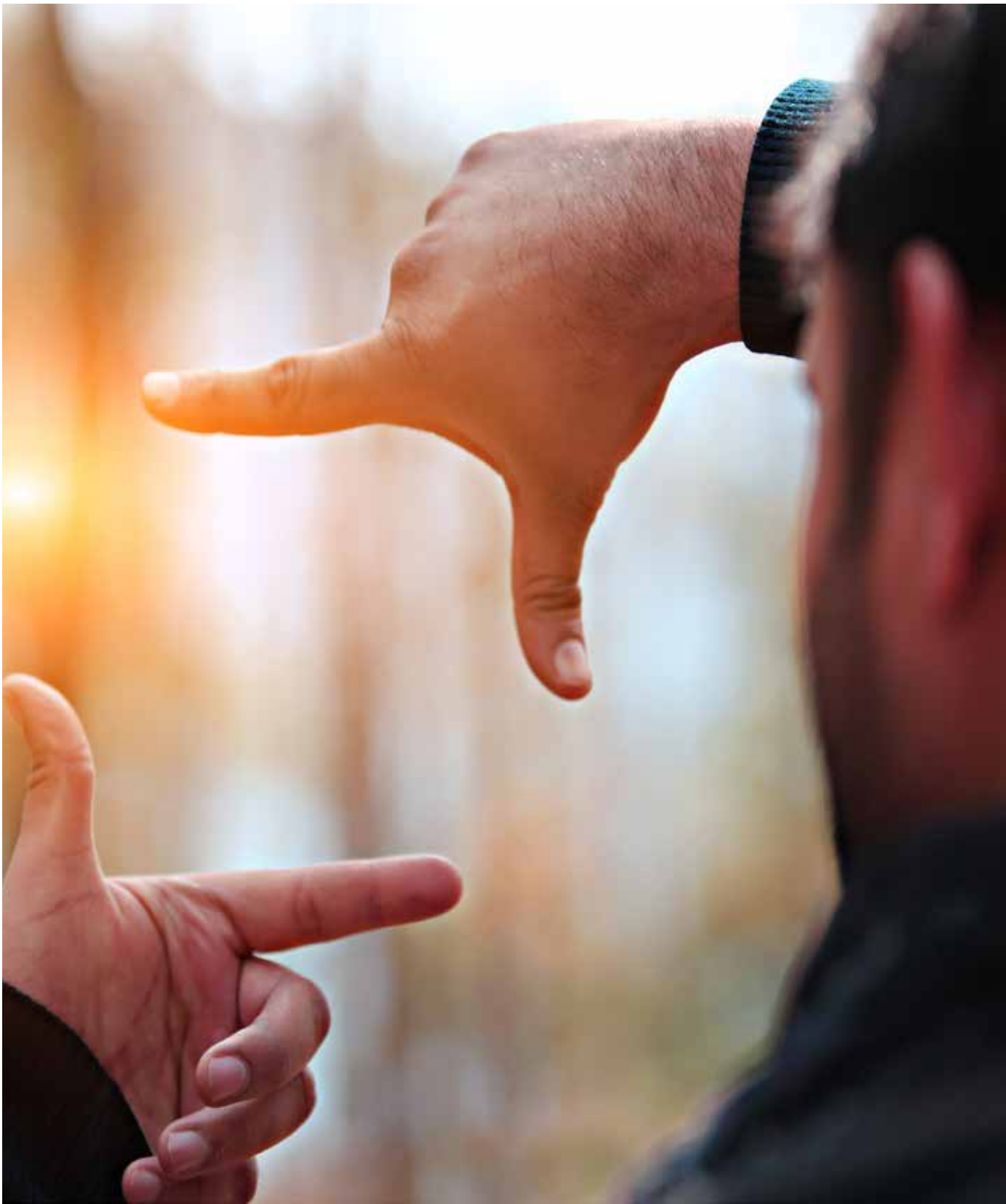
PwC India has already supported multiple sectors, the government and civil society in the first six months of the crisis. The firm has helped companies restart operations after their initial damage control. Our analysis and the framework of this report offer practical suggestions in each sector that can be used for revival and reinvention over a two-to-three year horizon. There will be many challenges on that journey, but also numerous opportunities. PwC, its 450 partners and executive directors, and its 15,000 staff in India are ready and willing to play a role in supporting that full potential revival and growth.

**Shyamal Mukherjee**
Chairman
PwC India

**Sanjay Tolia**
Markets Leader
PwC India

**Shashank Tripathi**
Govt. Strategy & Transf. Leader
PwC India

# Executive summary



## “Full-potential mindset”

Hidden possibilities in an individual, company, institution or a country not understood before. Opportunities brought to light through a new event, shock or sudden change in circumstances. A perspective that is experienced together by different stakeholders, creating a common vision driving higher outcomes for all. A thought process which recognises immediate challenges but uses this to unite all stakeholders. A mindset which drives urgent concerted and rapid action, creating revival and growth in an individual, organisation or country. An approach that brings together diverse actors by an ambition unlikely to be fulfilled by each alone. A common mission that creates a pool of energy, leading to revival and reinvention.

The COVID-19 crisis has put the world and India to the severest test in a generation. It has created widespread uncertainty on health, social and economic fronts, and is a shock experienced by all the country’s 1.35 billion citizens. The pandemic has widened fissures in the global political and economic order, which was already reeling under trade wars. The social and economic impact of this health crisis will be deep.

The Indian economy is now entering its first recession since 1979. Every citizen, young or old, rich or poor, from the north, south, east or west, this time, experienced the disruption first-hand through a national lockdown. India experienced a major balance of payment crisis 30 years back, which led to significant economic reforms. This shock is much more pervasive and is a shared experience that has triggered deep introspection within citizens, organisations and governments in a manner unprecedented in recent history.

Our report is a point of view for revival and growth arrived at by interviews with business, public sector and citizen leaders, sectoral analysis, and a country-wide survey taking a three-year horizon. It is not a prediction of that future, but outlines “principles” for revival and growth in organisations, sectors and the country. It is the starting point of a conversation that takes a medium-term view.

As our investigation proceeded, a more hopeful story emerged.

- Across all segments, sectors and geographies, there is a realisation that this crisis has set us back, but also highlighted frictions, which if we can overcome, can provide rapid revival and subsequent growth
- By addressing these frictions - organisations, sectors and the economy will be able to drive revival faster, make the economy more inclusive and achieve a higher economic potential in the medium term
- A ‘full potential mindset’ will require an execution approach that collaborates across the organisation and society, using technology, rethinking and reconfiguring for long term success

India, an argumentative democracy, is often critiqued for bringing about incremental change rather than something more immediately transformative. Our research shows that COVID-19 has the potential to create a transformative moment by highlighting frictions, seizing opportunities and fostering collaboration. With this positive but realistic attitude and a common agenda, organisations can drive growth with a full-potential mindset, ensuring the economy is even more productive than before. This will drive organisational growth while creating an economy that is inclusive, stable, globally connected and environmentally sound.

Our report is aimed at starting a conversation in different sectors, and with different stakeholders to execute on the key findings to realise India’s full-potential ambition.

## Uncertain health situation

Containing the virus is an important first step for economic revival. India, with 18% of global population has 9% of Covid cases and 5% of global fatalities at the end of July. The recovery rate in India is 64% - but the inflection curve has not flattened. Cases remain high in urban areas: 100 urban or semi-urban districts out of 730 have a 77% contagion load.

- An early and decisive lockdown enabled India to ramp up its health care infrastructure – increasing the rate of testing per day 30-fold and hospital beds were increased by 50% since the crisis took hold.

- However, reverse migration of workers once lockdown opened led to the virus reaching smaller towns and districts.

An early vaccine discovery, in a country with a strong vaccine production and distribution infrastructure, is a source of confidence, but delivering it to over a billion people will take time. Until that happens, health recovery will rest on testing and tracing at scale combined with social communication, awareness and collaboration.

## Medium term economic situation

COVID-19 is an exogeneous shock to the economy, impacting both aggregate demand and supply simultaneously. With gradual unlocking footfalls are back to 30% of prep-pandemic levels in urban areas, and demand and supply constraints are easing. But consumer confidence is low, and supply constraints will continue. Geopolitical tensions with neighbours are amplifying economic strains, but as our survey indicates, also uniting the country.

- Government stimulus of INR 20tn and reforms under Atmanirbhar Bharat targeted the lower and middle strata. The focus on micro, small and medium enterprises (MSMEs), food supply and the Direct Benefit Transfer (DBT) are addressing the stress on employment, migration and create a safety net for the vulnerable, with technology a key facilitator to target and transfer funds.

- Domestic expenditure constitutes 60% of the Indian GDP. Across the country's 730 districts, particularly within the lower strata, discretionary spend is low at 30% on average. Stimulus and government programmes have targeted this relatively poor segment, which has a lower contagion density. Metropolitan and urban districts, where discretionary spend is higher at 45% are in locations with high contagion load. This indicates that sources of demand revival will be different in the short-to-medium term. Both rural and urban segments will revive, but at different speeds and with different drivers.

- Overcapacity in industrial production was accumulating over the past two years with the IIP (Index of Industrial Production) dipping from 132 to 129 and capacity utilisation shrinking from 76% to 69% over Q3 FY 19-Q3 FY20. This overhang will limit private sector investments until demand rebounds.

- Government spending, on infrastructure, including health, is expected to help pump prime the economy beyond the stimulus. We estimate that government spending will rise from the current 11.8% GDP to 5-7% extra, tapering back in FY 23 and beyond.

- As imports and exports shrink it is possible our trade deficit turns positive in FY 22, but only temporarily. International recovery will have a bearing on Indian recovery. India has an opportunity to reduce its trade deficit, while offering global organisations an opportunity to relocate production bases to India.

- Unemployment has recovered from the high of 24% but is still untenable at 11%. Employment recovery will be a critical measure of success in the revival and growth phase.

It is difficult to offer a prediction for when recovery will be achieved. A PwC CXO survey in July 2020, polling 225 CXOs, shows that 82 % expect the economy to be back to pre-pandemic levels by June 2021, but much will depend on when the contagion is contained in India.

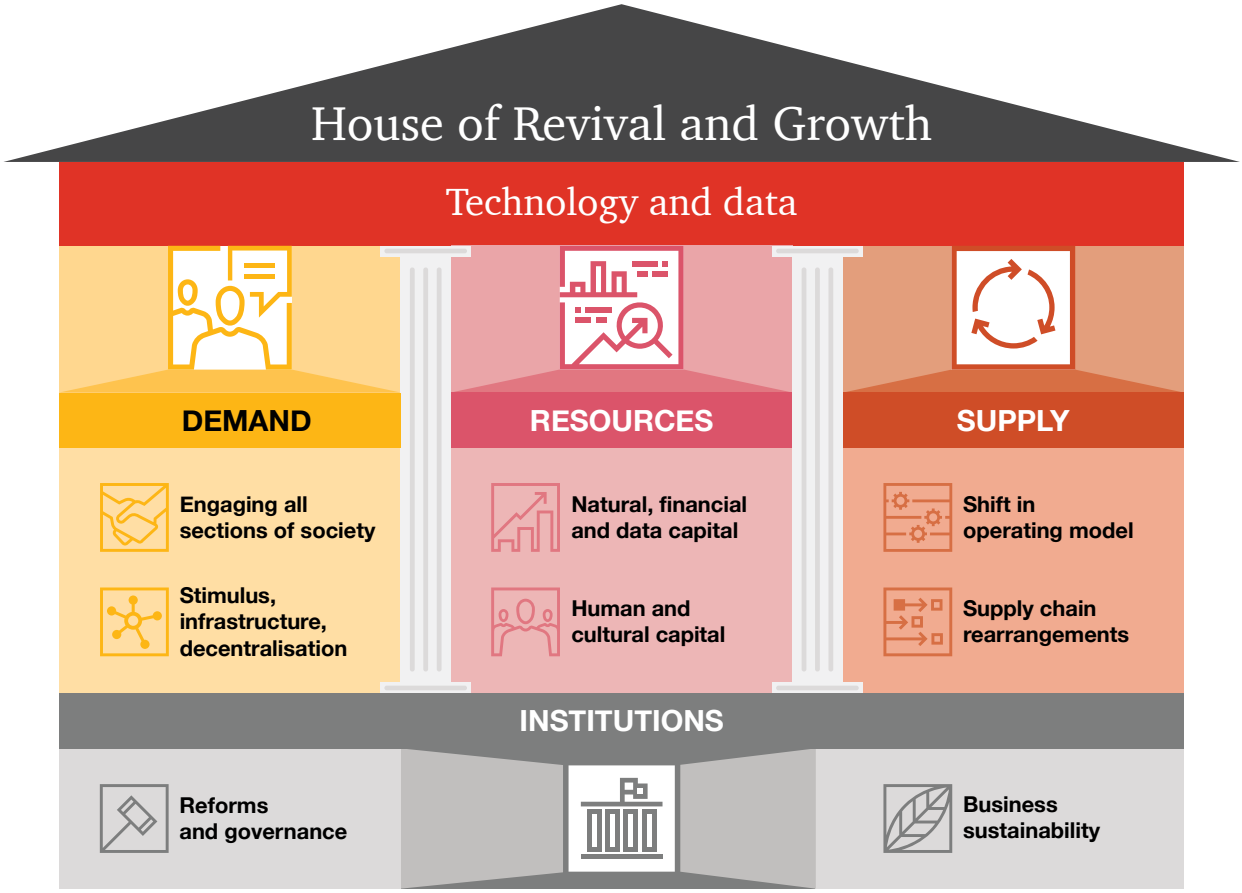
## Key pillars for revival and growth

Over the past two decades a broad consensus has emerged in India that a well-regulated market economy is the most productive framework for growth. This principle, applied in the revival and growth phase, should lead to a high growth, inclusive and stable economy that is environmentally sustainable. Inclusion will be as critical as growth.

We highlight eight pillars of recovery and 27 underlying themes which constitute our "house of revival and growth".

- Driving full demand by "Engaging all sections" and "Stimulus, decentralisation and infrastructure", with six themes.
- Reviving full supply through "Shift in operating model" and "Supply chain rearrangement", with seven themes, these will also provide resilience .
- Full and new resources through "Natural, financial and data", as well as "Human and cultural" resources, consisting of eight themes, will provide fuel for faster revival and subsequent growth.
- Responsive institutions covered as "Reforms and governance" and "Business sustainability" with six themes should guide the policy framework and engender trust in society.
- Data and digital technology are important components that support these pillars, giving recovery momentum and creating resilience.

As we re-construct our economy we must re-align our organisations to a new architecture and in doing so remove frictions that have hampered historical growth. This should aim at rethinking both immediate recovery and reconfiguring for higher productive capacity.



Consumer and retail

Healthcare and pharmaceuticals

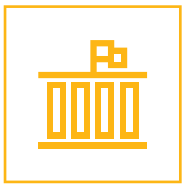
Logistics and infrastructure

Power and mining

Automotive and industrial products

Financial services

Technology and education



Government

Agriculture

MSME segment

## Sector specific implications across nine key sectors and MSME segment

Revival and growth will occur in nine key sectors and MSME segment that make up 75% of our pre-pandemic GDP. In addition, we analysed MSMEs as a sector which constitute 30% of employment spread across the above sectors.

**The consumer and retail, health and pharma, automotive and industrial products (IP) sectors** will be influenced by similar themes in consumer demand shifts.

- New products and services require an understanding of increasing value consciousness, focus on wellness, safety and health. For instance, one pharma company that produces generic medicine is looking at opportunities for wellness services.
- An additional growth vector is decentralisation of demand. organisations are realizing that in the short to medium term, semi-urban and rural districts will require focus.
- On the supply side, digital operating models and shifts in global and local supply chains will influence these sectors. Both are needed to drive international connects and local resilience.

**Power and mining, infrastructure and logistics, information technology and education** provide the infrastructure for growth, and are dependent on natural and human resources use.

- By opening these sectors and improving data flows, demand and supply would be better co-ordinated. Power and Infrastructure sectors can benefit from data platforms on customer front end, and back ends.
- Infrastructure requires capital resources to be released and mitigate risks to bring private investments back with better data and physical flows. Capital sourcing requires careful coordination with financial services sector.
- IT, where India has become a global contender is now considering the domestic market where use of vernacular, growing national platforms and widespread digital education will drive adoption and growth.

**Financial services and government** are drivers of employment, productivity and release resources - capital, land and labour - that are currently underutilised.

- A strong financial service sector is needed to ensure robust capital flows in the economy. This sector was slowing down before the crisis with non-performing assets (NPAs) growing. By cleaning its books, implementing recently instituted bankruptcy proceedings, and recapitalizing, this flow can be revived.
- Government sector is critical for enabling revival and growth. Ease of doing business across the country will unlock productivity. Land, labour reforms, and national platforms have emerged as key enablers. Institutional reforms, including capacity-building in the state are important for growth and productivity boost in all sectors.

**Agriculture** will play a key role impacting millions of lives and leading enabling inclusive growth:

- Agriculture has been liberalised through Atmanirbhar Bharat. It answers a key national aim - doubling farmers income and provides employment to over 260m Indians. With migrant labour this load may increase and will require the nation's attention.

**The MSME segment** was singled out for support by the government in the first stimulus package, as the largest employer after agriculture. This segment is largely unorganised with only 13m out of a total 63m MSMEs registered. They can benefit from data use to identify and create ecosystems to support them.

**Convergence between sectors** is taking place, in a resource scarce environment, and increasing flow of data. For example, the healthcare and pharma sector realised that FMCG channels offer a ready means of widening distribution for PPE and masks. Government has realised that financial services, IT and Telcom, FMCG can provide relevant data to support MSMEs. Finally, with global supply chains being disrupted, each sector has shown an interest in R&D and innovation. Frugal innovation, the process of reducing the complexity and cost of a product, is on its way to maturity in India, can make Indian products and services relevant globally.

## Organisational value propositions

Ten value propositions should be considered by boards, chief executives (CEOs) and leaders to provide a roadmap and a framework for revival and growth. They will have to be modified for sectoral requirements and tailored to organisations' current and future capabilities and focus.

**Value propositions related to faster demand and a focused portfolio.** Rapid and agile demand sensing, business models for a decentralised economy and rebalancing the product or service portfolio will provide organisations a demand boost and focus essential for revival and value accretive growth.

- Rapid and agile demand sensing allows businesses to look at shifts; much like zero-based costing, it seeks to pick up segments and drivers catalysed by COVID-19.

- Business models for a decentralised economy will guide businesses to open new channels, price points, propositions and supply mechanism to cater to the demand from outside urban areas.

- Rebalancing the product and service portfolio will bring focus and put available resources for profitable growth by reducing the number of products and services; potentially divesting assets that are non-core.

**Value propositions crucial for containing cost, creating agility and resilience.** Fit-for-future cost structures, comprehensive digital transformation and reorienting global and local supply chains will be required across sectors:

- A fit-for-future cost structure targets excess costs but also retains those capabilities and assets that are important for the future and does this in a manner that is considerate to people.

- Comprehensive digital transformation, both at the customer front end, and within the organisation had already started taking place, there are more opportunities emerging for creating agility by a comprehensive approach and a change process that secures behavioural change.

- Reorienting supply chains, both global and local is designed for resilience so that the external supplier base remains viable as the economy shifts to a revival and then a growth phase.

**Value propositions related to resource amplification, retention and conservation.** Upskilling, reskilling and employment, gaining insights from data and capital for survival and revival focus on the resources that will drive revival and growth.

- Upskilling, re-skilled and employment, while seemingly counter to the cost focus, is important for the medium-term revival and growth phase with shifts in the type and location of work.

- Gaining insights from data is a crucial capability, and drives better demand generation, more efficiency and agility and finally taking parts in the wider economy by linking to other platforms.

- Capital for survival and revival will be needed both for immediate cash issues and thereafter to foster growth. Balance sheet management of organisation and better asset management is required for this.

A broader value proposition, what we call a “triangle of trust” between an enterprise, government and citizens is also critical.

- Creating a shared vision within the organisation and a shared vision across the country is important for generating trust. A realistic but well thought-through revival and growth plan can itself be a starting point.

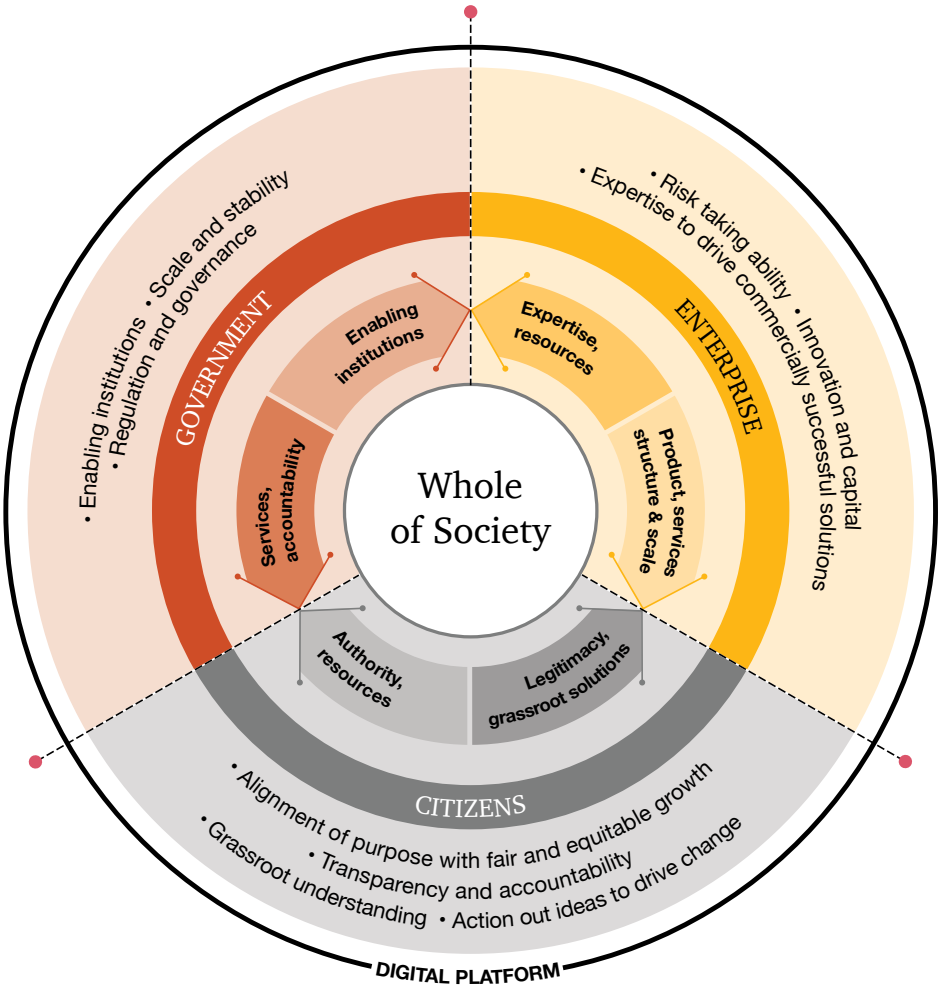
- Across organisations and enterprises, government and citizens require understanding and engaging with our “two-tone” economy: one part that is organised, English speaking, well paid, and a second part that is unorganised, vernacular but employing most Indians. This will happen if we deepen and widen the economy, a strategic vector at the core of this report.

## Whole-of-society execution approach

Our research shows that in a resource constrained, uncertain environment collaborative approaches within and between organisations using digital methods should be considered. We call this “whole-of-organisation/ society” approach using platforms for execution. Unless the whole economy revives, individual organisations will simply not have demand, supply, resources and institutions restored for growth. A sentiment of “we are in this together” has been created and can be harnessed.

Revival and growth can then be executed keeping in mind.

- Organisations should start with a whole-of-organisation approach behind their revival mission. This does not mean predicting the future, but outlining and communicating principles with clarity and empathy. It also means fighting the urge to withdraw within department, functional or geographic silos.



- The core of this change is a mindset which will empower teams. Executing against a revival story, and reconfiguring for growth also means creating teams able to manage twin strategies, operating with different time horizons and requiring different resources and energies.

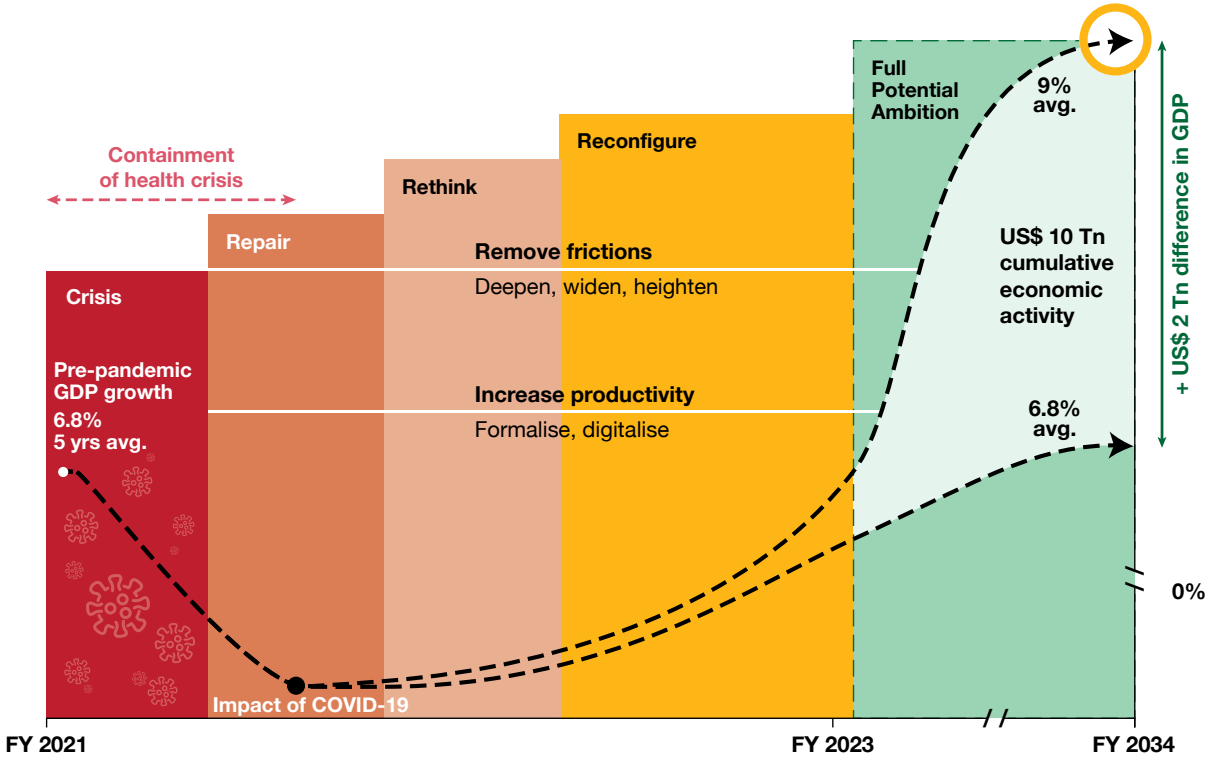
- Data is a key resource in sharing capabilities, customer and operational insights. It also allows collaboration outside the organisation using platform behaviour. For example, operations managers need to consider suppliers, marketing teams create customer ecosystems; using digital technology.

- Whole-of-society approach using platforms was already being used before the pandemic and was soft tested during the health crisis when citizens, enterprise and government came together to fight the virus.

With widespread involvement of enterprise and citizens in the revival and growth effort, the fiscal load of the government can also be reduced.

## Full-potential ambition

By removing frictions exposed by this crisis and deepening, widening, heightening, digitalising and formalising organisations and the country, we can bring the economy back on an even keel. But the second ambition is to realise the full potential that has been revealed during this crisis. If $2.9tn in the economic potential of the economy (FY 20) as the base, then returning to that base is only one ambition. A second, more important task is to unlock our full potential so that we grow faster thereafter.



## Revival

Within organisations, sectors and across sectors we can understand key themes, focus on those that will revive the economy and come out faster from the crisis. This applies to all nine sectors examined in this report, comprising 75% of that GDP. The economy can grow at 6.8% post recovery which represents the growth potential over the 5 years before COVID-19.

## Full-potential revival and growth

*Future of India – the Winning Leap*, a report published by PwC India in 2014, set out three scenarios for India's growth over a 20-year period, ending in 2034. They were 6.6 % growth through rapid human capital and some infrastructure spend, 7% growth with further infrastructure build and a 9% growth trajectory with significant additional productivity improvements. Over the past five years the average growth of the economy has been 6.8% and has broadly tracked scenario 1 and 2.

- During the revival phase, by unlocking frictions in organisations, sectors and the nation as a whole, can additional economic potential be created? We call this 'full potential ambition' signifying greater volume and higher productivity which can achieve the 9% GDP or higher scenario.
- Over the past five years investments in infrastructure, roads and power, reforms like GST have taken place resulting in the growth accelerating from 5.2% pre 2014 to 6.8% which is in between scenario 1 and 2 projected in our previous report
- In the medium term revival and growth phase we can create greater volume of economic activity by deepening, widening and heightening the economy. We can also increase productivity by digitalising and formalising the economy
- Ten vectors that can provide guidance on how the economic potential can be enhanced have been highlighted in the report. These range from investing in physical infrastructure, MSME ecosystem creation, democratisation of learning just to name three.

The prize of a full potential ambition is significant. If we can increase our average growth rate to 9% from the per-COVID-19 5 year average of 6.8%, and by deepening and widening our economy make the growth more inclusive, we can create 3 additional India's with a cumulative additional GDP of US$ 10Tn, in a decade post recovery. Starting with the 75th anniversary of Independence we can lay the foundations of a bigger, more prosperous and inclusive nation.

## Reinventing the future

Executing on the strategy outlined in this report will require careful planning and intense execution by every organisation - and as a country in four broad phases – repair, rethink, reconfigure and report:

- We see the first 100 days as being important in re-thinking the revival, and the subsequent time in reconfiguring for growth. Some organisations may not make it, and they will be required to restart. A final stage is reporting on progress to stakeholders, celebrating success on the way.

- Organisations should look at two types of action – one related to volume of economic activity, which can be achieved by deepening, widening and heightening the organisation and the other related to improvements in productivity by formalising and digitalising

- A decentralised structure that is able to deal with local situations, rather than a centralised implementation structure is best suited for an agile and principles based response. Leaders will both be tested and new leaders created as responsibility gets devolved.

- Enterprises, government and citizens can play a complementary role. New platforms for collaboration and enablement need to be built rapidly, and trust must be engineered. This is not just an opportunity to revive and growth, we can re-invent our future.

Re-inventing the future is an ambition that may seem brave at this juncture. But if there is one country that can do this it is surely India. Before the crisis, we were a stable economy, boasting a positive demography and a well-tested polity. An unprecedented, exogeneous shock has created a health, social and economic crisis. But it is also the starting arc for reinvention. We should remind ourselves that many turning points in our history have seen similar brave collaborations. And as economists continue to remind us, revival and growth starts with a positive psyche that triggers action. We call this full-potential mindset.

Even if recovery is delayed as the pandemic takes more time to get under control, or if there are further geopolitical tensions, we remain confident that revival and subsequent growth will take place within the next three years. Keeping a full-potential mindset, collaborating within and across organisations using digital technology we have an opportunity to not only come out of this crisis but realise our hidden, full potential.

This report compiled on 15th August and launched in our Independence Day week, is a small contribution to that mission.

Chapter 1

# Health and economic challenges

Life must be understood backward.
But it must be lived forward.

– Søren Kierkegaard

## A virus that has impacted everyone

India, which has 18% of the global population[1], accounted for 9% of global COVID-19 cases and 5% of total deaths[2]. India has a lower penetration of COVID-19 cases (total cases per million population) than the other top ten countries by number of cases.

In India, nine states/union territories (Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Uttar Pradesh, West Bengal, Gujarat, Delhi, Telangana) constituting 57%[3] of the Indian population account for 81% of the total COVID-19 cases[4]. In a total of 730 districts, 100 districts account for about 77% of total cases[5]. These districts are largely near key metropolitan hubs, state capitals and urban agglomerations. India witnessed a migrant exodus from these cities towards the hinterland during April and May 2020. Workers migrated mainly from the West and South to the North and East. Uttar Pradesh, Bihar, Rajasthan, Jharkhand, Odisha and West Bengal, primarily, constituted this back flow. Despite this migration, COVID-19 cases are largely confined to the top tier districts, indicating that India's hinterland, at the time of writing, has been relatively insulated from this crisis.

## Diverse containment strategies

Most countries were underprepared to handle the pandemic. Countries followed different strategies in response, based on the levers of containment, testing and tracing. India resorted to an immediate lockdown of the entire 1.35bn population, lasting more than six weeks, and ramped up testing and health infrastructure. Other countries, such as South Korea, took a selective lockdown approach with effective testing and technology backed tracing

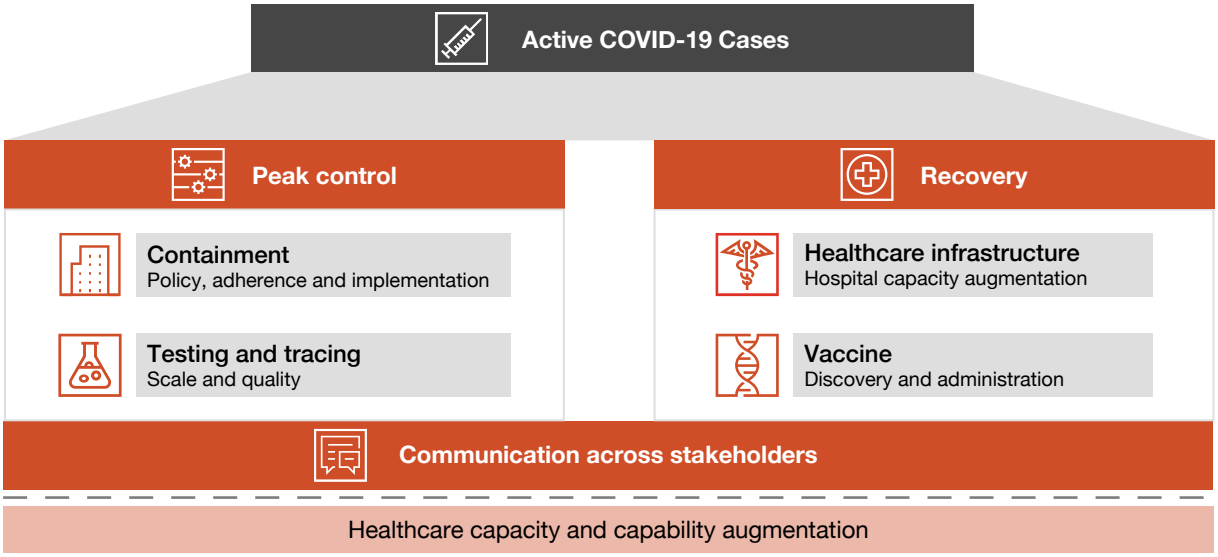
### Health management framework

COVID-19 management can be divided into four categories of ways to manage the peak and create a path to recovery (Figure 1.1). A health and community response also require effective communication so that prevention techniques can be communicated, and fear or panic is controlled.

### Lockdown helped India ramp up healthcare infrastructure

Globally, countries increased the strictness of lockdown gradually and enforced a stringent lockdown spanning 1.5 to 3 months around the peak number of COVID-19 cases (Figure 1.2). India initiated a rigorous nationwide lockdown early, on March 24, and transitioned to a gradual easing — a process that is still unfolding. According to government data, 1.4m–2.9m COVID-19 cases and 37,000–71,000 deaths were likely averted through the lockdown[6]. Although India was able to ramp up its healthcare infrastructure, such as testing kits and personal protective equipment, during the stringent lockdown, the lockdown adversely affected economic activity. Today, India finds itself striking a careful balance between the need to ease the physical movement of goods and services and the need to control the virus. Most states are using technology to selectively unlock areas while dynamically managing the movement of people through those areas.

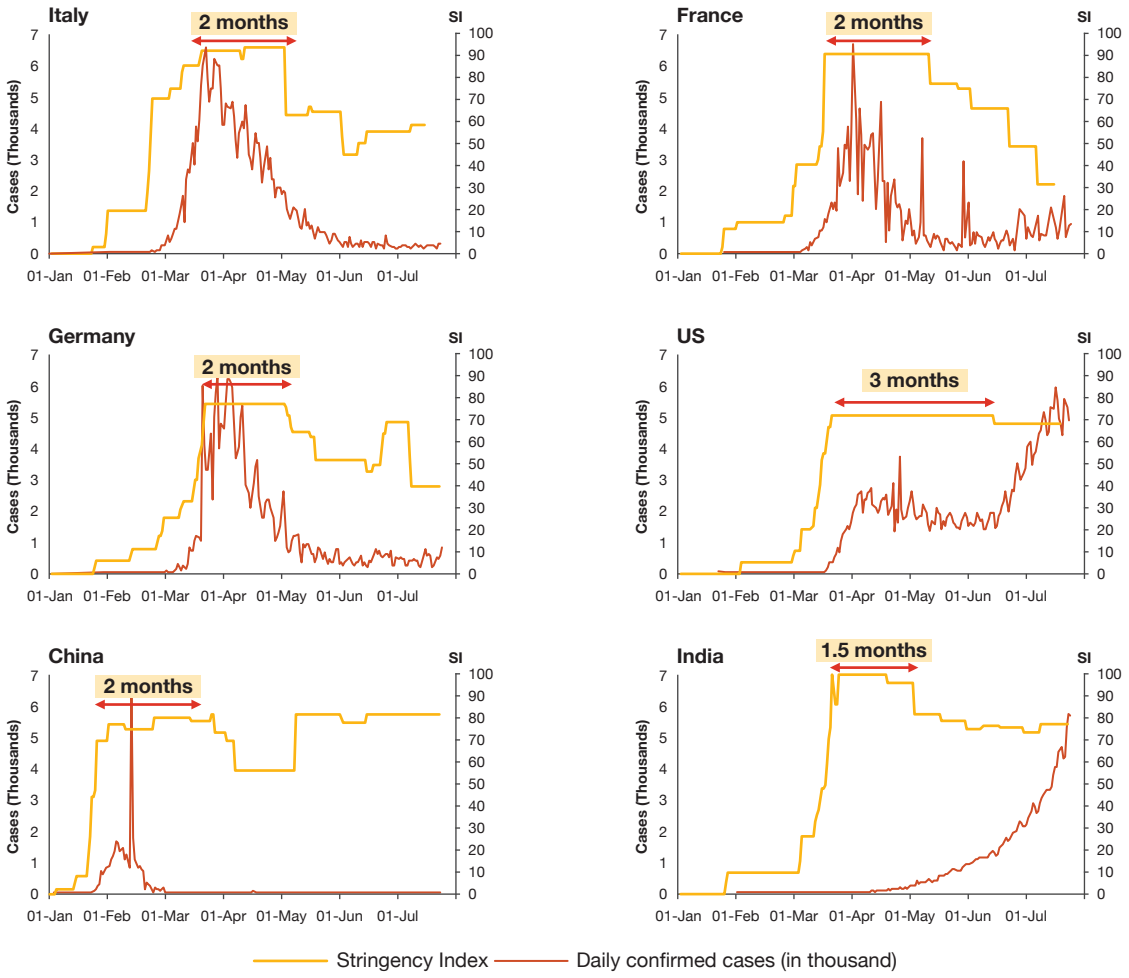
**Figure 1.1: COVID-19 management framework**




Source: PwC analysis

All the numbers regarding health scenario, in this section have been updated as on 25th July 2020

## Figure 1.2: Stringency index (SI) and daily new cases over time[a]




Source: Oxford University, Ourworldindata.org

### Ramping up testing

India was able to ramp up its testing infrastructure and increase testing from 12,000 up to approximately 350,000[7] tests per day within four months. This was a demonstration of a collaborative approach between private players, government bodies and citizens. RT-PCR (reverse transcription polymerase chain reaction) kits, swabs, and PPE were manufactured indigenously by private players.

State governments ordered high-throughput testing machines for testing in district hospitals. The iGOT platform — an online digital learning platform of the Indian government — was leveraged to train people within both government and civil society. However, India has still been able to test only 1.5% of its total population in the top 100 districts by active COVID-19 cases (Figure 1.3).

### Ramping up healthcare infrastructure

This pandemic has overwhelmed countries with better healthcare infrastructure, resulting in high fatality rates in countries such as the US and UK (Figure 1.4). Taking advantage of the lockdown, health infrastructure in India was ramped up significantly in a short time. Within 45 days[8], the number of care centres available for tackling moderate cases of COVID-19 care and health centres[b] was increased by 300%, to 798,000.

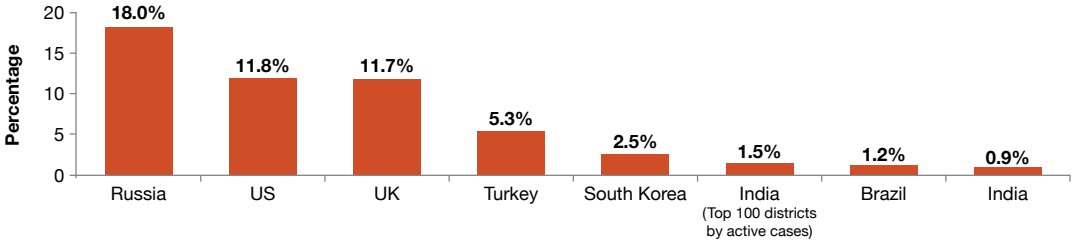
For severe cases, non-ICU (intensive care unit) beds increased by 47%, to 159,000, and ICU beds increased by 45%, to 32,000[9]. However, India has only 8.5 doctors per 10,000 population[10], compared to a global average of 19.3[c]. Karnataka Medical Council estimates that hospitals are now facing a 40–50% shortage of doctors, nurses and technical staff[11].

[a] Government Stringency Index is calculated using- school, workplace and public transport closures, cancellation of public events, restrictions on public gatherings, stay-at-home requirements, public information campaigns, restrictions on internal movements, and international travel controls (Source: Oxford COVID-19 Government Response Tracker, Blavatnik School of Government)

[b] Care centre: Makeshift facilities for mild & suspected cases; Health centre: Hospitals for moderate cases

[c] Average of 61 countries, medical doctors per 10,000 population published by WHO in 2018

## Figure 1.3: Cumulative testing as % of population[d]




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2.43 | 2.53 | 1.97 | 1.20 | 0.35 | - | - | 0.26 | **Daily testing per thousand population** |
| 146 | 331 | 68 | 84 | 51 | 430 | 213 | 1380 | **Population (in million)** |

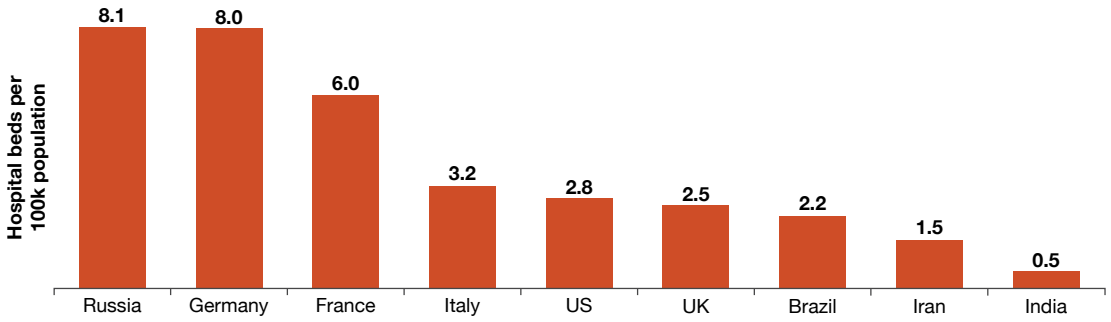
Source: Covidindia, Ourworldindata

This signals a call to action for transforming India's healthcare infrastructure, as is explored in the health and pharma sector analyses.

### Ongoing search for a vaccine

Herd immunity is developed when a majority of the population is vaccinated and develops immunity to a disease. On an average, vaccine development takes more than a decade[e]. However, a global pandemic of this magnitude has galvanised the global vaccine development process. Multiple approaches are being taken simultaneously across the globe to develop various vaccines including RNA (ribonucleic acid) - and DNA (deoxyribonucleic acid)-based vaccines. Of 163 ongoing vaccine development projects, four are in phase III clinical trials[12]. A first dose of vaccine is likely to be available in an estimated six to nine months, but this time frame cannot be guaranteed.

## Figure 1.4: Hospital beds per 100,000 population[f]




| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **HAQ** | 61.4 | 73.1 | 74.3 | 76.2 | 73.7 | 74.3 | 50.1 | 54.6 | 30.7 |
| **Death per million pop.** | 89 | 109 | 463 | 580 | 440 | 673 | 401 | 179 | 23 |
| **Fatality** | 1.6% | 4.4% | 16.7% | 14.3% | 3.5% | 15.3% | 3.6% | 5.3% | 2.3% |

Source: Ourworldindata.org, Healthdata.org

[d] Values are taken for total testing done after 137 days from the 50th COVID-19 case for each country. Daily testing per thousand population – maximum testing till date has been taken
[e] As an example, vaccine development time for viral diseases — varicella: 28 years, rotavirus: 15 years
[f] HAQ: Health Access and Quality Index 2015; Fatality: Total deaths/total COVID-19 cases

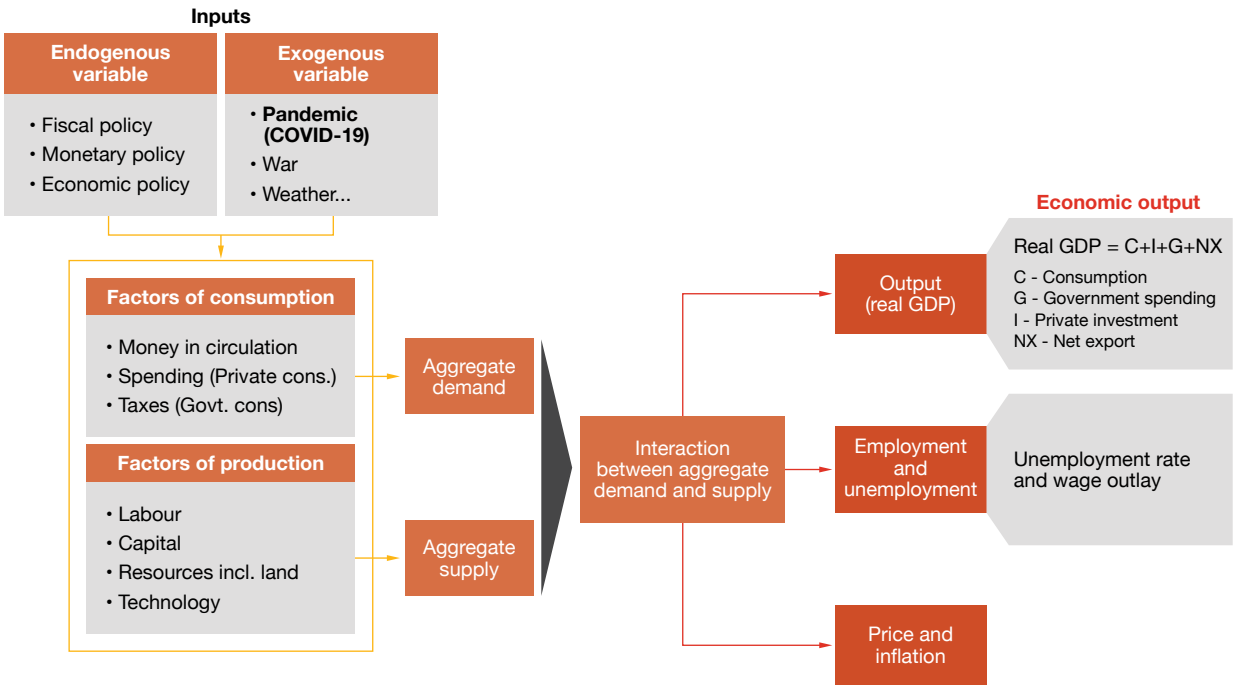
## A dynamic health situation

With more than 5.7m[13] active COVID-19 cases globally, resurging cases and re-imposition of lockdowns, the health situation both in India and abroad is volatile. Although testing and tracing will continue with the use of digital applications such as Aarogya Setu, an Indian app used for contact tracing, a return to normalcy can be expected only with the deployment of a vaccine. This uncertainty will continue to impact economic recovery, which will require a scenario-based approach to economic planning.

## Economic impact of COVID-19

The exogenous supply and demand shock due to the COVID-19 pandemic is likely to cause a recession for the first time since 1979. It has affected the country's aggregate supply due to lockdown measures, worker migration and disrupted supply chains. It has also impacted aggregate demand due to loss in spending ability. The impact of this shock will have to be measured across consumption, government spending, private investment, net exports, unemployment, prices and inflation (Figure 1.5).

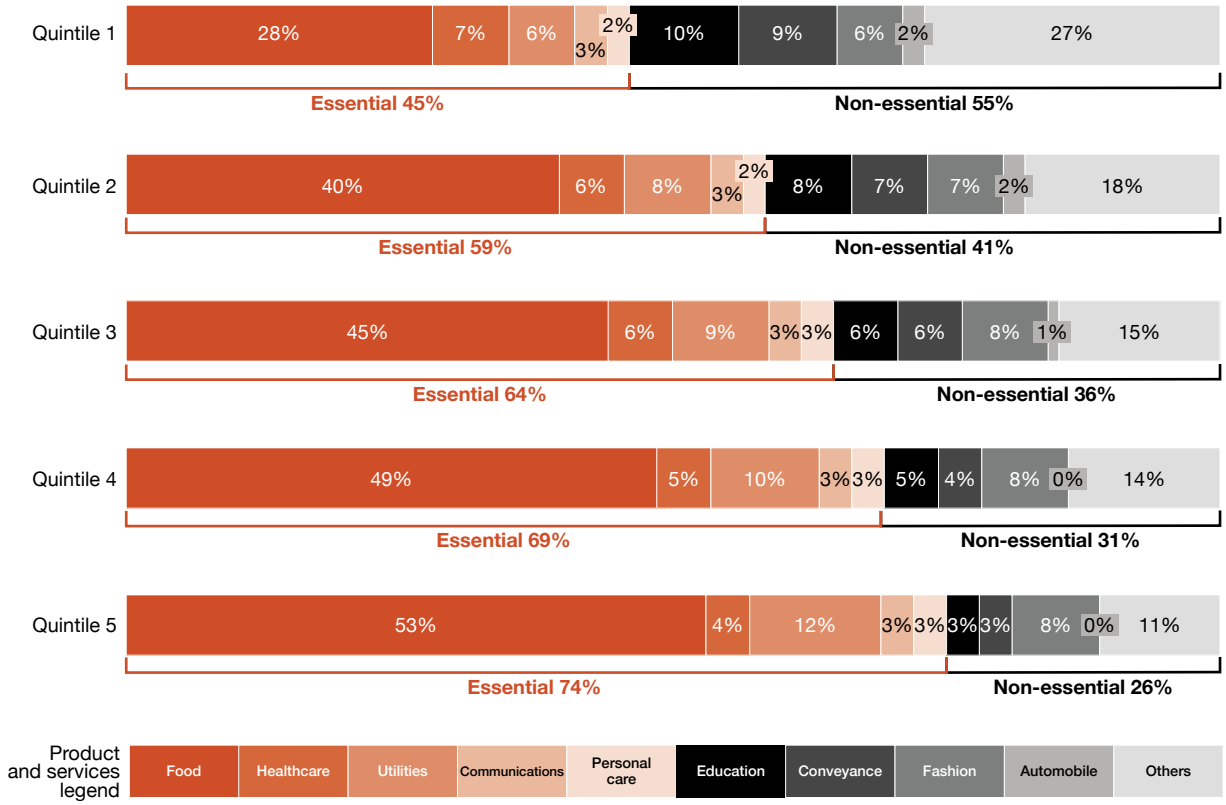
### Figure 1.5: Short-run economic fluctuation model




**Aggregate demand and aggregate supply can explain the impact of short-run fluctuations in the economy**

Source: PwC analysis

**Figure 1.6: Household share of spend across products and services by consumption quintile - Urban**




Source: NSS Survey no. 68

## Domestic expenditure to remain subdued in FY21, may recover by FY22

Domestic expenditure contributes a significant share of India's GDP, at 60%[14]. The top consumption quintile[g] spends 45% of their total expenditure on essentials. This proportion increases in subsequent quintiles; the last quintile spends 74% of their total expenditure on essential items[15] (Figure 1.6).

COVID-19 is most virulent in or near urban areas. Traffic in shopping centres and workplaces dropped by more than 75% and 60% in April'20 as compared to the baseline[h], respectively[16], across India. Retail shops selling non-essential products, shopping centres and malls were closed. Sale of only essential products and services was allowed by the government. This naturally had a severe impact on the consumption of discretionary products in upper consumption quintiles.

Cutbacks by consumers across the board were evident in a PwC COVID-19 consumer survey (June 2020)[17], with at least 75% of respondents saying that they have postponed discretionary purchases to the next 12-18 months. A majority, 56%, cited the uncertain economic outlook as their reason for cutting back; 34% cited reduced income.

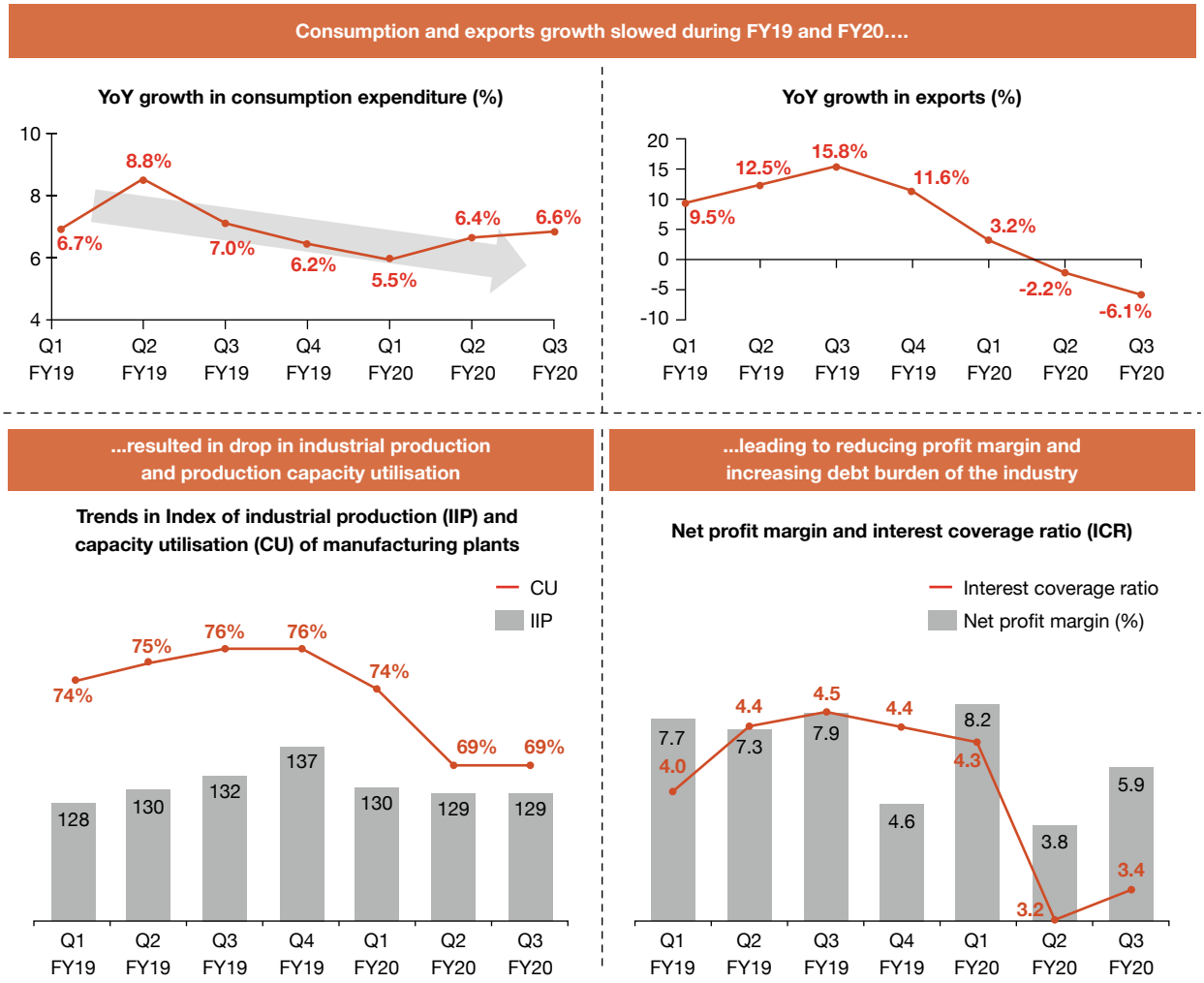
However, the survey also revealed an undercurrent of optimism with respect to a medium-term recovery. Half of respondents in the PwC COVID-19 consumer survey foresee an economic recovery happening in the next 12 months. New trends such as 'revenge shopping,' or 'bobok sobi' in South Korea, have emerged in countries that have begun relaxing restrictions on mobility. In China, multiple global retailers posted record sales immediately after lockdown measures were relaxed, indicating that if economic confidence returns, the spending pendulum may swing back.

[g] Consumption quintiles represent division of urban population across 5 equal groups based on monthly per capita expenditure
[h] Baseline is median value, for corresponding day of the week, during the five week period 3 Jan – 6 Feb 2020

### Slow down in gross capital formation (GCF)

India's private-sector investment had already been slowing down for the past few quarters before COVID-19. Domestic expenditure growth slowed from 8.8% in Q2 FY19[i] to 6.4% in Q2 FY20, while exports slumped from growth of 15.8% in Q3 FY19 to a contraction of 6.1% in Q3 FY20[18]. Slowing domestic consumption and exports were the key drivers for the decline in industrial output and capacity utilisation for manufacturing industries (Figure 1.7). During this period, Indian corporates started focusing on deleveraging their balance sheets and paid off about INR 600 bn. worth of debts in the first half of FY20[19]. Investment in new capital expenditure projects slowed during this period, leading to a contraction in gross capital formation by 3.5%, 4.8% and 6.1% in Q2, Q3 and Q4 of FY20 respectively[20].

**Figure 1.7: Focus towards reduction in debt burden[j]**




Source: RBI macroeconomic data, RBI OBICUS survey[21] and RBI analysis of listed 2700+ companies

Production shutdowns, limited labour availability due to worker migration and broken supply chain linkages have created supply challenges for companies, which have also struggled with working capital issues and *force majeure* actions on contracts as counterparties have tried to avoid payment obligations. The sectors deeply affected by these challenges cumulatively make up about half of India's total GCF and will continue to be adversely impacted by the pandemic (Figure 1.8).

[i] FY corresponds to an Indian fiscal year from April to March of the following year. Q1 FY20 corresponds to Apr - Jun 2019, Q2 to Jul - Sep 2019, Q3 to Oct.–Dec. 2019, Q4 to Jan.–Mar. 2020

[j] Private final consumption expenditure and export at market prices and constant value with base year 2011-12 is considered, Interest coverage ratio is ratio between companies' earnings and current interest payment

# Voice of Nation

## (PwC's COVID-19 Consumer Survey - June 2020)

In addition to interviewing leaders from enterprises, government, entrepreneurial and societal sectors, we also administered a survey of 1500 citizens across Metropolitan, Urban, Semi urban and Rural India covering ~35 questions pertaining to current and medium-term impact of the pandemic. Most of our study participants (~50%) were working youth in age group 18-26, we also captured a wide profile of people in business – Women entrepreneurs, Private businessmen, Agriculture focused Businesses, MSMEs, government employees amongst other professionals (Figure 1).

**Figure 1: Composition of respondents**

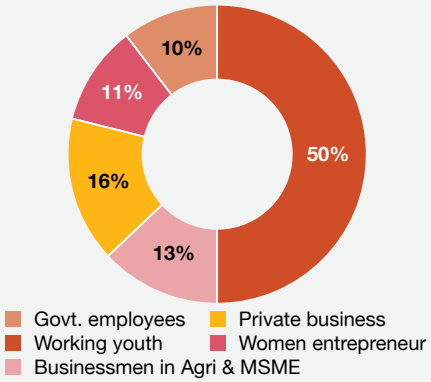
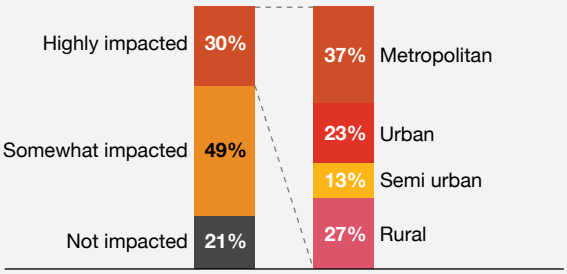



**Figure 2: Extent of impact on income due to COVID-19**




These participants clearly highlighted COVID-19's detrimental impact on their income levels, with almost 79% stating that their current income levels have been impacted. Most highly impacted respondents came from Metropolitan and Urban (60%) while Semi urban and Rural were relatively better off (Figure 2).

However, despite this impact, majority of respondents (52%) were hopeful of an economic recovery within the next 12 months, while another 36% believe a recovery within 2 years (Figure 3). This optimism permeates in their view that the crisis can pave for better digital enablement, collaboration, reforms, and improved focus on the common man. A large number of responses (Figure 4, including multiple responses) see this as an opportunity to shed past behaviors, plug key frictional gaps and lay out a strong foundation for full potential recovery and growth.

**Figure 3: Outlook for economy's rebound**

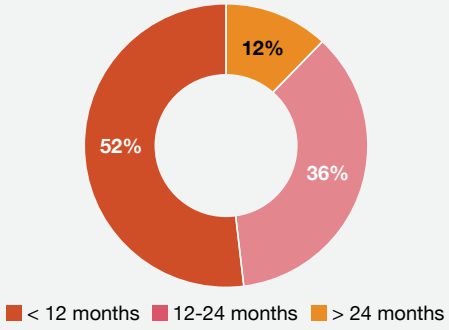



**Figure 4: Crisis would help in**

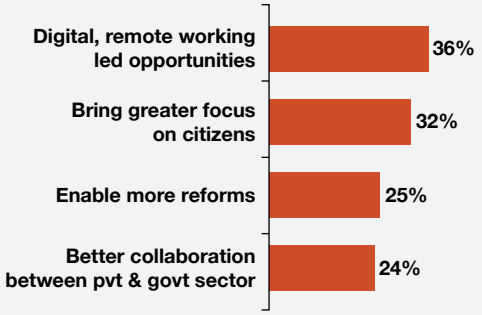
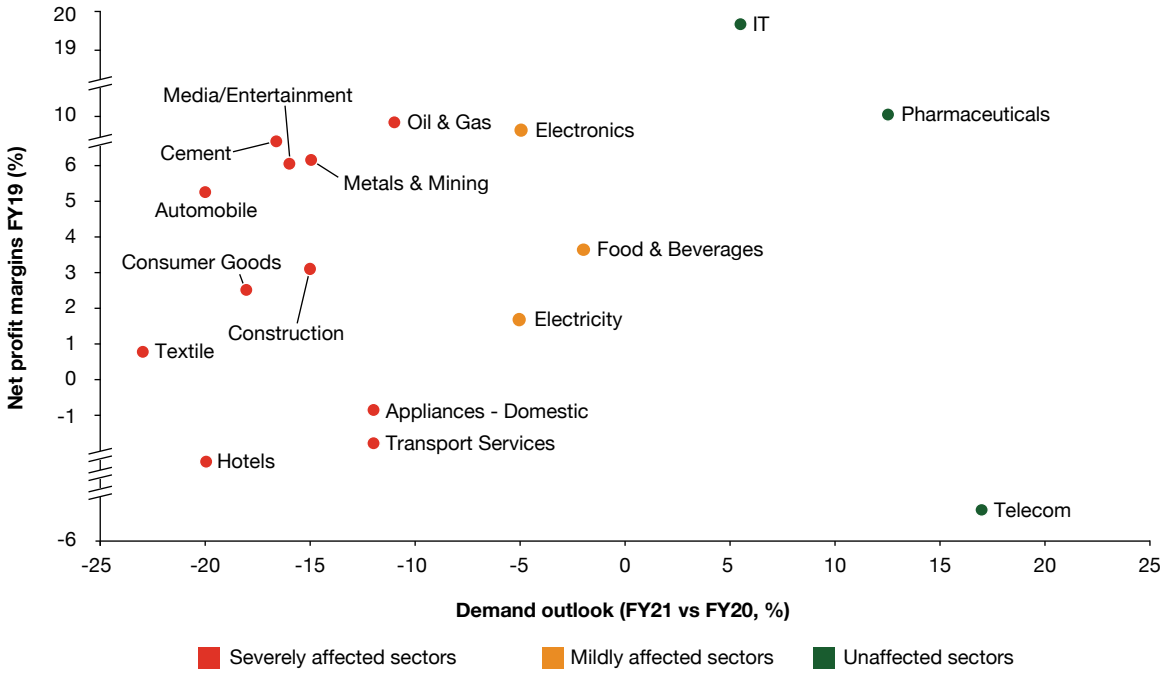


**Figure 1.8: Demand outlook and profitability across industries**




Sources: Secondary research and PwC analysis

### Most CEOs predict recovery by FY22 in capital investments

In a survey conducted by FICCI[22], around one-third of company executives said that they have deferred their investments by more than 12 months. According to PwC's CxO survey[23], conducted in July 2020, two-thirds of executives expect recovery by the start of FY22 (Figure 1.9). The pandemic has also shifted the focus of companies from investments in capital projects to managing operations and working capital.

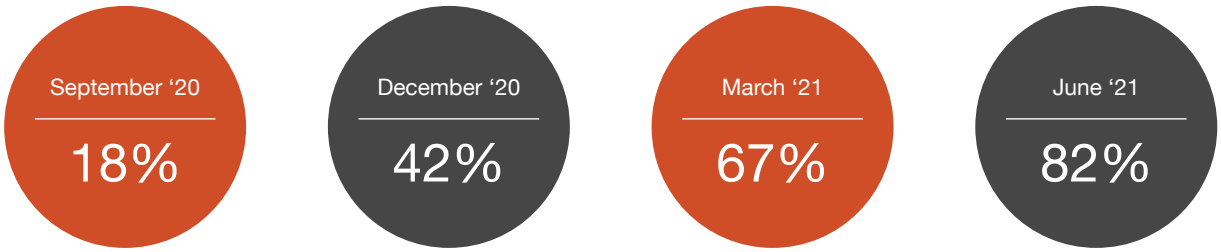
### Government consumption expenditure is critical in the short term

Government consumption expenditure (GFCE) contributed about 11.8% to India's GDP in FY20 and will remain a key factor in reviving the economy. The government has announced a relief package worth INR 21tn (including cash transfer, loan waivers and RBI liquidity measures)[24], and has liberalised sectors under the Aatmanirbhar Bharat scheme.

Due to increased government efforts and healthcare expenditure, the central fiscal deficit is expected to increase from 4.6%[25] for FY20 to 7.6% in FY21[26]. India's debt-to-GDP ratio is also estimated to exceed 80% for the first time in 15 years[27].

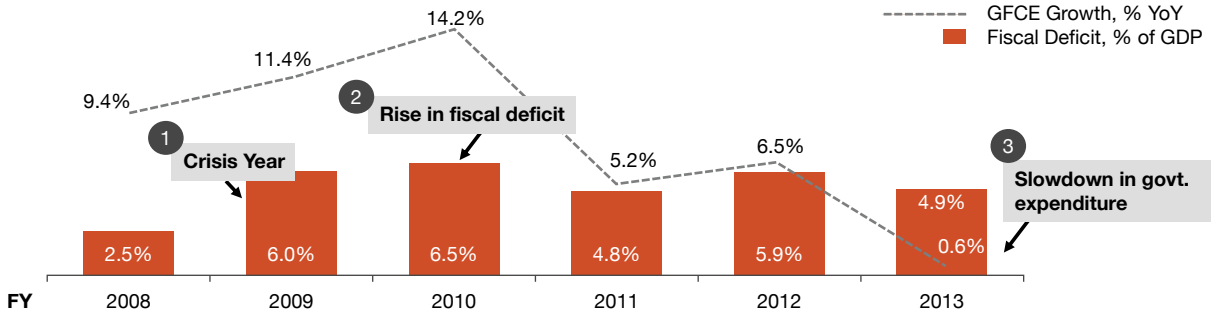
Historically, increased government spending during a crisis leads to increased fiscal deficits, causing the government to control spending in successive fiscal years (Figure 1.10). Hence, a rise in government

**Figure 1.9: Cumulative % of CxO's who anticipate economic recovery across timelines**




Source: PwC Value Creation to Value Conservation Survey

**Figure 1.10: Relation between fiscal deficit and gross fixed consumption**



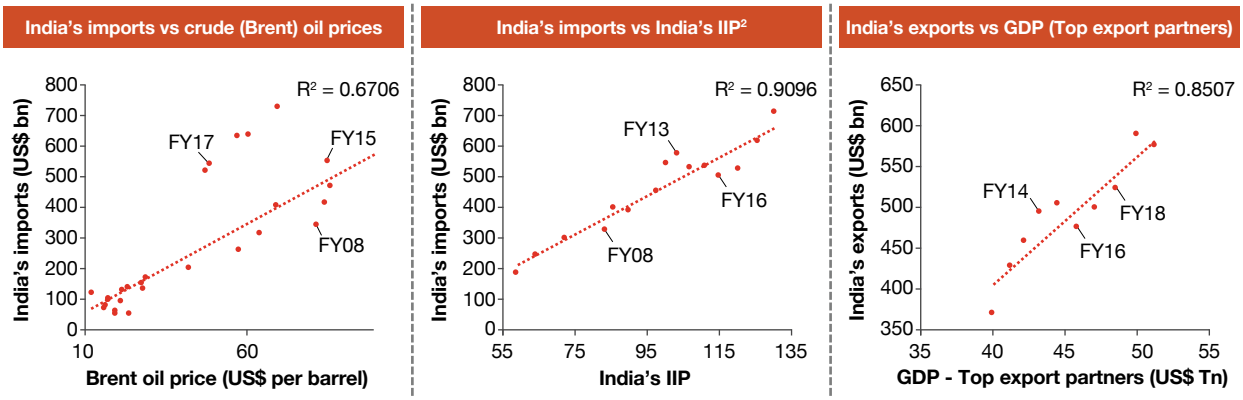

Source: RBI Macroeconomic data and MOSPI National Account Statistics

spending in FY21 may be followed by austerity measures designed to keep the fiscal deficit under control, leading to a potential slowdown in government spending in the medium term.

### Impact on imports and exports

Global trade has been impacted adversely since the pandemic outbreak due to broken supply chain linkages, increasing trade protectionism, supply localisation efforts and near-sourcing measures. The World Trade Organization (WTO) has estimated a decline of 13–32% in trade volume for 2020[28]. India's imports are strongly correlated with the country's manufacturing levels and crude oil prices. During lockdown, India observed a sharp drop in IIP (Index of Industrial Production) level which is expected to remain subdued during FY21. Imports will see a deep contraction in FY21 owing to sluggish domestic demand and steep fall in production levels, followed by an increase in FY22. India's exports are correlated with the cumulative GDP of its top export partners[k]. As the economies of these countries contract in 2020 (in terms of GDP), India's exports may see a likely contraction in FY21, followed by a potential recovery in FY22 (Figure 1.11).

**Figure 1.11: Correlation between India's imports with crude oil prices and IIP; India's exports with GDP of top exporters**




Source: World Trade Organization trade statistics, Ministry of Commerce and World Bank data

### Consumer and corporate surveys indicate economic recovery by FY22

Domestic expenditure, highest contributor to country's GDP, is expected to recover by the next fiscal year. Gross capital formation, which contributes 30% to GDP[29], may recover more slowly than domestic expenditure. GDP is likely to contract in FY21 followed by a recovery phase from FY22 onwards. The size of the contraction will depend on the behaviour and control of COVID-19 over the next six months.

[k] United States, China, United Arab Emirates, Hong Kong, United Kingdom and Germany are some of India's top exporters

Chapter 2

# Key themes for revival and growth

The time is always right
to do what is right.

– Martin Luther King Jr

Our research results throw up an interesting conundrum. Although short-term pains were evident, our insights also revealed a number of hidden frictions and opportunities for structural adjustment in the economy. If companies, institutions and the economy can remove these frictions and embrace new opportunities over the next two to three years, we believe full potential revival and growth can be engineered.

## Five frictions hindering revival and growth

We have identified five frictions in the Indian economy that were particularly exposed by COVID-19.

The first is the extent to which the economy remains concentrated in urban and metropolitan centres and relies heavily on migrant workers. The exodus of such workers back to semi-urban and rural centres was the first sign of how lopsided the economy is. Not enough focus is given for enhancing production and consumption beyond urban and metropolitan centres. The second friction is lack of width in the economy. Economically advanced districts are higher in south, north, and west as compared to central and east and thus the reverse migration of workers largely followed a similar trend (from the south and west to the central and east). Additionally, global supply chains are largely restricted to coastal towns and integration in interiors of India is limited. A third friction is what we refer to as the height of the economy. India exports goods and services, but its efforts have not reached the true potential and are limited by infrastructure and mindset that focuses on exports from metropolitan and urban centers, which constraints growth. Additionally, large India diaspora, which is spread across all major countries, is not adequately engaged and utilised to the potential.

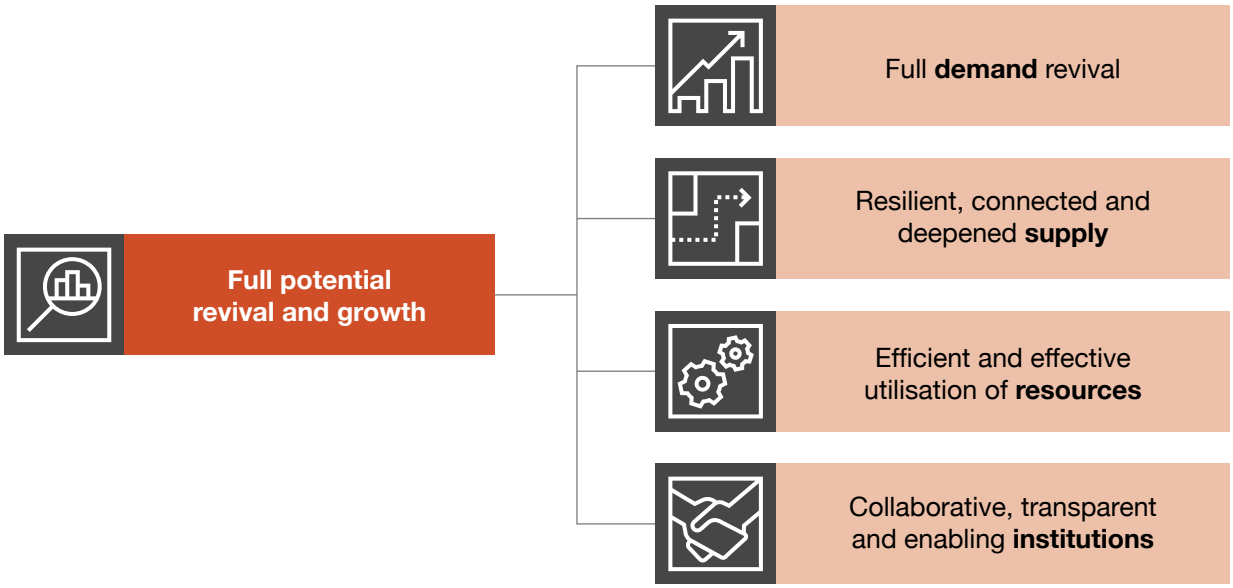
The fourth friction: the virus exposed a digital divide in India, given those with digital means were able to cope with the crisis relatively easily, but many others did not have access to this facility. Finally, the fifth friction is the extent to which the informal nature of the economy was laid bare by the large number of workers who lost their work overnight when lockdown was imposed in late March.

These frictions existed even before COVID-19, but the crisis has brought widespread recognition that they need to be addressed if the country is to deepen, widen, heighten, digitalise and formalise the economy for full potential revival and growth.

## House of revival and growth

In order to reach full potential revival and growth, all sections of society — government, enterprises, citizens — must focus on reviving and boosting demand, realising the full potential of supply, utilising national resources effectively and efficiently, and creating supportive and sustainable institutions as given in Figure 2.1.

**Figure 2.1: Pillars of full potential revival and growth**




Source: PwC analysis

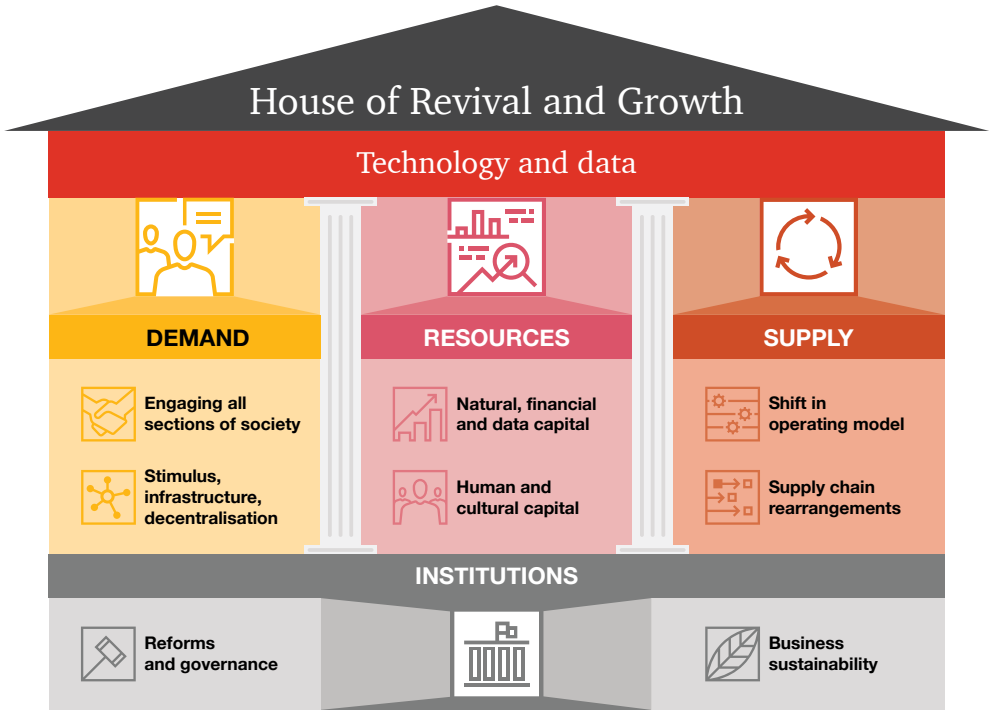
Exogenous shocks such as COVID-19 tend to lead, in the short to medium term, to shifts in consumer psychology and thereby demand. The effects of countrywide lockdown and thereafter regional lockdowns have resulted in visible changes in consumer psychology and demand patterns. COVID-19 is also expected to drive supply-side shifts. Both operating model and supply chain shifts are expected. Digital technology will play a key role in transformation of both operating models and supply chains.

Natural resources, human resources, financial resources, cultural resources and data resources can be looked at afresh and harnessed to power revival.

To unleash this power, an enabling institutional ecosystem will be vital in order to foster full potential demand and supply and for efficient use of resources. Some reforms have already been initiated by the government; more reforms are required to spur growth while ensuring a sustainable future.

The following eight sub-pillars form the core of our 'house of revival and growth', broadly categorised under full Demand, full Supply, full (and new) Resources and agile Institutions. Under these eight sub-pillars we identify cross-sectoral themes that will impact the individual sectors, institutions and companies as well as micro, small and medium enterprises (MSMEs) and farmers.

**Figure 2.2: House of revival and growth**




Source: PwC analysis

## Pillars of revival and growth

### Demand: Engaging all sections of society

India is a consumption-led economy whose domestic expenditure contributes to around 60% of GDP in FY20[1]. This spending is driven by a young demography, especially the fast-growing middle class, which accounts for about half of all Indian households[a,2] (Figure 2.3).

In the short term, consumer sentiment is likely to remain poor. As per a PwC COVID-19 consumer survey (June 2020), 50% of the repondents are planning to curtail expenses on essentials, indicating an overall focus on savings and value-conscious behaviour. More than 75% of respondents are planning to cut spending across non-essential

[a] Upper middle class, comfortable middle class, lower middle class and second lowest class are collectively considered the middle class demographic

categories such as apparel and footwear, consumer durables, automobiles and real estate in the next six months. This behaviour is likely to continue in the medium term. Up to 85% of respondents said that they are planning to defer purchases in high-priced, non-essential product categories in the next 18 months.

Restricted access to physical retail outlets, coupled with the convenience of home delivery, prompted strong adoption of digital technologies by consumers, including first-time trialling of e-commerce. This pattern is likely to continue in the medium term, on the back of growing internet and smartphone penetration and COVID-19 induced digital adoption among new and existing users.

**Figure 2.3: The Indian middle class, its size, and urban-rural variations (2019)**

| | Segment | Income per day | Growth | Households | All India households | Rural | Urban |
|---|---|---|---|---|---|---|---|
| | | US$ | CAGR 2015-20 | % | Million | % | % |
| 1 | Upper class | 100 | 6% | 0.8% | 2.2 | 18% | 82% |
| 2 | Upper middle class | 30 | 3% | 3% | 8.2 | 23% | 77% |
| 3 | Comfortable middle class | 20 | 5% | 11% | 29 | 34% | 66% |
| 4 | Lower middle class | 10 | 6% | 14% | 39 | 52% | 48% |
| 5 | Second lowest class | 6 | 5% | 20% | 54 | 71% | 29% |
| 6 | Lower class | 2 | 1% | 16% | 43 | 92% | 8% |
| 7 | Laboring households | 1 | 0.5% | 35% | 95 | 77% | 23% |
| | | | | | **272 m** | **184 m** | **87 m** |

Source: Goldman Sachs, PwC analysis

## Themes for revival and growth – Engaging all sections of society

1. **Understand consumer mindset and psychology to identify new demand drivers**
   The COVID-19 pandemic has significantly affected the psychology of all Indians, resulting in shifts in consumer behaviour and preference. Understanding these shifts and developing the relevant product and service offerings aligned to consumers' needs will be critical in stimulating demand and driving medium-term growth.

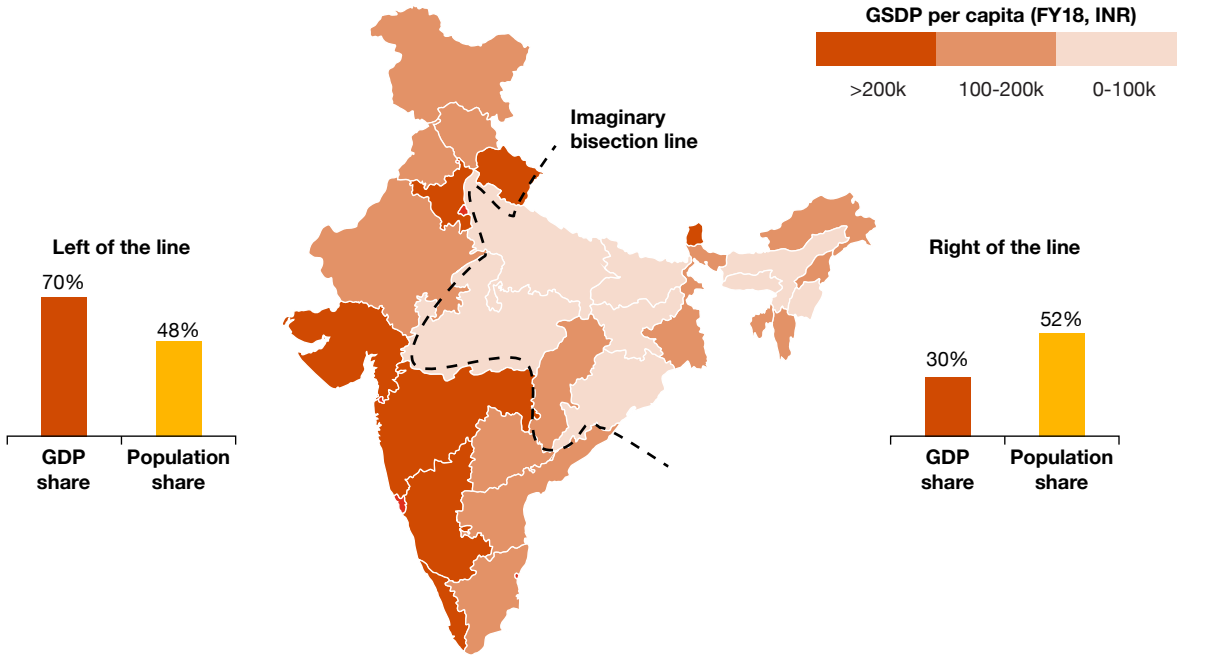
2. **Put renewed focus on India's emerging middle class for growth**
   Apart from the psychological impact, COVID-19 has also led to severe economic consequences impacting the large, emerging, 'middle class'. To drive revival and growth, demand needs to be stimulated across this segment, focusing on catering to their 'wants' and 'needs' through targeted interventions such as increased access to credit, and other government reforms and incentives.

3. **Shift towards digital front end for customer interaction**
   As a response to the crisis, there has been a significant shift in channel preference, with increasing adoption of digital technologies by consumers. Leveraging digital front ends to reach consumers can provide a faster means of accessing demand and driving medium-term revival and growth.

### Demand: Stimulus, decentralisation and infrastructure

Economic activity is concentrated and driven by select states of the country as we can see from data laid out by government (Figure 2.4). Bisecting India into two halves of equitable population regions through an imaginary line indicates that states on the left of the line (north, west and south) account for 70% of the country's GDP, while the states on the right (central and east) account for 30% of the GDP[3,4]. This highlights a need for 'widening' of economic activity across the hinterlands of India (central and eastern states).

**Figure 2.4: India's gross state domestic product (GSDP) per capita, by state (INR, FY18 at current prices)[b,c]**

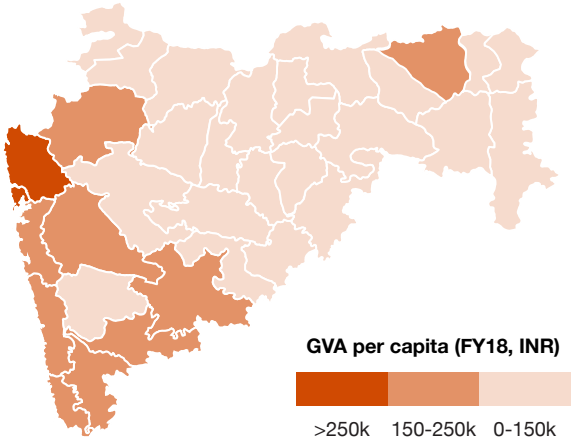



Source: Central Statistical Organization (India), Economic & Statistical Organization (Punjab), Unique Identification Authority of India (UIDAI), PwC analysis

Widening of economic activity can be enabled by development of regional ecosystems by decentralising demand, supply, resources, infrastructure and autonomy across the states.

Even within states, distribution of economic activity is concentrated in select top districts. As evident from the case of Maharashtra, select top districts in terms of gross value added (ones with darker shades in Figure 2.5) contribute to 70% of the GVA and 54% of the population, while the lower tier districts (ones with light shade in Figure 2.5) contribute to 30% of the GVA with 46% of the population[5]. This indicates the need for 'deepening' of economic activity within the lower tier districts (semi-urban and rural districts) of the state.

**Figure 2.5: Maharashtra's per capita gross value added (GVA), by district (INR, FY18 at current prices)[b,c,d]**




Source: Economic Survey of Maharashtra (2019-20), PwC analysis

[b] This map is not to scale. It is an indicative outline intended for general reference use only. The accuracy of this product is dependent upon the source data and therefore absolute accuracy for navigation or legal purposes can not be guaranteed.
[c] Based on provisional data available from government sources
[d] Based on district map as per 2011 census.

## Figure 2.6: District-wise gross value added real growth for Maharashtra[e]

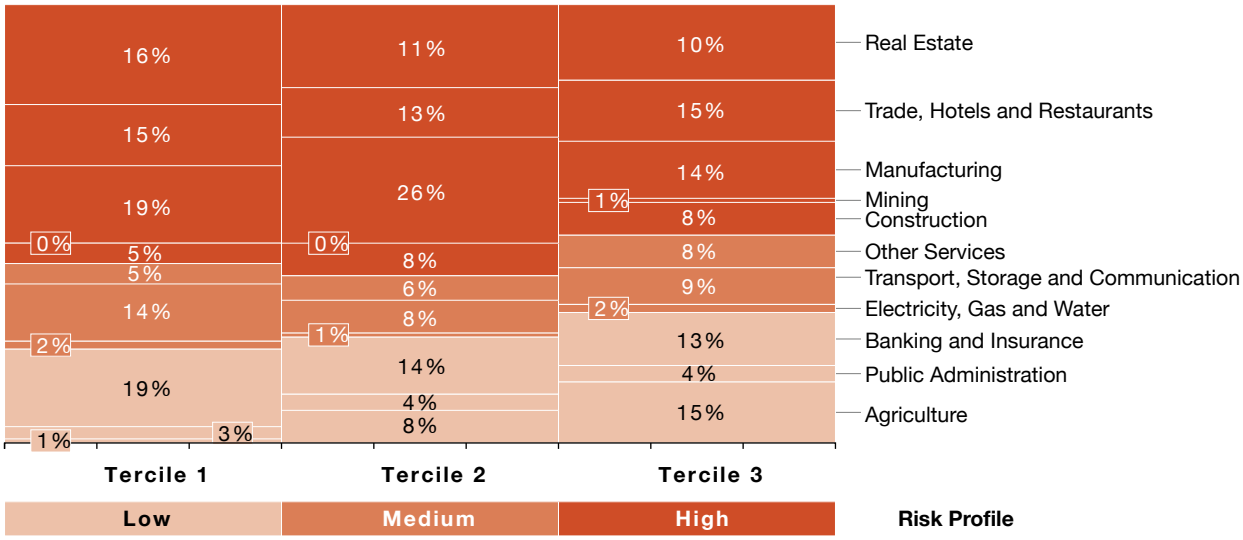
| Tercile[f] | Number of districts | Illustrative districts | GVA CAGR (FY12-16) | GVA CAGR (FY16-19) |
|---|---|---|---|---|
| **Tercile 1 (Top 33% GVA)** | 3 | • Mumbai<br>• Thane[g] | 7.3% | 7.2% |
| **Tercile 2 (Middle 33% GVA)** | 7 | • Pune<br>• Nagpur | 6.7% | 6.9% |
| **Tercile 3 (Bottom 33% GVA)** | 25 | • Jalgaon<br>• Raigad | 5.2% | 7.1% |
| **Maharashtra (All districts)** | 35 | • Mumbai<br>• Raigad | 6.4% | 7.1% |

Source: Economic Survey of Maharashtra (2019-20), PwC analysis

A further analysis of deepening can be understood if the 35 districts of Maharashtra are classified into three tiers (terciles) based on their GVA (real) contribution. In the past 8 years, districts in the top two terciles have driven the state's growth. However, growth has been accelerating in the bottom tercile (Figure 2.6). This indicates a gradual decentralisation towards the tercile 3 districts, which was underway even before the COVID-19 crisis.

A relatively low prevalence of COVID-19 cases in these districts (~12% of total cases in Maharashtra)[6] is likely to provide some underpinning to the hinterlands in terms of greater economic resilience as reflected in a higher share of low risk GDP (32% for Tercile 3 vs 23% for Tercile 1, Figure 2.7)[7]. With infrastructure decentralisation, stimulus support from government and the force of reverse migration, further acceleration is expected.

## Figure 2.7: District-wise % share of economic activity, Maharashtra[h]




Source: Directorate of Economics & Statistics (Maharashtra), PwC analysis

Maharashtra is an example to highlight the gradual decentralisation taking place in India before COVID-19, and the potential acceleration thereafter. As another example, three smaller cities (Mallapuram, Kozhikode and Kollam) from Kerala, were the only Indian cities enlisted in the top 10 of the world's fastest growing cities in a survey conducted by Economist Intelligence Unit in Jan 2020[8]. While COVID-19 has induced key drivers for decentralisation, government can further enable by reorienting its schemes, industrial development, skill development, infrastructure development and labour-related policies across small districts.

[e] Based on provisional data available from government sources
[f] Tercile defined based on 2011-12 share of gross value added
[g] Thane district includes Palghar
[h] Based on % share of economic activity as per FY14 data

### Themes for revival and growth – stimulus, decentralisation and infrastructure

1. **Stimulus targeted at the masses, MSMEs and farmers**
   A large part of the government's COVID-19 stimulus has been directed at India's hinterlands. Although this is expected to boost supply through increased liquidity and credit, there is a need for a larger demand-based stimulus to drive revival, similar to schemes initiated by some other countries. In addition, there is a need to address frictions in 'last mile' disbursal of money to India's MSMEs.

2. **Natural decentralisation of demand with working populations moving to their home towns/districts**
   Widespread reverse migration of the working population is likely to further accelerate the decentralisation of demand. However, successfully tapping into this segment for demand revival and growth will require interventions focused on providing sustainable opportunities for employment, housing, education and healthcare.

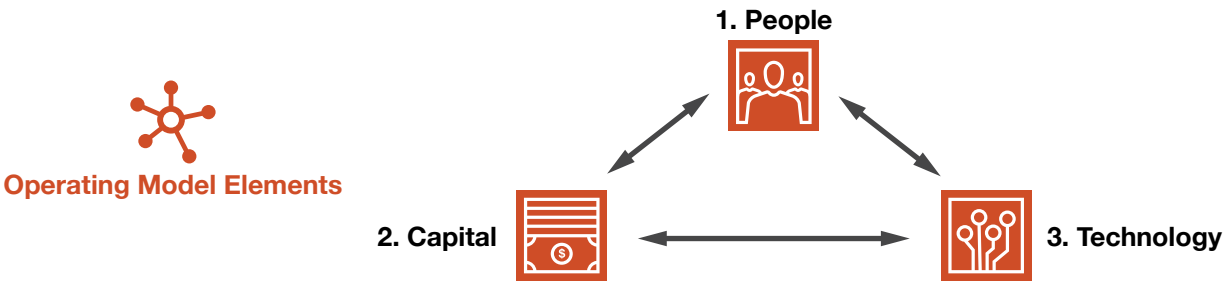
3. **Establishment of infrastructure to support the smaller districts and boost demand**
   Building physical and digital infrastructure in the hinterlands has been a key government focus since long before the COVID-19 crisis. More progress could be made by effective engagement with public and private partners to further develop infrastructure and stimulate demand for medium-term revival and growth.

### Supply: Shifts in operating model

Disruption caused by COVID-19 has forced organisations to reconfigure their operating models. Building resilient processes to ensure business continuity, leveraging flexible employment models and focusing on cost efficiencies has become key to operating model transformation.

Digital transformation can enable resilient processes to ensure business continuity amid disruptive events. India's digital competitiveness ranking, as measured by the IMD World Competitiveness Center, improved from 56 in 2014 to 43 in 2020[9]. Organisations have leveraged flexible employment models, during the pandemic which is likely to continue in the medium term. However, employers will have to rethink their operating models to offer a seamless work offering (Figure 2.8). Enterprises are redesigning employment models and human capital policies to facilitate a flexible and responsive environment for their employees. Microsoft India, for example, is offering additional flexible leave options involving childcare elements in recognition of extended school closures[10].

Figure 2.8: Shifts in operating model elements to enable Work-from-Anywhere (WFA)




| 1. Human Capital | 2. Financial Capital | 3. Technology Capital |
|---|---|---|
| **Assessing WFA suitability** based on employee's role, personality, performance and preference | **Location strategy** could be re-evaluated with firms setting up satellite offices in smaller cities as employees move out of metropolitan cities | **Ensuring data privacy** of sensitive client and employee records when working remotely |
| **Setting SOPs** detailing aspects such as daily working hours, attendance policy, communication guidelines, etc. | **Optimizing office space** based on lower in-office employee count and need for more collaborative spaces | **Digitalisation** of support functions such as Accounts, Facilities Management, IT support, etc. |
| **Preserving the firm's culture** and preventing formation of contrary sub-cultures in remote teams | **Location based compensation adjustments** if employees choose to relocate to smaller cities | **Providing technology infrastructure support** such as laptops, Wi-Fi dongles to employees working remotely |
| **Reassessing employment contracts** to offer flexibility and ensure integrity | **Re-evaluate 'rent' vs 'own'** for the office/depot space | |
| **Redefine KPIs** based on the new ways of working | | |

Source: PwC analysis

## Themes for revival and growth – shift in operating model

The crisis offers an opportunity to accelerate key shifts in operating models to build resilient processes, enhance flexibility and drive cost efficiencies. The following three themes will enable this.

1. **The service industry will continue to adopt a work-from-anywhere approach**
   Operations will become more flexible. However, employers need to address the implications of this shift more broadly across their operating models, redefining key performance indicators to ensure productivity, as well as revaluating compensation models. Technology elements, such as ensuring data privacy and strengthening infrastructure support, will have to be re-evaluated.

2. **Rapid acceleration of digital technologies will change many aspects of operations**
   Digital transformation of processes will help build transparency, improve efficiency and develop resilience. Process automation technologies such as chatbots, automated calling, voice assistants and robotic process automation (RPA) were already on the rise and will gain further traction. Digital applications such as demand sensing (to understand shifts in consumer behavior), track and trace systems (to drive transparency in supply chain), etc. will become more widespread.

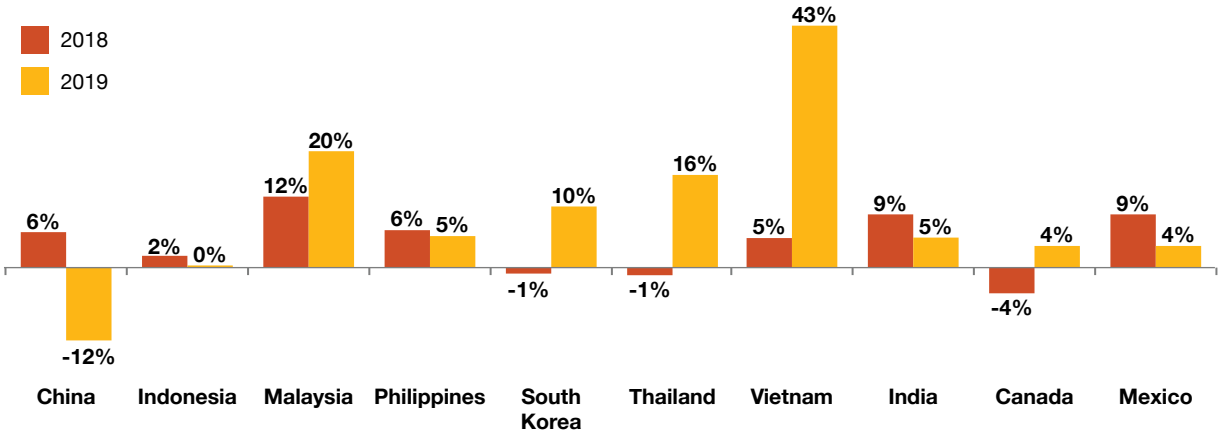
3. **Organisations will witness an increasing trend towards a gig economy**
To ensure cost efficiencies, organisations will need to focus on reducing operating costs and creating flexibility by outsourcing ancillary functions and adopting flexible employment models. As an example, after the global financial crisis, there was an increase of around 39% in the overall share of contract workers in the automotive, manufacturing, telecom, and IT sectors between FY09 and FY13, while the growth in the share of regular workers halved, to 25%[11]. Employment models may also undergo a shift from 'value chain based' to 'role based'.

### Supply: Rearrangement of supply chains

COVID-19 will not only lead to a rearrangement of global supply chains but may also lead to structural changes in the local supply chains, making it more pervasive and resilient.

The pandemic has accelerated supply chain diversification strategies that were already being considered by global companies, particularly as they relate to China which accounts for 12.4% of global trade and 28% of global manufacturing output[12]. Several international companies are seeking to broaden the base of their global supply chains, including by re-shoring. According to a survey conducted by the American Chamber of Commerce, 35% of US firms in China are considering relocating production[13]. Due to the pre-pandemic trade tensions between US and China, merchandise exports from China to the US fell by 12% on a year-on-year basis in 2018 - 2019, and countries like Vietnam, Thailand and South Korea were able to gain[14] (Figure 2.9).

**Figure 2.9: Year-on-year % growth in exports to US**



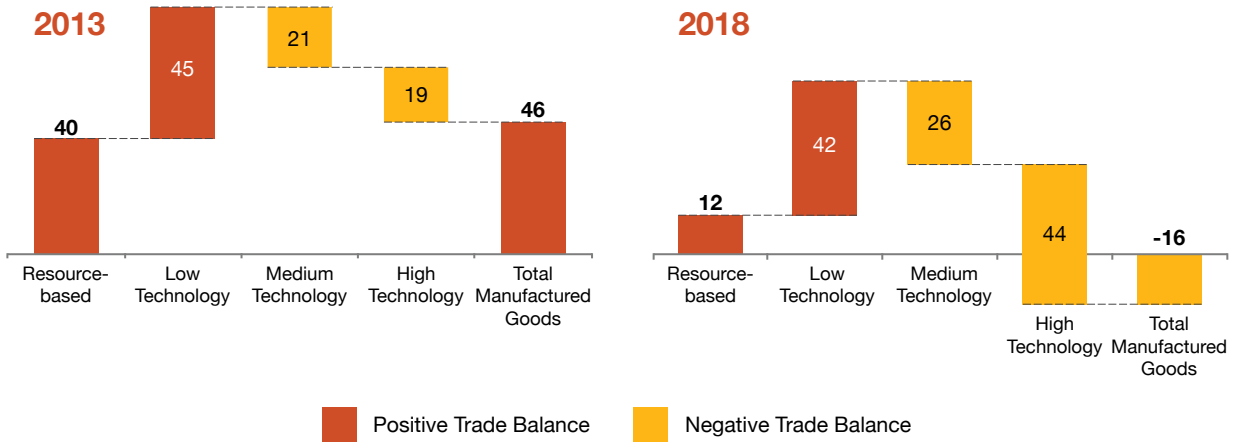

Source: UNCTAD, PwC analysis

India has an opportunity to strengthen its participation by positioning itself as an attractive destination for supply diversification. This will require investments in human capital and innovation. A key strength India has, relative to Southeast Asian countries, is its large and attractive domestic market which will create a sourcing and large market proposition that allows it an advantage over smaller countries of South East Asia.

India must also focus on import substitution to drive self-sufficiency across critical sectors and to improve its trade position. India's trade balance of manufactured goods has run into deficit owing to its dependence on other countries for medium and high technology manufacturing (Figure 2.10). Further, India, 'a global pharmacy of the world', currently imports 70% of active pharmaceutical ingredients from China, which creates a degree of dependency risk[15].

COVID-19 has brought to the surface multiple fault lines in local supply chains during the lockdown period. It has created a need to build flexible, hybrid service delivery models, organically or by forging partnerships with other organisations. Multiple examples have surfaced, during the pandemic, where FMCG companies, online and offline retailers partnered with various members of the ecosystem like mobility service providers, food delivery service providers, etc. to strengthen last mile hyperlocal capabilities.

Figure 2.10: Trade balance for manufactured goods, 2013 (LHS) and 2018 (RHS), US$ bn




Source: UNCTAD, PwC analysis

## Themes for revival and growth – rearrangement of supply chains

This crisis offers an opportunity not only to repair existing supply chains, but also to rethink and reconfigure them to drive faster revival and growth. The following four themes will enable this.

1. **Global supply chain reconfiguration for resilience and competitiveness**
   India has an opportunity to strengthen its participation in global trade and to become self-reliant. However, the government will have to overhaul its foreign trade policies and ease of doing business further. While India (Rank 63) fares better than Vietnam (Rank 70) in Ease of Doing Business index, it lags behind other Asian economies like China (Rank 31) and Thailand (Rank 21)[16].

2. **Self-reliant mindset, leading to building of local supply chains**
   India can reduce its dependency on other countries through inward manufacturing to drive recovery and revive growth. India will need to transition from a resource-based, low-technology manufacturing economy to a medium- to high-technology manufacturing economy by building key capabilities in engineering, R&D and manufacturing, supported with trade and business promoting policies.

3. **Emergence of new service delivery models**
   Delivery models will change as companies focus on building supply chain redundancies for the last mile to mitigate the potential risk of disruption. Hyperlocal models may gain prominence over the medium term as they have shown better resilience during the pandemic.

4. **Shift towards digitally connected and autonomous supply chains**
   Advanced supply chain capabilities will offer agility in responding to the disruptions caused by COVID-19. These capabilities will also enhance customer-centricity and balance service levels, costs and margins. According to a global survey conducted by PwC with 1,600 supply chain executives across 33 countries, so-called 'digital champion' organisations reported an annual supply chain cost savings of about 7%, and increased annual revenues by about 8%[17].

## Resources: Natural, financial and data resources

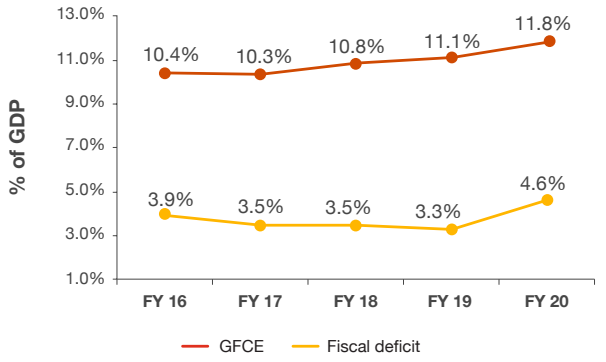
COVID-19 has created opportunities for releasing natural resources, which are critical for revival and growth. As part of the *Aatmanirbhar Bharat* stimulus[18], the government has announced structural reforms in the mining sector. Reforms have been proposed that include auctioning of 500 mining blocks and joint auctions of bauxite and coal for releasing aluminium resources.

**Governments need to find ways to improve their asset utilisation; municipalities, for example, need to improve utilisation of empty schools and idle real estate during and beyond this crisis period.**

**Amit Chandra**
Chairman, Bain Capital India Office

COVID-19 has slowed down economic activity, leading to an intense cash crunch felt by enterprises and citizens alike. Government full consumption expenditure (GFCE) had been rising even before the pandemic, leading to increase in fiscal deficit (Figure 2.11). Government spending has further increased in the pursuit of revival and recovery, with announcements both as direct stimulus and credit guarantees, amounting to approximately 10% of GDP[19].

**Figure 2.11: Government full consumption expenditure and fiscal deficit as a % of GDP**




Source: World Bank, Trading Economics, RBI

Cash-strapped enterprises took stock of their assets, choosing to divest wherever possible in order to make ends meet. Companies have started deleveraging their balance sheets to reduce debt. The drop in the interest coverage ratio as a result of falling profit margins is a key indicator (refer Chapter 1).

The importance of data as an enabler in economic growth has been vital in recent years. However, data as an asset is just beginning to be understood in India. Data should not be seen as a mere by-product of business-as-usual and a record of past transactions but a tool for making future decisions.
Today, data exists in silos with little to no cross-utilisation and can be used for the cause of a faster revival. This will require addressing lack of awareness, poor quality, lack of trust and missing core competencies in data management.

## Themes for revival and growth – natural, financial and data resources

Five key themes and trends in natural, financial and data resources are expected to drive revival and growth in the medium term.

1. **Effective use of India's natural resources**
The government's decision, as part of the recent *Aatmanirbhar Bharat* stimulus announcement, to encourage private-sector participation in the economy is a positive move to open the mining sector. Steel and cement sectors, which have been open to private sector, grew at a CAGR of approximately 7%, higher than coal, a closed sector[20].

2. **Mobilisation and management of assets for generating capital**
As entities struggle to return to a safer financial ground, they will evaluate existing assets and map the cost of upkeep against monetary returns. Assets found under-utilised may be discarded. Government disinvestments rose after the 2008 financial crisis[21]. A similar trend of mobilizing assets is expected to take place now, and some private companies are already turning to disinvestment to raise money.

3. **Industry consolidation and cross-fertilisation of resources through mergers and acquisitions, alliances and public–private partnerships (PPPs)**
Economic downturns initially cause a fall in mergers and acquisitions (M&A) as companies forego major investments. However, in the medium term the volume of deals rises as strategies are reassessed, portfolios sharpened and new assets acquired with shifting demands. Lower valuations brought about by the downturn make deals more attractive too. Historical data shows that M&A and PPPs[22] saw an increase after the 2008 global financial crisis.

4. **India's propensity to save can be channelised to spur investment**
   India's gross domestic savings grew from US$ 2 bn in 1961 to US$ 8 bn in 2019[23]. The creation of investment (represented as gross capital formation) has historically increased with rising savings. The share of savings as a proportion of GDP in India rose from 6% in 1961 to 22% in 1991, and was as high as 30% by 2019[24]. Investments also rose from 16% to 29% and to 32%, respectively, during the same time period[25]. However, the recent slowdown in investments even prior to COVID-19 is a sign that platforms that allow investment returns have not seen an improvement.

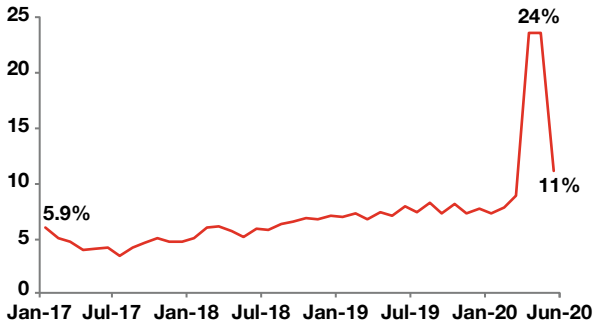
5. **Increased collaboration that helps harness the power of data**
   Although India already has some data-related initiatives, more sophisticated initiatives for realising potential of data are needed. Traditionally, data has not been accounted for as an asset on the balance sheets of either government or enterprises. This crisis and the subsequent revival and growth phases will require a shift — both government and the private sector need to view data as an asset. International exemplars such as Estonia's *X-Road* that allow data exchange while ensuring security may be evaluated.

### Resources: Human and cultural resources

India has a large and growing population, with approximately 35% aged 15–34 years[26]. This represents a human resource potential that can play a crucial role in the revival and growth phase.

Even before COVID-19, there were both supply and demand challenges with human resources. On the demand side, unemployment was increasing, reaching 7.8% in February 2020 just before the crisis, up from 5% in February 2017 (figure 2.12)[27]. Demand by industry is also changing sharply with Industry 4.0 creating jobs involving cyber security, Internet of Things (IoT), networks, etc. In traditional sectors like agriculture, the largest employer in India, the skill sets required are currently low-tech

**Figure 2.12: Unemployment rate in India**




Source: CMIE

which allows individuals to move into contruction and manufacturing. Both these sectors have higher productivity relative to agriculture. Agriculture with a negative employment elasticity[28] of –0.02, will continue to shed jobs.

Another challenge is India's significantly lower female labour force participation rate (LFPR), which is 24.6% in rural areas and 20.4% in urban areas[29] as compared with a total global average of 48.5%[30] (Figure 2.13)[i].

COVID-19 has increased unemployment in the short term, but it has also provided means to democratise skiling and education, including opportunities for women to join the workforce. COVID-19 has seen the return of migrants to their home states, and with remote learning, local infrastructure and local skilling, small industries like agro processing can catalyse employment in smaller towns and districts.

Another important, and often ignored resource India possesses is its culture. India has enormous potential in areas such as traditional jewellery, local handicrafts, ancient medicinal practices, and more. The recent focus of the government on ayurveda, yoga and naturopathy, unani, siddha and homeopathy, core to the Ministry of AYUSH, promote the development of traditional medicinal systems. The AYUSH market stands at US$ 10bn and is estimated to grow by 50% over the next five years[31]. AYUSH is a good example of how institutional support can drive cultural goods and can play a key role in heightening and localising the economy.

[i] The Figure 2.13 shows data from NSSO's quinquennial employment surveys till 2011-12 and Periodic Labour Force Survey (2017-2018)

# Stimulus for targeted platforms in Emerging Economies

While this report is not intended to analyse COVID-19 induced macro-economic situation, the quantum and content of stimulus will be a key determinant in the revival and growth story. At the end of July 2020, developed economies had provided US$ 4.2tn of stimulus totaling 17% of GDP[32] a figure much higher than emerging economies. With a relatively low tax base and significant growth responsibilities, emerging economies like India may be constrained in the fiscal headroom available to “spend your way out of recession” – words used by James Callaghan, the British prime minister, in 1976.

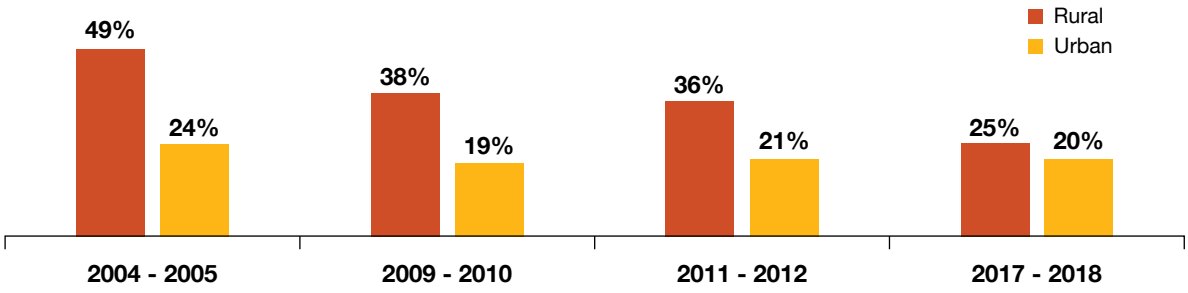
Evidence gathered by Atif Milan, Ludwig Straub and Amir Safi, economists at University of Princeton, Harvard and Chicago respectively recently points out that excessive stimulus could create greater inequality . Stimulus requires the government to borrow from the rich, and this helps the rich get richer while indirectly the poor get more indebted, the theory goes. They cite the example of the US, where ownership of debt in the top 10% of income has been growing due to government borrowing on the people’s behalf. This has accelerated inequality rather than lower it. On the other hand, some economists insist that fiscal prudence itself will cause the recession to deepen, with the effects of recession more pronounced on the poor than the rich.

If excessive stimulus is not affordable for emerging economies, and as some economists argue could widen inequality, what is the answer to rapid revival and growth? Our belief is that targeted investment in platforms – policy, digital, and physical, and those which benefit whole-of-society, can play a critical role. They will deepen and widen economic activity and benefit the economy through employment, an objective critical for developing countries going through a demographic surge. This will require government funding, but the debt can be used productively to create platforms that will generate returns.

Construction in rural and semi-urban areas will create local infrastructure like last-mile roads, waterways, and immediate employment. Targeted infrastructure like warehouses and market linking mechanisms for MSME and agro-processing, apparel and handicrafts, could lead to job creation for migrant workers. Digital infrastructure would create a leapfrog effect in areas such as education and health. This would equate to a modern-day Marshall Plan, but with a very strong digital component.

Finally, in the medium term, such an approach could also lead to more formalisation of the economy and a broadening of the tax base. With such a strategy, stimulus will be targeted and smartly planned to create an approach emerging economies can afford, while promoting inclusive growth.

Figure 2.13: Female Labour Force Participation Rate for ages 15+ years in rural and urban India




Source: MoSPI

## Themes for revival and growth – human and cultural resources

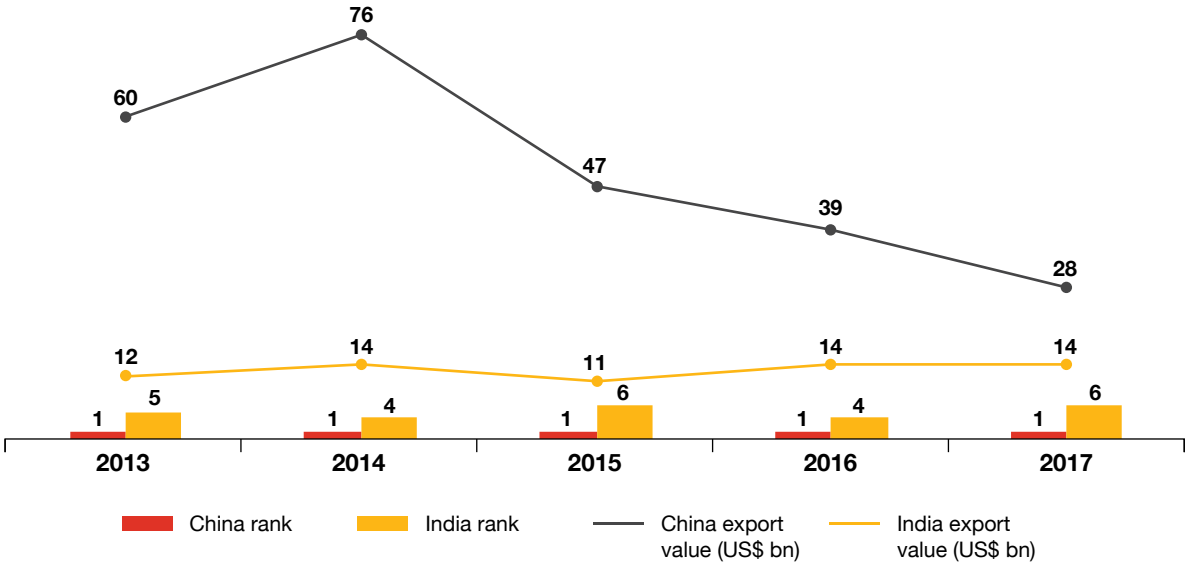
Three key themes and trends in human and cultural resources are expected to drive revival and growth in the medium term.

1. **E-education and digital platforms for scalable and democratised human resource capability building**
   India is witnessing an increasing push by both government and enterprises in the e-education space. The use of government platforms such as Swayam, Diksha, iGOT and enterprise initiatives had increased dramatically in the first phase of the crisis. The e-education market is expected to grow at a CAGR of approximately 41%[33]. Increased adoption of e-education programmes will break geographic barriers, providing equal learning opportunities across geographies and segments of the population.

2. **A focus on generating employment outside large towns and districts**
   COVID-19 is pushing decentralisation within the country, creating demand for jobs outside large towns and districts. Meanwhile, government initiatives like the Aatmanirbhar Bharat stimulus and the National Infrastructure Plan (NIP)[i] have to be fast-tracked for creating the right infrastructure to help employment generation in such areas.

3. **Cultural assets entering the mainstream**
   Although India is among the top ten countries in production and export of cultural goods (e.g. arts, crafts, jewellery), there is headroom for growth (Figure 2.14)[34]. The shift in global supply chains accelerated by COVID-19, and the re-evaluation of the businesses making up those supply chains, present an opportunity for bringing India's cultural strengths into the limelight.

Figure 2.14: Cultural goods ranking and export value




Source: UNESCO

[i] National Infrastructure Pipeline

### Institutions: Reforms and governance

Concerted efforts were being made by central and state governments to develop good governance mechanisms even before COVID-19. This includes initiatives like introduction of an insolvency and bankruptcy code, GST reforms etc. However, this crisis offers an opportunity for more comprehensive reforms and policy agenda, removing frictions for investment and driving growth. For example, land and labour reforms in India are long pending; if enacted, they could attract significant foreign and domestic investment.

COVID-19 can be a catalyst for the country to strengthen its core institutional pillars, and for the private sector to support the push by the government in these reforms and its implementation for revival and growth.

### Themes for revival and growth – reforms and governance

Four key themes and trends in reforms and governance can drive revival and growth in the medium term.

1. **Reforms and regulations designed to unlock land, labour and capital**

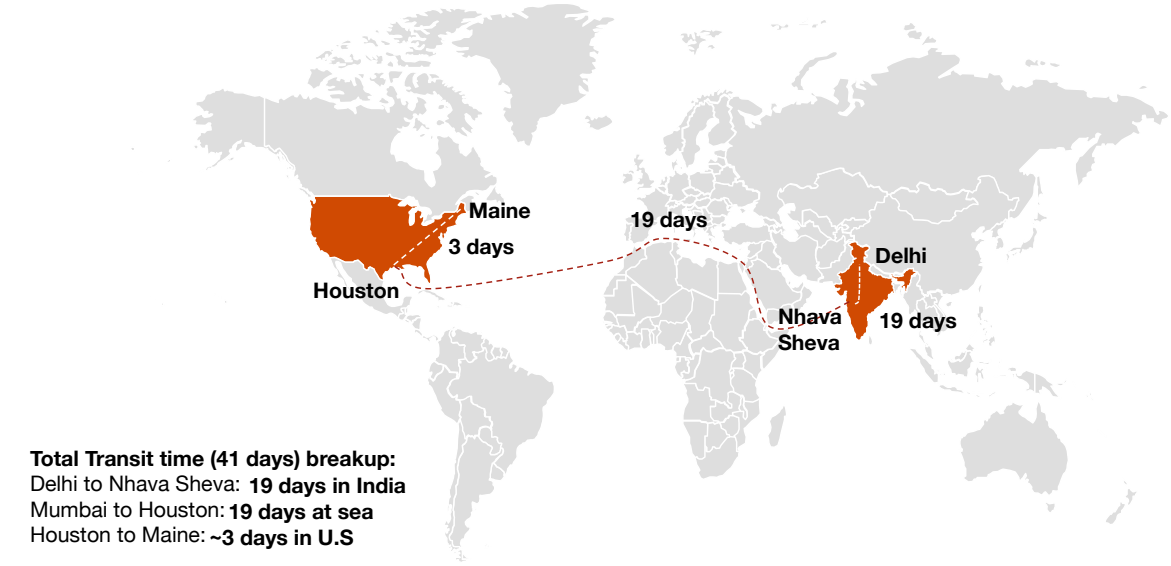
   There are challenges in terms of land use, such as cumbersome and long land acquisition processes, high acquisition costs, loose ownership details, siloed land records across departments etc. - leading to land related disputes, which are ~66 per cent of all civil cases[35]. While governments are trying to digitise land records and address these challenges, significant land reforms are required in the medium term.

   Labour laws in India face three key challenges. First they are restrictive, as exemplified by the Industrial Disputes Act of 1947, which requires government approval for layoffs. Second, they are complex, with multiple central and state laws in existence. Third, there are incentives for firms to remain small for example, only establishments with more than six workers (in case of Trade Unions Act) have to comply with labour laws[36].

   Prompted by the COVID-19 crisis and migration, some states abolished laws that require government approval for layoffs. Central government is also planning to reduce the complexity of labour laws by amalgamating 44 central laws into four labour codes[37]. Further reforms to unleash the full human capital of our country while ensuring the inclusion and prosperity of the labour force are needed.

   Infrastructure will play a key role in revival and growth. However, logistics costs at 14% of GDP[38] and sub-optimal infrastructure spending of US$ 100 bn - US$ 110 bn[39] will require immediate focus. The current logistics related challenges are evident from a case study[40] regarding the time consumed (41 days) in transit of a consignment from Delhi to Maine (Figure 2.15). The NIP, with over INR 100 tn investment over five years[41], the National Logistics Policy that could reduce logistics costs from 14% to less than 10% of GDP[42], and a dedicated freight corridor are major policy measures already announced. The next 3 years require intense focus to implement them on the ground.

**Figure 2.15: Apparel consignment transit time from Delhi to Maine[k]**



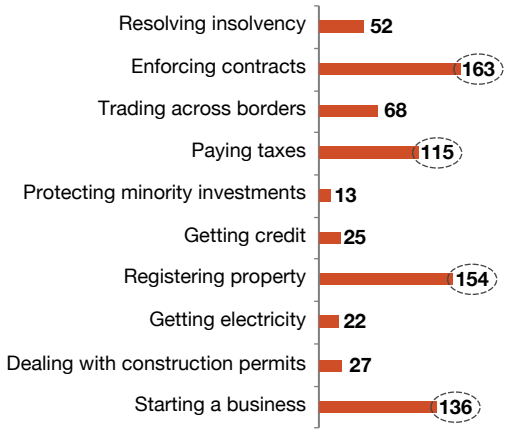

Source: Economic Survey 2019-20

2. **Ease of Doing Business 2.0 to spur growth**
   India has done well to improve its ranking in the Ease of Doing Business Index (it ranked 142 in 2014 and 63 in 2020)[43]. However, there are still areas for improvement, such as enforcing contracts, paying taxes, registering a property and starting a business (Figure 2.16).
   More importantly are regional disparities in the ease of doing business across states, with 18 states in 'aspirers' category as per ranking published by the Department for Promotion of Industry and Internal Trade (Figure 2.17)[44].
   Initiatives like Invest India, Foreign Investment Facilitation Portal, e-Nivesh Monitor, and single window clearance systems by some states are steps in the right direction, and this crisis is an opportune time to accelerate these initiatives.

3. **Reforms and regulations designed to enable participation and consultation by all segments of society**
   Another important area is collaborative governance, by collaborating with enterprise and society in aspects such as policy decisions. In order to increase collaboration for more inclusive policy decisions, central government's 'MyGov' programme and similar programmes initiated by ten other states have been welcome initiatives, but a lot more is required across country, especially by states.

4. **Trust building**
   Building trust between citizens, enterprises and governments is one of the most important institutional pillars. This is not just an issue to be addressed by government, enterprises and citizens have to equally take part – asking for accountability and showing responsibility. In the initial phase of combating the virus, these three elements of society came together in different ways. This collaboration must continue in the revival and growth phase.

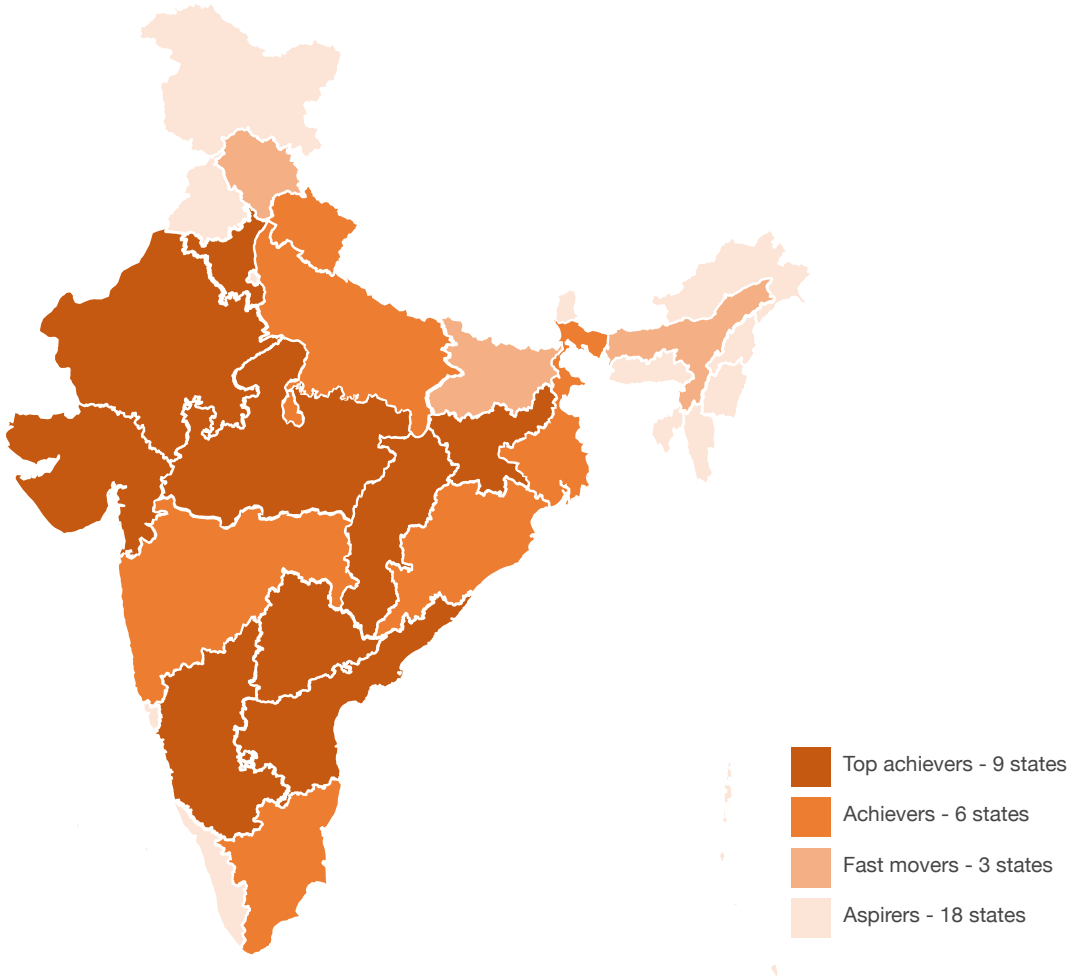
**Figure 2.16: Ranking of certain parameters in India in Ease of Doing Business Index**




Source: World Bank

[k] This map is not to scale. It is an indicative outline intended for general reference use only. The accuracy of this product is dependent upon the source data and therefore absolute accuracy for navigation or legal purposes can not be guaranteed.

**Figure 2.17: Business reform implementation scores across states[1]**




Source : Department for Promotion of Industry and Internal Trade

### Institutions: Business sustainability

Over the past five years, a focus on environmental and business sustainability has been prevalent in India and the world. In our investigation, we found that the impact of COVID-19 has favoured sustainability as people experienced immediate environmental improvement due to lockdowns; however, as business returns to normal, a more sustainable path will be considered only if it does not entail additional investments.

Leading global businesses are launching new initiatives such as 'Transform to Net Zero' to accelerate the transition to net-zero carbon emissions in the global economy by 2050. Given India's business connection with the global markets, as operators of software companies, as extensions of physical and digital supply chains, the country will need to move in this direction. In addition, a growing chorus of voices have suggested that the path out of this crisis and beyond needs to be a sustainable one. India, with a relatively low per capita $CO_2$ emissions, still has a very large carbon footprint. Unless it changes its current course, it will create damage to its local environments, where issues such as water scarcity and air pollution are matters of concern to all Indians.

[1] This map is not to scale. It is an indicative outline intended for general reference use only. The accuracy of this product is dependent upon the source data and therefore absolute accuracy for navigation or legal purposes can not be guaranteed.

## Themes for revival and growth – Business sustainability

Two key themes and trends in business sustainability can drive revival and growth in the medium term.

1. **Environmental sustainability through renewable energy**
   India seeks to address its environmental agenda by moving rapidly towards renewable energy. India is globally ranked 5th in terms of installed renewable energy (RE) capacity which is currently approximately 87 gigawatts (GW)[45]. Solar and wind are the two major sources and together have a potential of 1,000+ GW of RE in India[46]. The government's focus on environmental sustainability is evident from the fact that it has already set an ambitious target of 175 GW RE capacity by 2022[47] and 450 GW of RE capacity by 2030[48] (which is the world's most ambitious RE expansion plan). It also targets a 33 – 35% reduction in emission intensity of its GDP by 2030[49].

   India's commitment to environmental sustainability has led to an increase in foreign direct investment (FDI). This is evident from the FDI of US$ 3.7 bn in the non-conventional energy sector between 2014 – 18[50]. This is also the reason India was ranked the fourth most attractive renewable energy market in the world in 2019[51].

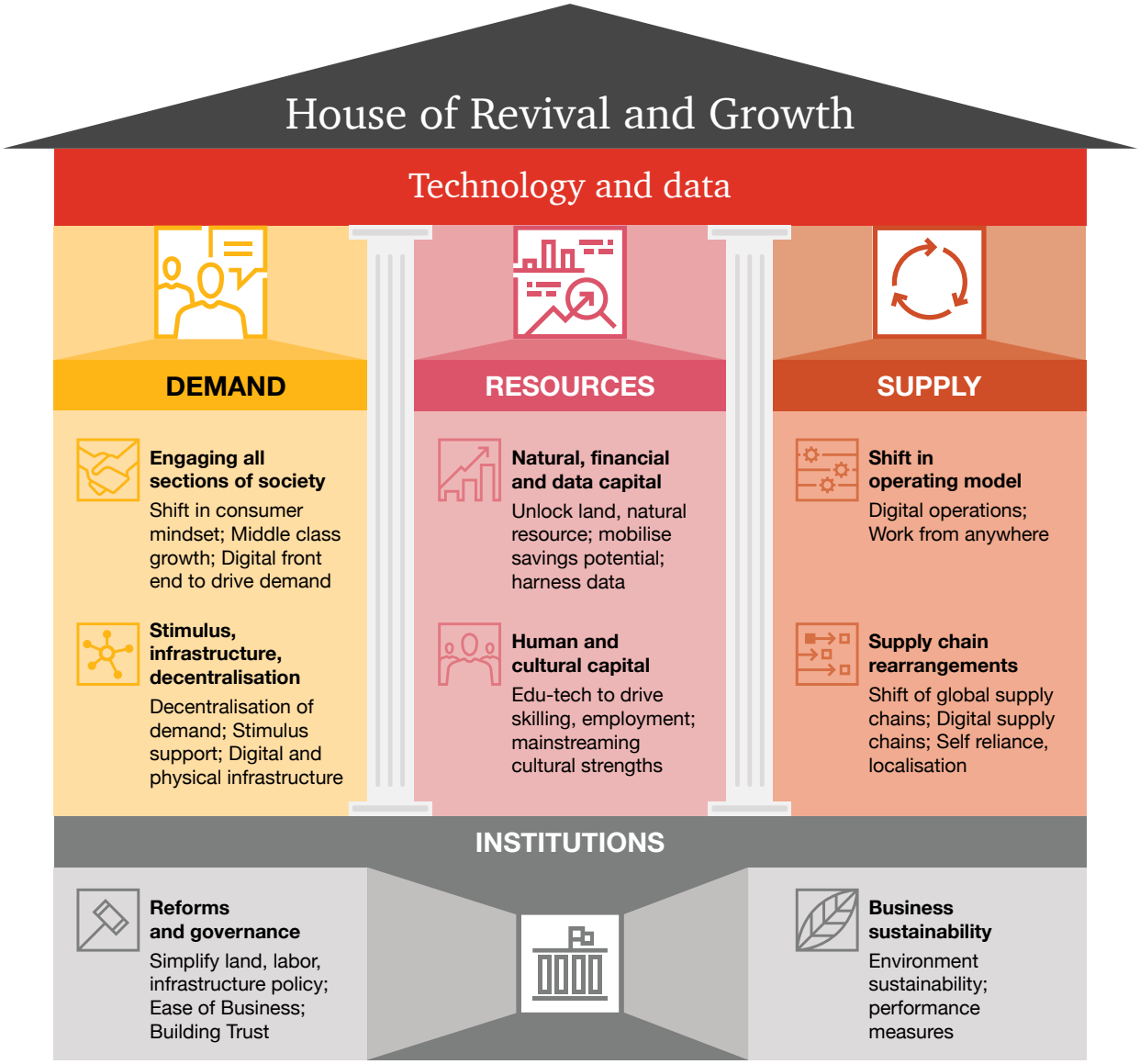
   Initiatives such as mandatory provisioning of 10% energy from RE sources for smart cities, green energy corridors and solar parks will need on-the-ground implementation. Enterprises will play a key role in delivering these sustainability initiatives and have already become more cognisant of their responsibility. However, owing to COVID-19, a number of such enterprise initiatives would require global partnerships for finance, R&D and capacity building. International Solar Alliance headquartered in India is one such example. It aims at mobilising US$ 1 tn of investments for global project by 2030[52].

2. **Sustainability as a key performance measure**
   Globally, companies are moving faster towards sustainability targets and India being part of this supply chain will have to comply with many of these standards. The big three global sustainability frameworks used by companies to report economic, environmental and social impacts are GRI (Global Reporting Initiative) standards, IIRC (International Integrated Reporting Council) framework and SASB (Sustainability Accounting Standards Board) standards[53].

   Given that the disclosure of sustainability metrics is largely unregulated and voluntary, companies pick and choose the reporting frameworks based on the data available and the needs of the disparate stakeholder audiences. For example, GRI standards are more outwards looking, considering the company's impact on the world, compared with the inwards-looking SASB, showcasing the world's impact on the company and financial performance.

   The United Nations Sustainable Development Goals (SDGs) are an influential evolving framework wherein 17 SDGs and 169 interlinked targets measure a variety of sustainable initiatives, including ending poverty and mitigating climate change. As a signatory (among 193 countries) to the collaborative commitment, the government of India uses the SDGs as a road map to formulate policies and regulations. Around 65% of Indian companies in 2019 (up from 35% the previous year) at the aggregate level reported mapping their goals with SDGs, including more than 90% of the companies in the information technology and energy sectors[54].

These key themes across the four pillars provide ample opportunities for quick revival and sustainable growth.




Source: PwC analysis

Chapter 3

# Sector-specific implications

In a day when you don't come across any problems – you can be sure that you are traveling in a wrong path.

– Swami Vivekanand

In the previous chapter, we identified 27 themes across the eight sub-pillars of 'House of revival and growth' framework. In this chapter, we look at the framework through a sector lens, to identify key implications across the nine key sectors and MSME segment for driving revival and growth. Together these nine sectors, Consumer and Retail, Healthcare and Pharmaceuticals, Logistics and Infrastructure, Power and Mining, Automotive and Industrial Products, Financial Services, Technology and Education, Government and Agriculture contribute roughly 75% of the overall GDP of India.

## 1. Consumer and Retail

Five key themes emerge in the Consumer and Retail sector for driving revival and growth in the medium term.

**Figure 3.1.1: Key sector specific themes**

| # | Pillar | Theme | Past (Before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Demand | Shift in consumer behaviour in the medium term | Status quo | Hygiene and wellness oriented, value consciousness, etc. |
| 2 | Demand | Digital front ends for interacting with customers | Physical channels with emerging digital front ends | Physical channels with accelerated digital front ends (including D2C[a]) |
| 3 | Demand | Decentralisation of demand | Growing contribution from semi-urban and rural centres | Accelerated growth from semi-urban and rural centres vs urban and metropolitan centres |
| 4 | Supply | Adoption of digital technologies across value chain | Emerging | Accelerated across value chain |
| 5 | Supply | Re-evaluation of retail portfolio and consumer experience | Emerging concept of omnichannel | Re-evaluation of retail portfolio, with omnichannel integrated stores |

Source: PwC analysis

### Shift in consumer behaviour towards hygiene and wellness

Demand for hygiene and wellness was growing in India even before COVID-19. As an example, the market for health and wellness in the food and beverage (F&B) sector grew at a CAGR of 14% from 2015 to 2019[1]. Driven by COVID-19 health and safety concerns, this trend will accelerate in the short term, leading to an increased demand across categories such as immunity boosters, sanitisers and disinfectants.

In the medium term, consumers' focus on hygiene and wellness is likely to manifest through three key sentiments, increasing the demand across multiple categories of products and services:

1. **Desire to 'eat well'**
   Categories such as branded packaged foods, immunity boosters, health foods, etc.
2. **Desire to 'look good'**
   Categories such as athleisure apparel, anti-microbial garments, etc.
3. **Desire to 'feel good/safe'**
   Categories such as wellness services, dust-free laminates, anti-microbial paints, etc.

[a] Direct-to-consumer

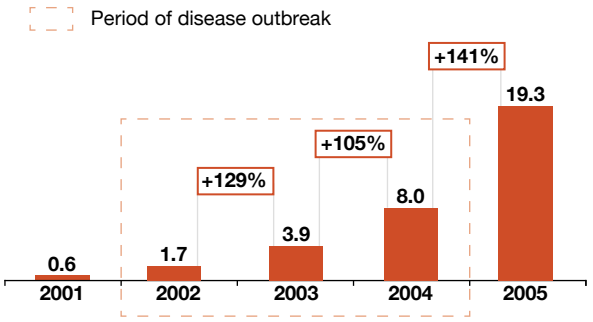
Across all focus categories, consumer purchase behaviour could result in **new category adoption** (such as consumer trial of nutraceuticals), **existing category realignment** (such as a consumer shift from non-packaged to packaged food) and **existing brand realignment** (such as a shift towards more trusted brands). In order to address these shifts, enterprises will need to invest in building new capabilities such as demand sensing and product development, while ensuring compliance with the regulations, especially around claims.

### Increased adoption of digital front end for interaction with customers

E-commerce in retail was growing in India before the COVID-19 crisis, driven by increasing internet and smartphone penetration. COVID-19 is expected to further boost online demand. According to Goldman Sachs, e-commerce growth in India is expected to rise upto 33% in 2021, up from 18% growth in 2020[2]. Similar growth was witnessed during the SARS[b] pandemic, which resulted in acceleration of digital front ends in the medium term (Figure 3.1.2)[3].

As this plays out, consumer goods as well as retail companies will need to ascertain how significant and sustainable the shift in demand is towards digital channels among the target consumers.
This in turn may require players to reconfigure their existing go-to-market strategies with an increased focus on digital front ends, while carefully evaluating which model best suits their business, whether that be third-party e-commerce or a direct-to-consumer model (Figure 3.1.3). Success will depend on the availability and capability of various partners, such as those in technology and logistics, as well as the ability of enterprises to build robust digital ecosystems.

**Figure 3.1.2: Online retail sales in China, SARS pandemic (bn Yuan)**




Source: United Nations Industrial Development Organization, PwC analysis

**Figure 3.1.3: E-commerce and online direct-to-consumer landscape**

| Third-party (3P) e-commerce | | |
|---|---|---|
| 01 | 02 | 03 |
| Omnichannel retail e-commerce | Specialty retail e-commerce | E-commerce marketplaces |
| ⊕ Wider customer reach leveraging scale of existing platforms/ marketplaces | | |
| ⊕ Faster speed of delivery driven by strong operational back ends | | |
| ⊖ Limited scope for brand differentiation and communicating unique value proposition | | |
| ⊖ Low consumer centricity as brand has no direct consumer connection with limited / no access to end consumer data | | |
| ⊖ Higher margin erosion for brand due to multiple intermediaries in the value chain | | |

| Online Direct-to-Consumer | | |
|---|---|---|
| 01 | 02 | 03 |
| Independent e-commerce store | Independent omnichannel store | Others |
| ⊕ Opportunity to differentiate brand and communicate unique consumer proposition | | |
| ⊕ High consumer centricity with brands having direct consumer access | | |
| ⊕ Greater control over supply chain and margins with limited number of intermediaries | | |
| ⊖ High cost of driving online traffic and customer acquisition | | |
| ⊖ High logistics costs limiting overall consumer reach and scale | | |
| ⊖ Increased back-end operational complexity | | |

Source: PwC analysis

[b] Severe Acute Respiratory Syndrome

### Decentralisation of demand towards India's hinterlands

A decentralisation in demand began before the COVID-19 crisis and is expected to accelerate in the medium term (see Chapter 2). As demand deepens and widens across the smaller markets within the hinterlands, companies need to re-evaluate market strategy to identify and prioritise new growth centres. This will also require development of a distinct consumer proposition, redesigning existing portfolio and pricing structure, with a focus on delivering better value at affordable prices. Success within micro-markets will, however, depend on the ability of players to develop robust sales channels and operating models to reach customers in an efficient and cost-effective manner.

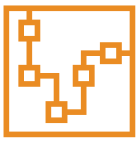
### Increased adoption of digital technology across the value chain

Four key drivers viz, better demand sensing, enhancing customer experience, providing greater supply chain visibility and achieving higher cost efficiencies have accelerated the shift towards digital across the value chain. These drivers will further gain prominence due to the COVID-19 crisis (Figure 3.1.4).

A 2019 study of grocery retailers in the US and Europe found a high correlation between digital maturity and revenue growth, with the top 25 most digitally mature retailers growing more than twice as fast as their peers[4]. Multiple use-cases of digital solutions exist in which enterprises have increasingly adopted digital to address ongoing shifts. Unilever leverages cloud and artificial intelligence technology to gain insights into consumer buying patterns and behaviour to enable better demand sensing[5]. Leading fashion retailers have increasingly adopted RFID (radio frequency identification) technology to improve inventory management at stores.

Players will need to invest in building new digital-enabled capabilities across operating processes, including demand sensing, price discovery, customer data analytics and last-mile logistics.

**Figure 3.1.4: Key drivers propelling the adoption of digital**

| | Drivers propelling the adoption of digital... | ...will get further accelerated due to COVID-19 |
|---|---|---|
|  | **Better demand sensing**<br>Effective use of digital to capture and analyse data would enable enterprises to create detailed customer segmentations, react faster to changing trends and forecast demand accurately | Rapid change in consumption patterns/ categories due to lockdown and uncertainty |
|  | **Enhanced customer experience**<br>Providing customers with new and personalised shopping experience is critical to ensure continued customer engagement | With limited footfall, and emergence of e-commerce channels, consumer retention will be more critical |
|  | **Greater supply chain visibility**<br>Visibility of the supply chain ensures greater control over each step | Increased concerns over the source of the product and the various touchpoints across the supply chain |
|  | **Higher cost effeciency**<br>Inefficiencies exist in the supply chain due to lack of automated systems and processes | Managing or restructuring costs to preserve cash and working capital will be critical |

Source: PwC analysis

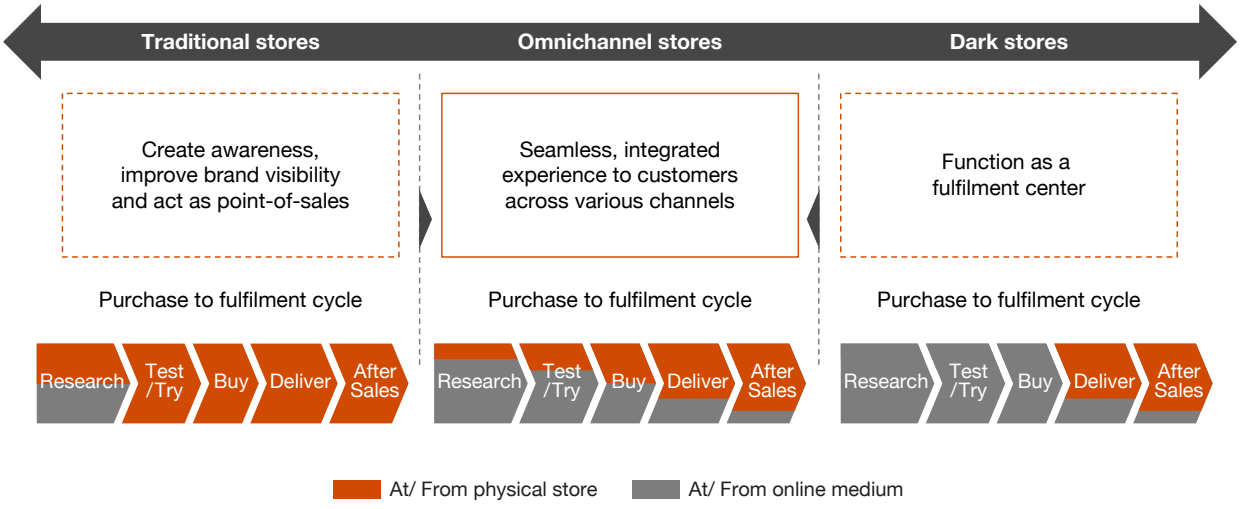
As consumers increasingly seek to interact with the brand in multiple ways, brands will need to find the sweet spot between the offline and online retail space through omnichannel.

**Viney Singh**
MD, Fabindia

### Re-evaluation of online and offline retail portfolio and consumer experience

Offline retail has been negatively impacted, owing to a rigorous lockdown and COVID-19 safety concerns, while the adoption of digital front ends have accelerated and may extend in the medium term. As per the PwC COVID-19 consumer survey (June 2020), 50-55% of respondents have expressed a lower level of comfort in visiting physical retail shops for household supplies, apparel and durables, in the near future as the market reopens. Offline shopping behaviour is also expected to evolve as consumers prioritise safety and adopt digital channels for product discovery and research, to minimise in-store trials.

**Figure 3.1.5: Future evolution of retail landscape (illustrative)**




Source: PwC analysis

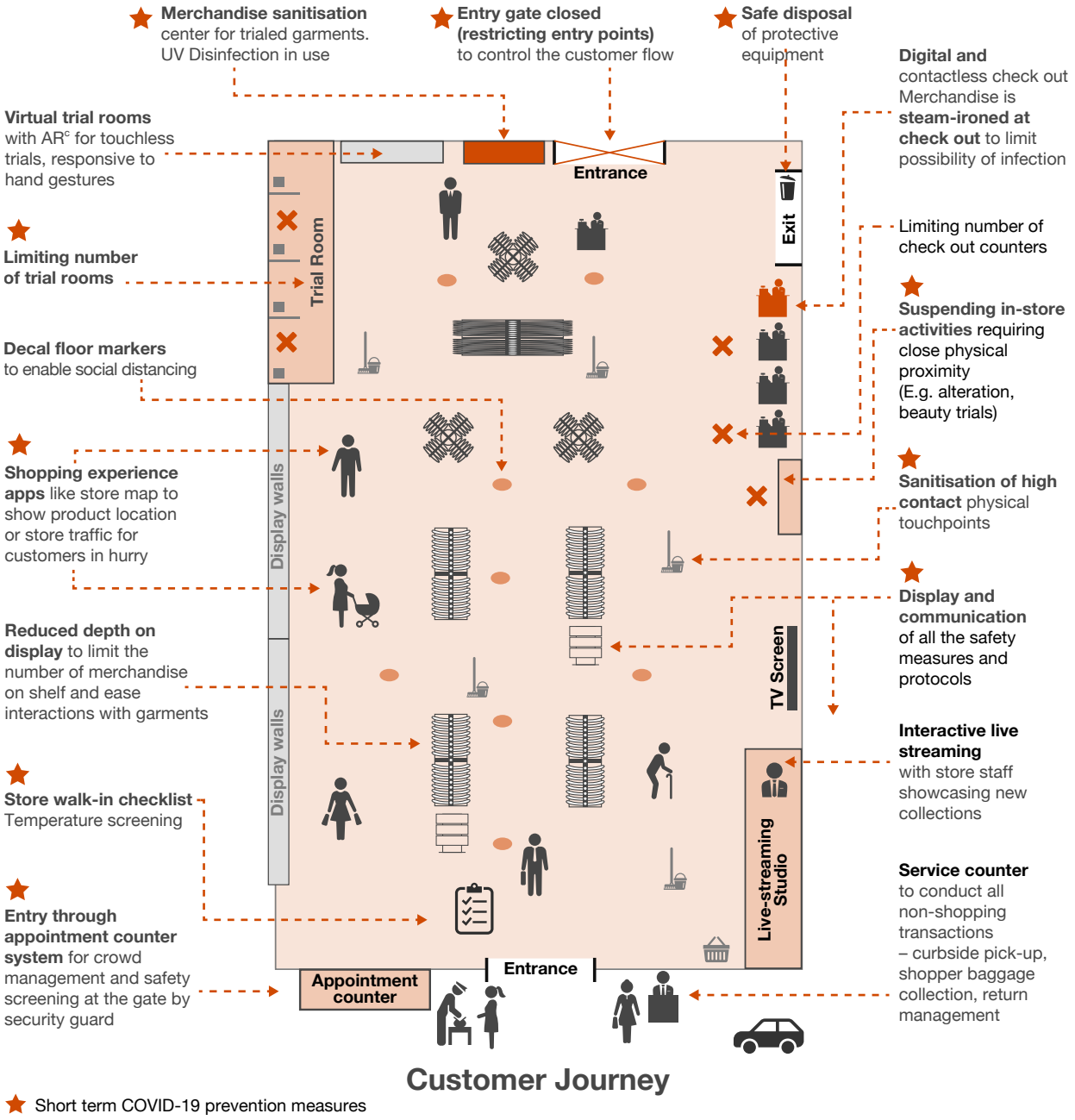
To address these shifts, retailers will need to re-evaluate consumer shopping journeys to determine channel preferences across offline, online and omnichannel options in the retail sector. This may require a reassessment of the existing retail portfolio and its purpose (traditional vs omnichannel vs dark stores) to maximise utility while evaluating a shift towards omnichannel (Figure 3.1.5).

In addition, retailers will need to invest in driving customer engagement within online channels by focusing on three key areas:

1. Offering customers personalised information online, to facilitate research and purchase decision
2. Recreating 'in-store' experience online
3. Building an online product or service ecosystem / community

Offline consumer shopping experience will also have to be reimagined in the post–COVID-19 world to make it safer for consumers and re-instil confidence in offline shopping (Figure 3.1.6).

## Figure 3.1.6: Offline retail customer journey (post–COVID-19)




Source: PwC analysis

[c] Augmented reality

## 2. Healthcare and Pharmaceuticals

Five key themes emerge for the healthcare and pharmaceutical sector to drive revival and growth.

**Figure 3.2.1: Key sector specific themes**

| # | Pillar | Theme | Past (Before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Demand | Health expense coverage for missing middle class | Lower insurance penetration among the middle class | Alternative health expense coverage mechanism especially for middle class |
| 2 | Supply | Increase in adoption of virtual care | Telemedicine adoption growing | Acceleration in growth for telemedicine |
| 3 | Supply | API manufacturing to become self reliant | Dependence on other countries for API | Self reliant to meet domestic demand |
| 4 | Institutions | India needs to create innovation ecosystem | Process efficiency model | Progress towards innovation model |
| 5 | Resources | Increase in data collaboration and analytics | Untapped opportunities in data | Expedite implementation of National Digital Health Blueprint |

Source: PwC analysis

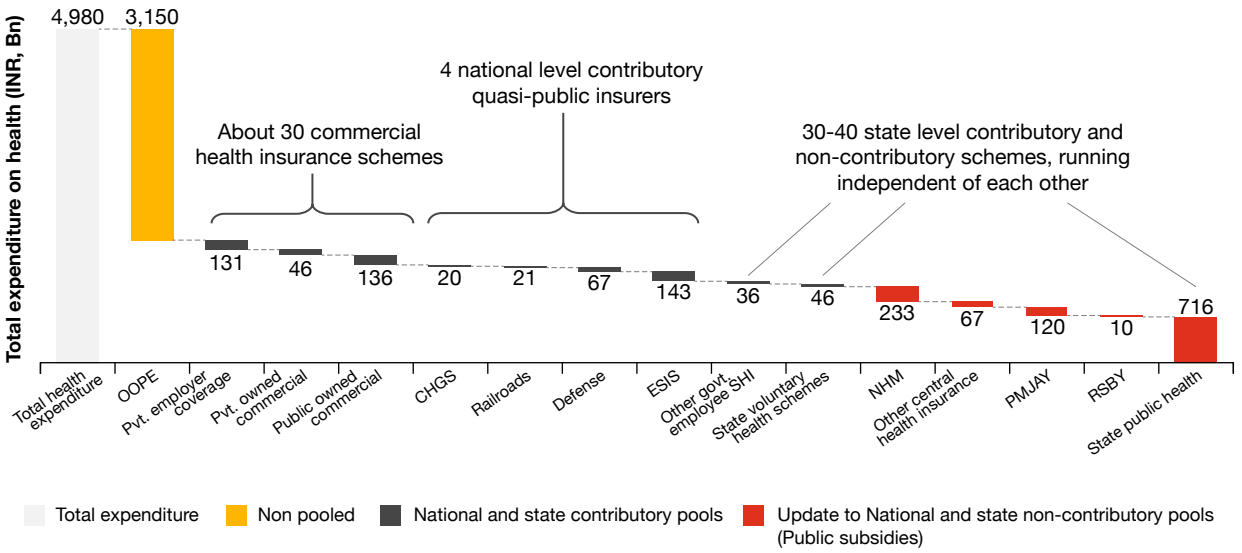
### Health expense coverage for the missing middle class

Out-of-pocket expenses (OOPE)[6] as a share of total health expenditure in India is about 63%, compared with 36% in China and 27% in Brazil. Although the poor and vulnerable are covered by the government's Ayushman Bharat scheme and the upper and upper-middle classes are generally covered through self or employer's insurance schemes, the middle class is left exposed with limited insurance coverage and high OOPE.

Key reasons for lower penetration of insurance include a highly fragmented risk pool (Figure 3.2.2), lower fiscal allocation, fragmented service provider network and limited awareness. Low insurance penetration has resulted in a higher share of household spend on healthcare. This has been compounded due to lower fiscal allocation from the government towards healthcare.

Central government, state governments and the Insurance Regulatory and Development Authority of India (IRDAI) have key roles to play to enhance coverage. IRDAI needs to modify regulations such as minimum capital requirements, while state governments can popularise health schemes.

## Figure 3.2.2: Landscape of risk pooling in India[d]



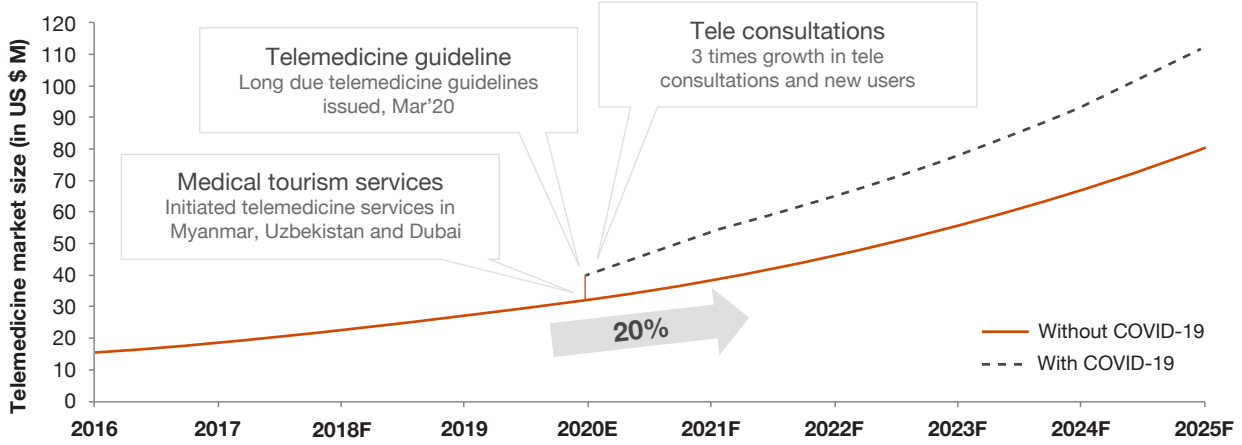

India has highly fragmented and low level (37%) of risk pooling. System wide inefficiency of fragmentation leads to: 1) Limited scope of redistribution of funds; 2) High admin costs; 3) Inability to achieve universal health coverage

Source: National Health Account Employee State Insurance Scheme report 2015, World Bank, WHO

### Increase in adoption of virtual care

The telemedicine market was growing at a CAGR of 20% in the four years leading up to COVID-19[7]. The government's issuance of telemedicine guidelines in March 2020, coupled with a focus on 'low-touch' delivery models thanks to the effects of COVID-19, has led to an acceleration in the adoption of telemedicine (Figure 3.2.3). This has the potential to increase healthcare access significantly by leveraging the current healthcare service provider network. That said, operating processes and workflow may need to be updated to accommodate virtual care. Also, regulations for data privacy and patient liability are required to ensure sustained growth.

## Figure 3.2.3 : Telemedicine market growth




Source: IBEF, Ministry of Health and Family Welfare, PwC analysis

[d] Insurance schemes: Provided by central govt., state govt. or commercial (e.g., pvt. employer) to protect different populations, which leads to fragmented risk pool; CGHS: Central Government Health Scheme, ESIS: Employee State Insurance Scheme, SHI: Social Health Insurance, NHM: National Health Mission, PMJAY: Pradhan Mantri Jan Aarogya Yojana, RSBY: Rashtriya Swasthya Bima Yojana

India is the pharmacy of the world. A decade back we were self-reliant, however, we are currently dependent on low cost API alternatives from other countries. We need to and can become self reliant again.

**Dr. Harish Pillai**
CEO - Aster India, Aster DM Healthcare Ltd.

### Active pharmaceutical ingredient (API) manufacturing to become self-reliant

India imports about 70% of its APIs from China, including key APIs such as amoxycillin and paracetamol, which get priced 25–30%[8] cheaper if purchased from China than India. Supply was disrupted due to pandemic, prompting the need to become more self-reliant. Additionally, the changing geopolitical scenario demands that India becomes self-sufficient.

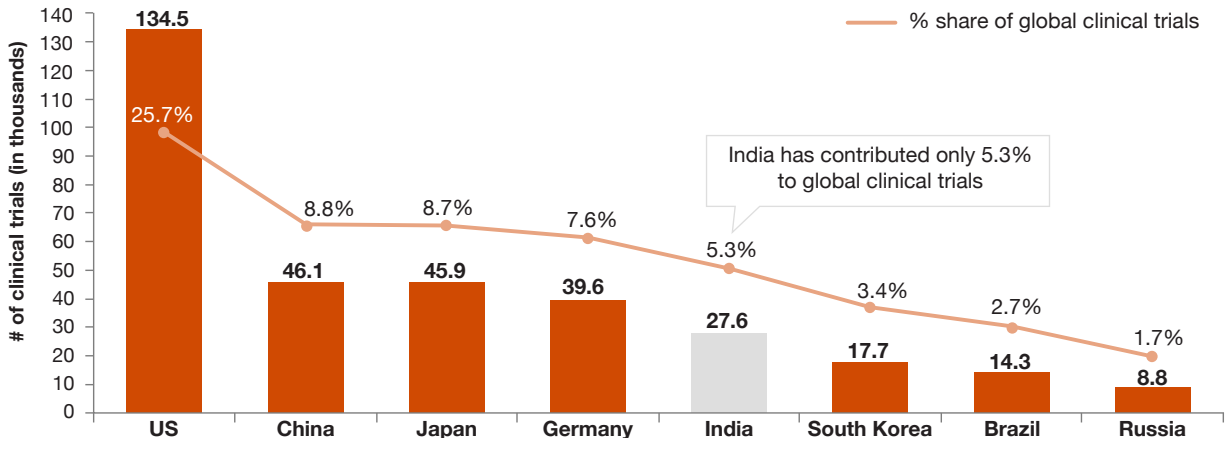
The government, in March 2020, launched INR 70 bn[9] scheme to boost local manufacturing of APIs, which covered the building of infrastructure, production-linked incentives and expediting of environmental clearance. Although this is a welcome step, a few more measures such as expediting land clearances and provisions for pharma parks should be undertaken as well.

### Establish an innovation ecosystem in India

There are several gaps in the Indian innovation system in R&D, intellectual property rights and manufacturing, clinical trials, human capital, regulations and availability of infrastructure. India's total R&D expenditure is only 0.7% of GDP; by contrast, China spends 2.2% of its GDP on R&D[10]. The contribution of Indian clinical trials globally has been only 5.3% in the last decade, with limited phase I and II trials, leading to low numbers of new chemical products (Figure 3.2.4). In the past 20 years, India has contributed only 0.4% to the total global patents in health and pharma (Figure 3.2.5).

While strengthening the country's R&D ecosystem may be a long term goal, in the medium term there is a scope to focus on manufacturing innovation and quality improvement through automation, clinical trials in CRAMs (contract research and manufacturing), and screening and diagnosis in med-tech. Such innovations require lower capital and are less risky investments than new drug discovery. To achieve this potential, India must develop adherence to standards in manufacturing and clinical trials, bolster infrastructure and skills by providing financial incentives, and harmonise Indian regulations with global ones.

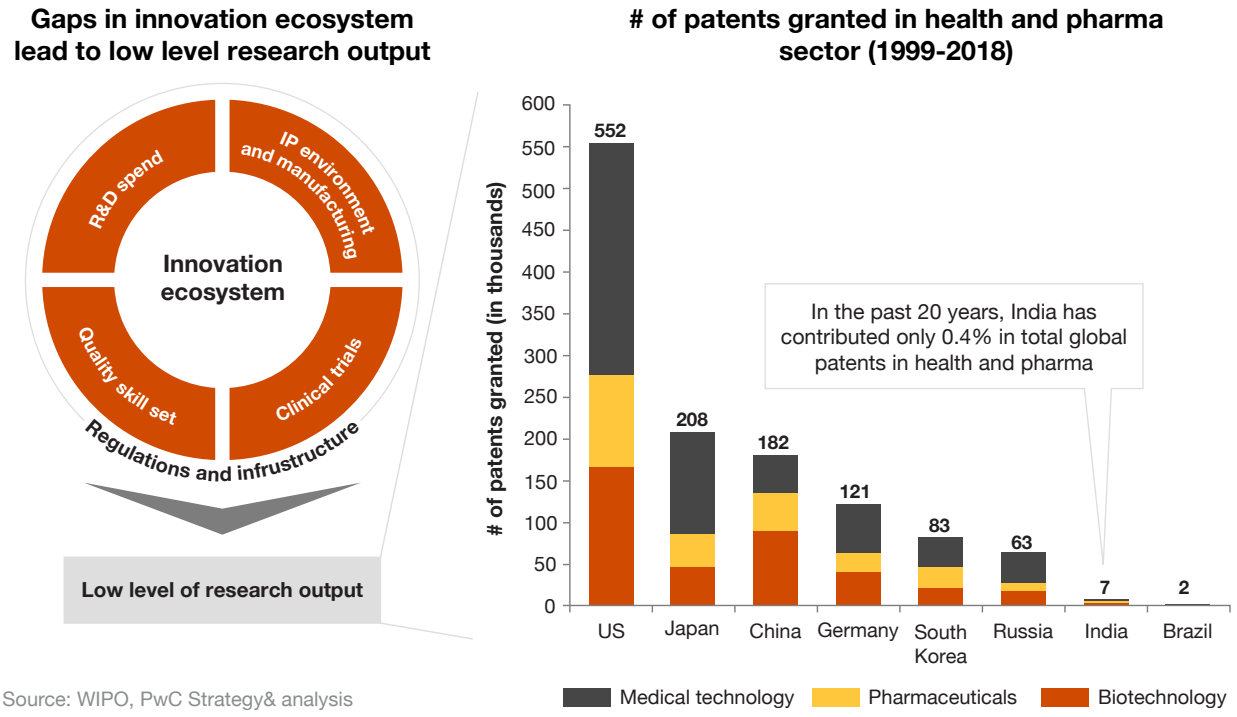
**Figure 3.2.4: Clinical trials registered on ICTRP from 1999 to 2019[e]**




Source: WHO International Clinical Trials Registry Platform

[e] As registered in International Clinical Trials Registry Platform 1999–2019

Figure 3.2.5: Gaps in Indian innovation ecosystem




Source: WIPO, PwC Strategy& analysis

### Increase in data collaboration and analytics

The availability of quality healthcare data provides abundant opportunities for data-driven policy formulation, enabling efficient service delivery, evidence-based patient care, health monitoring, fraud detection, and facilitation of R&D. Unfortunately, India has had limited success in realising these opportunities due to access to limited data. The need for data was also acutely felt during COVID-19.

Realising this need, the Ministry of Health and Family Welfare took the right step by creating a National Digital Health Blueprint in May 2020 to link healthcare provider systems and promote digital health. Government needs to ensure successful and accelerated implementation of the blueprint. Timely disbursement of funds for technology implementation, ensuring data protection, training healthcare workforce and incentivizing private hospitals to adopt are some of the key steps to be taken by the government.

## 3. Logistics and Infrastructure

Five key themes emerge in the logistics and infrastructure sector for driving revival and growth in the medium term.

**Figure 3.3.1: Key sector specific themes**

| # | Pillar | Theme | Past (Before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Demand | Shift to multi-modal transport to reduce logistics costs and dependencies | Emerging shift towards multi-modal | Multi-modal development gets accelerated |
| 2 | Resources | Private-sector investment in infrastructure | Declining | Increasing by overhauling risk management framework |
| 3 | Resources | Data collaboration and protection efforts to reduce information asymmetry and inefficiencies | Limited efforts towards data collaboration | Acceleration towards data transparency and collaboration |
| 4 | Supply | Adoption of digital technologies across value chain | Emerging | Accelerated across value chain |
| 5 | Institutions | Institutional and governance reforms in factors of production critical to drive and sustain growth | Status quo | Improved enabling environment |

Source: PwC analysis

### Shift to multi-modal transport

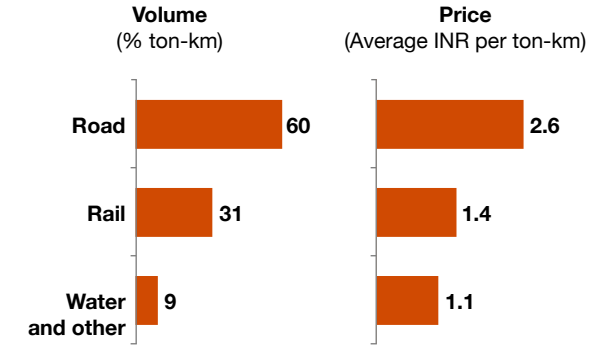
India's logistics expenditure accounts for 13–14% of GDP, compared with an average of 9-10% for developed economies[11]. One of the major reasons for this is the high proportion of transportation through road, and under-penetration of cost-efficient rail and in-land waterways (Figure 3.3.2).

Key issues affecting rail transport are infrastructure availability, seamless last-mile connectivity, nodal storage and distribution facilities. India has one of the highest rail passenger-km to rail freight ton-km ratios (Figure 3.3.3).

COVID-19 induced lockdown exposed dependency risk on road transport, illustrating the need for multi-modalism. The draft National Logistics Policy has a focus on multi-modalism, aiming to reduce the modal share of the road network from 60% in 2017 to 25-30% in 2030.[12]

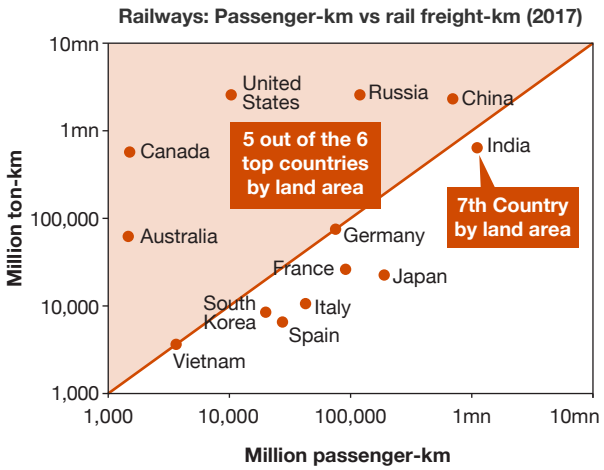
Multi-modalism can enable end-to-end logistics solutions, which will result in a higher share of wallet for the logistics service providers and will also reduce the overall logistics cost for the end customer. Enabling complex operating models to accommodate integrated service offerings, capital expenditure availability to enable infrastructure at hubs and spokes, and the need for regulatory support for smooth integration of railways are all major dependencies in achieving this target.

**Figure 3.3.2: Share of traffic and price of different modes of transport**




Source: Draft National Logistics Policy and Niti Aayog Report 2018[13]

### Figure 3.3.3: Rail passenger-km vs rail freight-km across countries

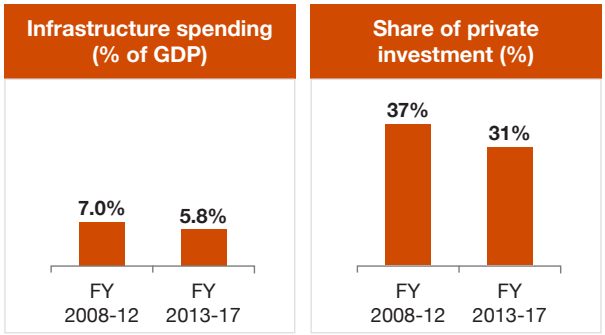



Source: World Bank, 2017

### Private-sector investment in infrastructure

The infrastructure sector has been facing challenges in attracting private investment due to inadequate risk allocation across projects, lack of clear policies around contract renegotiations, and poor land dispute resolution processes. For hybrid annuity model[f] (HAM) projects, the National Highway Authority of India (NHAI) opened bidding after acquiring 80% of the total land required. Despite that, 34 of 100 plus projects were delayed due to land acquisition challenges[14]. These risks can lead to a high cost of capital for infrastructure projects, which trickles down in the form of higher fares for customers.

### Figure 3.3.4: Falling share of private investment in infrastructure




Source: CRISIL report[15]

Regulatory efforts to enable efficient risk-sharing mechanisms can lower the cost of capital. Regulatory bodies need to adopt measures for clear identification and detailing of risks at the project preparation level, for identification of the best risk-sharing mechanisms, and for designing provisions for contract renegotiations.

### Ameliorating inefficiencies through data collaboration and protection

Information asymmetry and fragmentation arise from inefficient data collection and collaboration across all major verticals of the logistics, infrastructure and mobility sectors. In India, the annual cost of information asymmetry in the road freight transportation sector alone is estimated at around US$12bn-US26bn.[16]

Significant inefficiencies exist in the inherently complex export–import (EXIM) value chain due to limited data collaboration (e.g., stand-alone web-based platforms), and dependency on manual intervention for process completion and data entry. Data utility platforms allow all players in the value chain to share data and offer application programming interfaces (APIs), which allow data interoperability and transparency, thereby removing information asymmetry and improving efficiency.

In India, similar trends are emerging with the development of data collaboration platforms such as PCS 1x[17], an initiative by Indian Ports Association to migrate from a traditional port community system to an integrated version with an expanded stakeholder base and planned inclusion of land-side logistics. However, employee skilling in managing data and regulatory supervision to ensure data protection are critical for successful adoption of such platforms.

### Adoption of digital technologies across the value chain

Adoption of digital technologies and automation in logistics sector is gaining traction during the COVID-19 crisis owing to operational disruption caused by the pandemic. Multiple use cases of a data sharing platform to allow data sharing, storage and analytics have emerged. Digital technology can improve asset utilisation, add resiliency in processes by reducing manual intervention, and drive customer centricity by integrating across the value chain. High correlation has been observed between countries with more widespread digital adoption and their logistics performance (Figure 3.3.5)[g].

Logistics service providers are focusing on developing their own digital roadmaps for integrating assets and services to achieve process and operational efficiency.

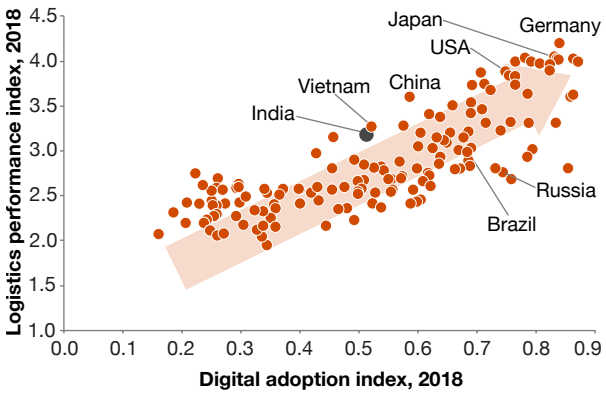
[f] High correlation of 0.81 is observed between 'Digital adoption index' (DAI) and Logistics performance index (LPI)
[g] In hybrid annuity model, part of payment is made in fixed installments, while the rest of the payment is variable and depends on value of the asset created and performance of the developer.

**Professionalisation and accreditation of the logistics and infrastructure industry will enhance transparency and efficiency of operations thereby improving access to long-term commercial financing.**

**Arnab Bandopadhyay**
Lead Transport Specialist, World Bank

However, upskilling of employees, and integration with the trade partners across the value chain is necessary to fully leverage the benefits of digital and automation technologies.

### Figure 3.3.5: Correlation between digital adoption and logistics performance




Source: World Bank

### Institutional reforms in land

While India has improved on its global 'Doing Business' rankings, it still fares poorly when it comes to the 'registering property' element of the Ease of Doing Business Index (EoDB), with a ranking of 154 out of 190 countries[18]. 66% percent of Indian civil court cases are related to land disputes[19]. Of the total infrastructure projects, 34% are experiencing cost overruns up to 40%[20].

Land acquisition is one of the key challenges in India. Adding to it, digitisation of land records has been slow; only four states have digitised all stages of land registration[21]. Fragmentation of land parcels, multiple ownership, presumptive ownership of deeds and challenges arising out of administrative non-compliance are reasons for poor regulatory efficiency.

### Figure 3.3.6: India's standing in property registration[h]

| India currently stands at 154 out of 190 countries in Registering property' (Doing Business element) | | | |
|---|---|---|---|
| | **China** | **Vietnam** | **India** |
| **Number of procedures to register property** | 4 | 5 | 9 |
| **Cost (% of property cost)** | 4.6 | 0.6 | 7.8 |
| **Time required to register property (in days)** | 9 | 54 | 58 |
| **Quality of land administration index (0-30)*** | 24 | 14 | 10.8 |

* Measured by World Bank based on reliability of infrastructure, transparency of information, geographic coverage, land dispute resolution, and equal access to property rights

Source: World Bank Ease of Doing Business Report, 2020[22]

[h] Metrics are evaluated for cities Mumbai and Delhi in case of India, for cities Beijing and Shanghai in case of China, and for Ho Chi Minh City in case of Vietnam.

## 4. Power and Mining

Five key themes emerge in the power and mining sector for driving revival and growth in the medium term.

**Figure 3.4.1: Key sector specific themes**

| # | Pillar | Theme | Past (Before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Demand | Shift in consumer behaviour and front-end digital empowerment in the medium term | Emerging | More consumers becoming prosumers |
| 2 | Demand | Increased power demand due to decentralisation, stimulus and flagship government programs | Emerging | Accelerated across all tiers and value chain |
| 3 | Resources | Enhanced focus on effective utilisation of India's natural resources to spur growth | Emerging | Reduced import dependency to achieve self-sufficiency |
| 4 | Resources | Distribution companies (DISCOMs) need revenue assurance while improving their operational efficiencies | Low tariffs and outstanding payables/receivables | Improved revenue assurance and operational efficiency |
| 5 | Institutions | Power procurement strategy needs to be in-sync with demand requirements across regions | Capital intensive projects not completely aligned with sector requirements | Efficient utilisation of capital by accurate forecasting and effective planning |

Source: PwC analysis

### Shift in consumer behaviour and front-end digital empowerment

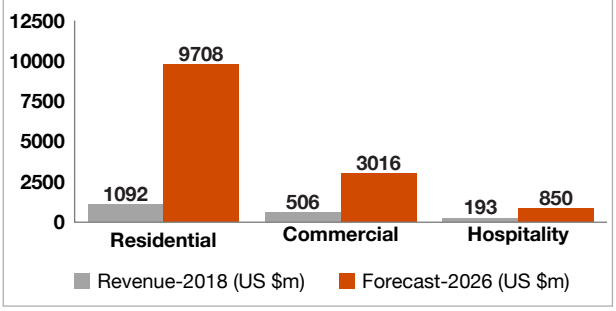
Evolution in localised power generation technologies has created 'prosumers'[i], reducing dependence on grid supply. With falling solar module prices ($0.18/wp[j] in FY 20), which is expected to fall even more (approximately 20% by the end of FY 21[23]), and rising grid tariffs for commercial and industrial (C&I) customers[24], power generation is increasingly becoming democratised. The Government's aggressive renewable generation targets propelled by competitive RES (Renewable Energy Sources) prices, supportive policies, and incentives such as provisions for captive generation, net metering and PM KUSUM[k] scheme are expected to considerably impact consumer behaviour going forward.

Also, consumers are becoming empowered due to front-end digitalisation, and are demanding higher transparency, flexibility and accountability from utilities. New-age technology interventions (Figure 3.4.2) including Internet of Things (IoT), smart automation, smart metering, smart grids, digital payments and trading platforms will significantly increase consumer engagement, enabling power procurement at competitive tariffs. The recent digital initiatives and innovations (Figure 3.4.3) by the government have enabled transparent billing, and increased accountability from utilities, further empowering customers.

[i] A person who consumes and produces a product. In this case, consumers also taking up generation of power
[j] watt peak, used for PV (photo voltaic) plants for peak power
[k] PM KUSUM: Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan scheme under the Ministry of New and Renewable Energy

## Figure 3.4.2: Enabling new age technology interventions

### India smart automation/energy management market




Residential segment dominates the market (32.4% CAGR); Potential to reduce energy costs by 90%

### Other technology interventions

- The real-time market (RTM) trading platforms for electricity transactions started on June 1, 2020.
- Government has planned to install 250m prepaid smart meters with an investment of US$ 21 bn over next 3 years. 1.2m meters have been installed in 4 states by EESL (Energy Efficiency Services Ltd.) (Feb, 2020).
- Government has issued a national draft policy on RES based Smart Mini & Micro Grids - 10K Grids with 500 MW capacity connecting 237m people by 2022.

Sources: Allied Market Research (India Home Automation Market-July 2019), Bloomberg[25], Powerline Magazine[26]

## Figure 3.4.3: Innovations and digital initiatives by government

- Vidyut PRAVAH mobile app provides highlights of the power availability in India on real time basis
- SAUBHAGYA Portal for tracking Pradhan Mantri Sahaj Bijli Har Ghar Yojana – 'SAUBHAGYA' Scheme
- Transmission App for Real Time Monitoring and Growth (TARANG) Portal for monitoring the progress of transmission system in the country
- Unnat Jyoti by Affordable LEDs for All (UJALA) web portal and mobile app for tracking developments in the scheme
- National Power Portal (NPP) for collation of data from generation, transmission and distribution utilities and dissemination of information
- Battery storage and power utility: Utilities in future are expected to switch to large battery banks as an alternative to building new power plants
- DEEP (Discovery of Efficient Electricity Price) e-Bidding and e-Reverse auction portal for short and medium term procurement of power by DISCOMs
- Ujwal DISCOM Assurance Yojana (UDAY) dashboard and mobile app captures progress made by distribution utilities under UDAY scheme
- Payment Ratification and Analysis in Power procurement for bringing Transparency in Invoicing (PRAAPTI) web portal and mobile app for generators
- Tech-enabled DISCOMs for 24X7 supply:
  - Advanced meter data management and infrastructure – Govt. to have 100% smart meters by 2022
  - Smart grid and GIS connected with IoT (Internet of Things)
  - Advanced business analytics and forecasting
  - Leveraging blockchain technology for distributed energy generation and supply

Sources: National Power Portal, Ministry of Power, PwC analysis

### Power demand will increase owing to decentralisation of the economy, stimulus and flagship government programmes

Recent government stimulus for agriculture and micro, small and medium enterprises (MSMEs) along with flagship programmes like 'Make in India' and 'Aatmanirbhar Bharat' are expected to drive power demand (Figure 3.4.4). Subsidised electricity, with non-metered connections for agriculture creates immense pressure on state governments to pay subsidy bills, necessitating checks and balances for appropriating power subsidies (Figure 3.4.5).

For example, the total subsidy bill of Punjab State Power Corporation Ltd. (PSPCL) in 2020–21 increased by approximately 10% to INR 164 bn from the previous year. The power subsidy to agriculture alone amounted to INR 68 bn (40% of total)[27].

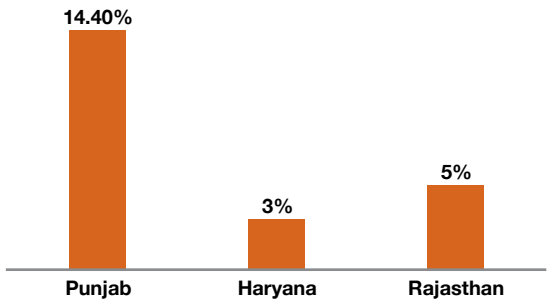
Similarly, the current stimulus to MSMEs will increase electricity demand. While these enterprises pay high tariffs, the possibility of delayed and missed payments due to the current economic crisis may increase challenges faced by distribution companies (DISCOMs).

**Figure 3.4.4: Stimulus and Government initiatives driving power demand**

**Agriculture**

- Electricity demand peaks' in some states increased ahead of the sowing season (May 2020)

**Peak demand (May 2020) % increase from last year**




- Lockdown and reverse migration (owing to COVID-19) have revived the focus on agriculture
- **Aatmanirbhar Bharat** stimulus allotted to farmers will boost agriculture sector and associated power demand

**Industry**

The push to indigenise industries and Government initiatives such as **'Make in India', 'Aatmanirbhar Bharat'** will boost domestic industries, leading to increased power demand

**Government Initiatives for Industry**

- Dedicated freight corridors + Indian railways 100% electrification will increase power demand from 2000 MW (2018) to 4000 MW by 2022
- National infrastructure plan has estimated INR 1.5tn investment in renewable energy and INR 1.1tn in thermal power by FY21
- Government of India target of 30% Electric Vehicle (EV) adoption by 2030 will increase the electricity demand from 79.9 GWh in 2020 to 69.6 TWh by 2030
- State governments such as Maharashtra, Gujarat, Karnataka, Uttar Pradesh, Telangana, Tamil Nadu have announced several measures to improve EoDB and provide relief to manufacturers/ industries across sectors

**MSME Stimulus**

- **Aatmanirbhar Bharat** stimulus allotted to MSMEs will boost power demand from industrial and manufacturing enterprises

Sources: RBI, CRISIL, PwC analysis, Invest India, Economic Times[28], Mint[29], The Hindu[30]

**Figure 3.4.5: Recent developments could resolve current problems in subsidies**

| | |
|---|---|
| **DBT transfers (Agriculture)** | • Farmers will pay the bill for the power consumed; away from 'free power' system<br>• Meter would be installed on each tube well |
| **Smart Metering** | • Smart meters enable two-way communications between consumers and utilities, providing real time view of energy consumption which can help optimise subsidies<br>• Under the government vision, the target is to cover 100% agricultural consumers (who are mostly unmetered in the current scenario) |
| **Encouraging RES** | • Under PM KUSUM Scheme (Jan 2020), Government of India offers 90% subsidy on solar units for agriculture feeders/pumps<br>• Punjab State Government stipulates that low solar energy costs will reduce subsidy bills and the cost of solar installation will be recovered in approx. 3 yrs. |

Sources : PwC analysis, Krishi Jagran[31], The Times of India[32]

### Institutional planning and utilisation required for enabling mining sector

India, while a net exporter of some minerals, depends on imports for several base minerals: bulk, non-bulk, rare earths and strategic. India's push towards electric vehicles and renewable energy would further require medium and high technology manufacturing capabilities. As a result, strategic planning and utilisation of resource reserves would be critical to avoid supply risks and push self-reliance across key minerals. (Figure 3.4.6).

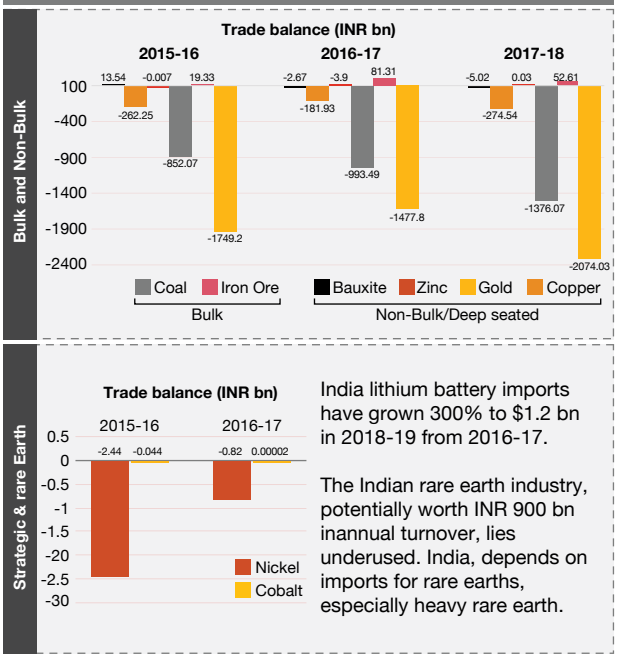
India is taking concerted actions in strengthening its capabilities in R&D and regional mineral exploration (with creation of a national geoscientific data repository) along with augmenting privatisation efforts and overseas acquisitions. Some import dependence, however, is likely to continue for minerals such as high-grade coking coal, lithium, cobalt and rare earths.

A centralised institution with an integrated planning approach will be critical in framing future strategy for holistic, data-driven growth in this sector.

## Figure 3.4.6: India's dependence on imports and likely impact of increased manufacturing

**Increased manufacturing capability may create critical shortage of non-fuel minerals for future**

**Besides bulk minerals such as iron ore, India relies on imports for most of the deep seated & rare earth minerals**



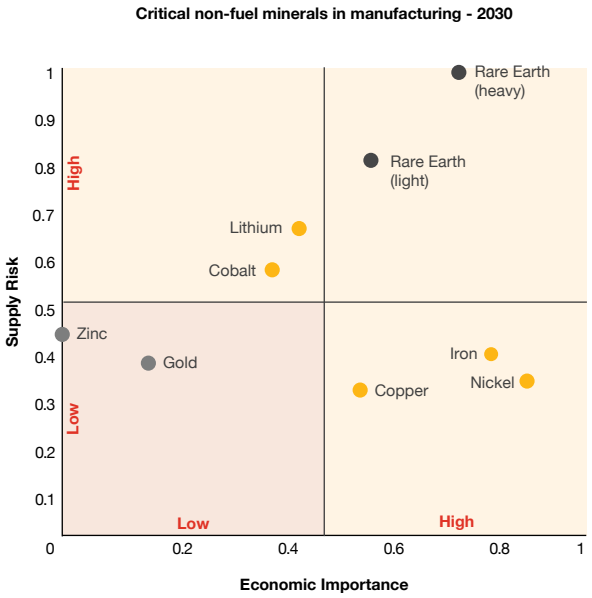




India lithium battery imports have grown 300% to $1.2 bn in 2018-19 from 2016-17.

The Indian rare earth industry, potentially worth INR 900 bn inannual turnover, lies underused. India, depends on imports for rare earths, especially heavy rare earth.

**Current push to increase manufacturing of medium to high tech products, components for electric vehicles and renewable energy equipment**

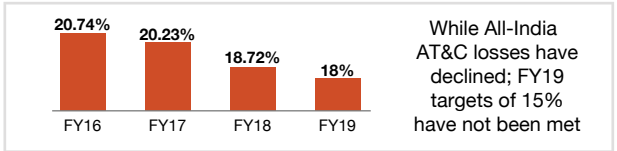



Sources: Indian Bureau of Mines[33], CEEW[34], The Times of India[35], The Economic Times[36], PwC analysis

### Distribution Companies (DISCOMs) need revenue assurance while they improve their operational efficiencies

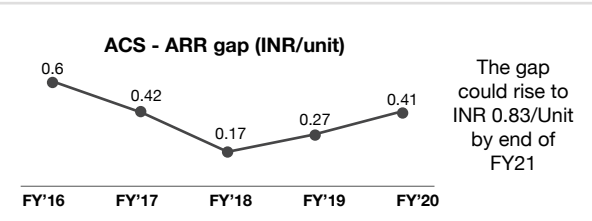
COVID-19 has resulted in slowed revenue growth due to weak demand. Additional losses incurred have worsened the gap between average cost of supply (ACS) and average realisable revenue (ARR) for DISCOMs (Figure 3.4.7). Major factors affecting revenues include low tariffs for agriculture and residential users compounded by cross-subsidisation[I], late disbursement of subsidies, and challenges in billing and payment collection due to COVID-19.

## Figure 3.4.7: Increasing ACS–ARR gap and below target AT&C (Aggregated technical and commercial) losses




While All-India AT&C losses have declined; FY19 targets of 15% have not been met

Investments in smart meters and upgraded infrastructure would help in reducing AT&C losses




The gap could rise to INR 0.83/Unit by end of FY21

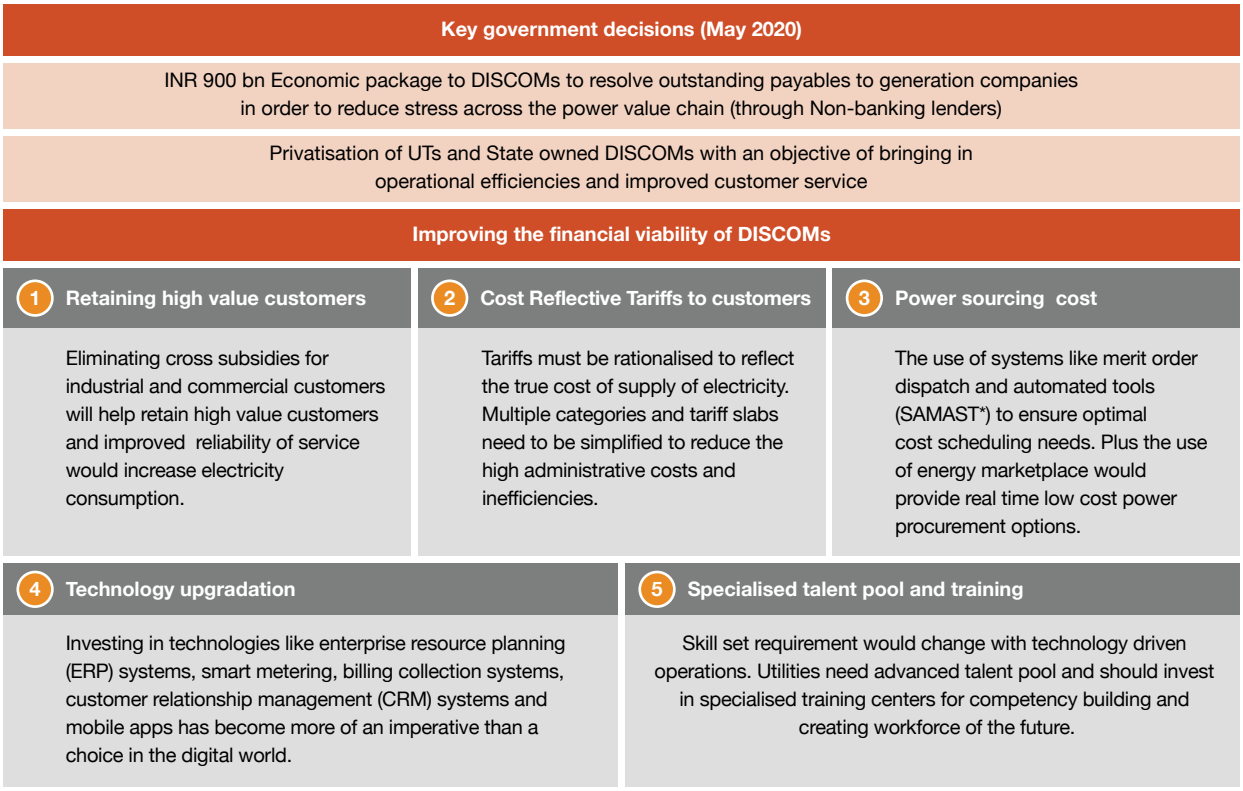
**Due to COVID-19, DISCOM revenues are estimated to decline 13.1% year-on-year (YoY) to INR 6800 bn in FY21**

**DISCOM losses are forecasted to increase by 67-93% in FY21 from ~INR 300 bn in FY20**

Sources: PwC analysis, UDAY[37], IEEFA[38], The Economic Times[39], The Financial Express[40,41]

[I] Cross- Subsidisation- charging higher prices to one group of consumers to artificially lower prices to another group

**Figure 3.4.8: Key factors in improving the financial viability of DISCOMs**




*SAMAST- Scheduling, Accounting, Metering and Settlement of Transactions in Electricity

Sources: Ministry of Power, National Portal of India, PwC analysis

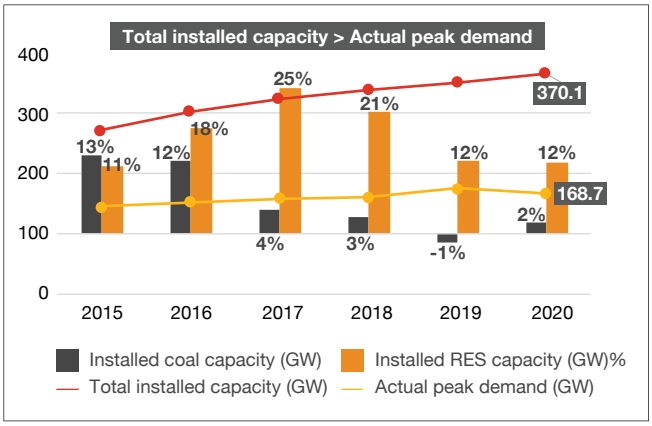
DISCOMs continue to experience losses and will require significant structural revenue assurances and cost-side reforms to remain financially viable (Figure 3.4.8).

### Power procurement strategy linked to demand requirements

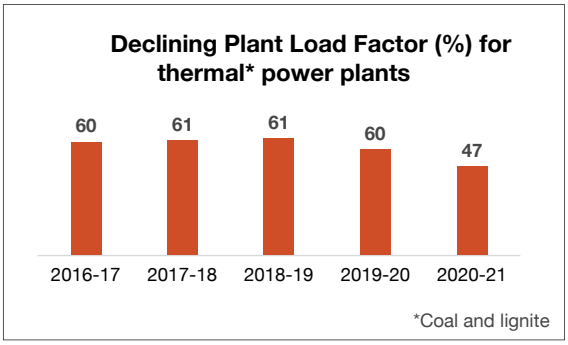
COVID-19 has had a significant impact on power demand, especially from industrial and commercial sectors which account for 50% of total power consumption[42]. This has highlighted an already existing demand-supply gap. Installed capacity has historically outpaced the actual peak demand (Figure 3.4.9), which further impacts government finances and the commercial banking sector. For example, RE capacity addition targets of 450 GW by 2030[43] would necessitate a total investment of US$ 330 bn[44] by the government, while thermal power assets, 34 plants of 40 GW capacity, lie stranded. These non-performing assets pose a burden of US$ 40 bn - US$ 60 bn[45] on the nation. It, therefore, becomes critical to devise effective strategies to understand consumer demand across segments and manage supply across the value chain of generation, transmission and distribution.

Figure 3.4.9: Mismatch between capacity addition and demand

**Capacity additions are not aligned with demand; Supply surplus trends are powered by RES additions**




**Capacity utilisation of coal based thermal power plants to fall to 46.6% (by FY21)**




Sources: CEA, Ministry of Power, PwC Analysis

There is a strong need for a holistic planning framework and institutional support to improve demand forecasting methods and to help the sector adopt data-driven approaches at the state, district, and municipality levels. For example, departments such as CEA[m], planning commissions, the census department, and the statistical office need to collaborate to not only institutionalise reforms like expanding the grid and accommodating growing RES capacity but also to create an exhaustive real-time data repository for managing demand and supply accurately. Effective investment driven by institutional support will not only make power sector utilities financially sustainable but also increase progressiveness and competitiveness ushering in better efficiency and service for customers.

[m] CEA - Central Electricity Authority

## 5. Automotive and Industrial Products

Five key themes emerge in the automotive and industrial products (IP) sector for driving revival and growth in the medium term.

**Figure 3.5.1: Key sector specific themes**

| # | Pillar | Theme | Past (Before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Supply | Opportunities in global supply chain rearrangement driven by risk diversification | Limited, primarily in resource-based and low technology industries | High, across resource, low, medium and high technology industries |
| 2 | Demand | Shift in consumer behaviour in medium term due to health and economic reasons | Status quo | Towards value consciousness, safety and hygiene, work from anywhere model |
| 3 | Demand | Accelerated adoption of digital front ends for interacting with customers | Physical channels with emerging digital front ends | Physical channels with accelerated digital front ends |
| 4 | Demand | Decentralisation of demand in hinterland driven by migration, stimulus and relative insulation | Growing contribution from semi-urban and rural centres | Accelerated growth from semi-urban and rural centres vs urban and metropolitan centres |
| 5 | Resources | Data as a critical asset to drive growth | Emerging trend | Accelerated adoption across automotive and IP |

Source: PwC analysis

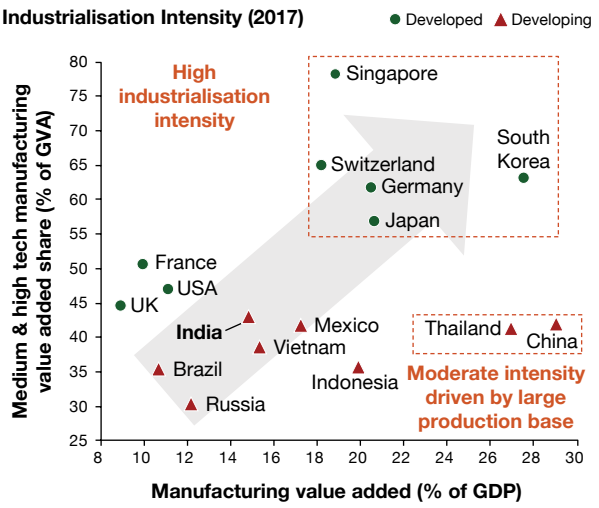
### Opportunities in global supply chain rearrangement

With a 3% share, India is ranked sixth in share of global production in 2018[46]. However, the country scores fairly low on 'industrialisation intensity,' which is based on its share of medium- and high-technology manufacturing value add in proportion to the overall gross value add (Figure 3.5.2).

Driven by ongoing US–China trade tensions, global trade was facing headwinds before COVID-19. Shifts in trade patterns have been further accelerated due to the pandemic, prompting countries and businesses to de-risk supply chains and relocate production closer to home[47].

This presents two key opportunities for India to reconfigure domestic manufacturing: one, **to reduce import dependency through inward manufacturing**, and two, **to strengthen participation in global supply chains.**

**Figure 3.5.2: Country-by-country industrialisation intensity (2017)**




Source: World Bank, United Nations Industrial Development Organization, PwC analysis

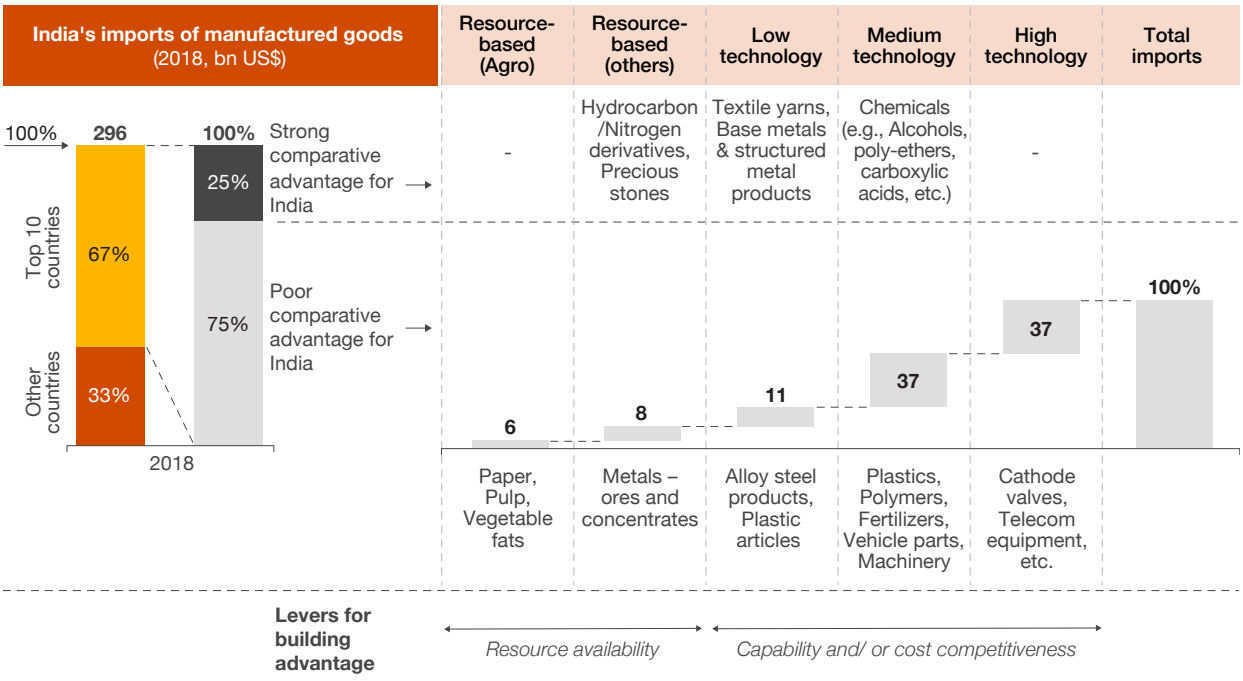
With increasing imports of high-technology goods and declining resource-based exports, India has run into a trade deficit at the manufactured goods level (Chapter 2, Figure 2.10). India could identify key sectors for driving self-reliance through inward manufacturing by focussing on its core strengths across textile yarns, base metals and structured metal products and chemicals, where the country has a strong advantage. Out of the total imports from the top 10 countries, India has a comparative advantage for 25% of the imports (Figure 3.5.3), primarily across resource-based and low-technology industries[n]. India can start focusing on building capacity across these sectors. However, in the medium to long term, India will need to invest resources, build capabilities, and create business reforms and trade-promoting reforms to focus on medium- to high-technology industries, where it is currently dependent on other countries.

Investment in resources and capability building will further strengthen India's position on the global front. India faces strong competition from Southeast Asian countries, especially Vietnam, Thailand, South Korea and Malaysia. This is evident from the global supply chain rearrangement witnessed during the US–China trade war. Only 10% of the US trade that shifted away from China to other Asian countries in 2019 went to India, whereas 46% shifted to Vietnam[48]. PwC India's recent report 'Advantage India' points out the advantages available to companies wanting to relocate to India[49].

**South Korea's technology transfer story[50]**

South Korea has been able to significantly increase their GDP per capita through structural shifts in manufacturing, from low-tech to high-tech industries. Ease in transfer of technology was a key driver towards this. In the 1960s and 1970s, South Korea began promoting inward transfer of foreign technology, developing its domestic manufacturing capabilities through methods such as reverse engineering and foreign licensing. At the same time, the government and the private sector invested in the capacity to absorb this technology. As a result, the country is today the world's fifth largest exporter[51].

**Figure 3.5.3: India's imports of manufactured goods and comparative advantage[o]**




Source: World Bank, United Nations Industrial Development Organization, United Nations Conference on Trade and Development, PwC analysis

[n] PwC analysis based on Revealed Comparative Advantage (RCA) index
[o] List of industries is not exhaustive

# Japan's role in India's Full Potential Revival and Growth

Japan is a strategic partner to India in numerous economic activities. With the COVID-19 crisis, it is important that both countries share ideas so that both economies recover rapidly, using complementary strengths and approaches of these two nations.

Japan dealt with the COVID-19 crisis with a whole-of-society approach. Citizens stepped forward by adhering to strict rules of social distancing through self-regulation. While government played a role through active communications to these rules, the self-participation of citizens, collaboration between different segments of society was a key to our response strategy.

Japanese companies are keen to understand and participate in the re-building process using accurate data flows and taking economic activity deeper into India. By understanding the needs and wants of a majority of India, full-potential-revival and growth will happen. Japanese companies will help at different levels, especially with the flow of data, based on Data Free Flow with Trust (DFFT) instituted by the Japanese government as part of its G20.

Japan's experience showcases the importance of broad basing the economy. Global Japanese companies founded from 1950 onwards relied on innovations tested deeply and widely within Japan, before being exported. For instance, Toyota's auto innovations occurred when it made cars for Japanese roads first. Its designs were compact and sturdy and therefore original. Its subsequent success in the global market was when appropriate modifications were made for that market. India will also have to address its market deeply and broadly, which will allow it to create products and services based on its large home market that can scale globally. Japanese companies like Suzuki Motor Corporation, through its alliance with Maruti Udyog are already playing a role in this process of market innovation. We are particularly keen on a deeper collaboration on the IT front where India is now an acknowledged leader.

In my view, Japan and India are united not just through commerce, but also through culture. While we are a secular democracy, our Buddhist traditions borrow from India. When I visit India, I see the same respect for the elder, and the visitor that marks Japanese culture. It is important that our partnership is extended on a people to people level to further strengthen the recovery of both countries from this crisis.

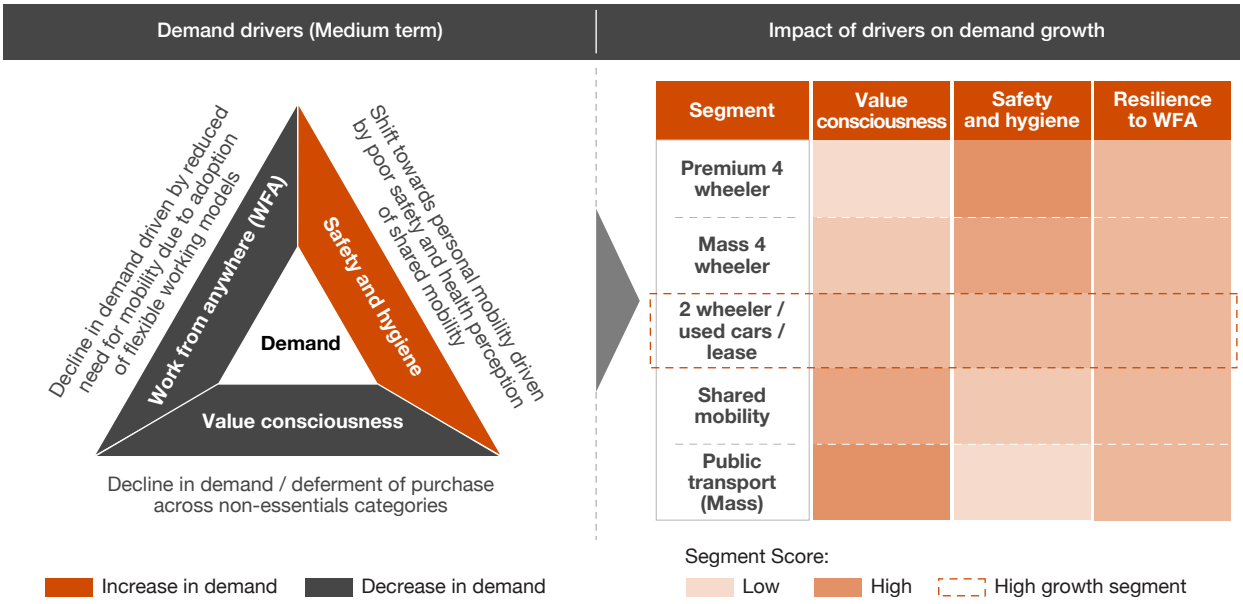
**Kimura Kochiro**
Territory Senior Partner
PwC Japan

### Shift in consumer behaviour for health and economic reasons

COVID-19 is likely to cause three key shifts in consumer behaviour critical for the automotive sector: increased value consciousness, a focus on safety and hygiene, and the adoption of work-from-anywhere (WFA) models. Increased value consciousness is expected to negatively impact demand (Chapter 2), and this effect may be exacerbated as WFA models gain traction, reducing the need for overall mobility. On the other hand, an increased focus on safety and hygiene may stimulate demand as consumers shift away from shared mode of transportation to personal mobility. In a recent consumer survey conducted by Ipsos (China), 66% of respondents indicated a preference for private vehicles post–COVID-19, as compared with 34% of respondents before the crisis[52].

The interplay of these three shifts may result in higher demand for two-wheelers, used four-wheelers and innovative service offerings such as car leasing, subscriptions, and pay-by-use models (Figure 3.5.4). To address these shifts, automotive players may need to redefine product portfolios and evaluate innovative product and service offerings.

**Figure 3.5.4: Shifts in consumer behaviour shaping demand landscape**




Source: PwC analysis

### Accelerated adoption of digital front ends

Before the pandemic, digital adoption by consumers in B2B2C (Business to business to consumer) channels (for example, in automotive sales) had been primarily focussed on the research stage of the consumer purchase journey (Figure 3.5.5)[53]. Physical interactions have played a critical role, especially in converting enquiries into sales.

Driven by COVID-19 and the adoption of digital front ends by consumers, this trend may result in an increasing role for digital beyond the research stage, actively driving conversion of enquiries into sales. Across the original equipment manufacturer (OEM) landscape, players have shifted their focus towards digitalising the end-to-end consumer journey with targeted interventions across each stage (Figure 3.5.5).

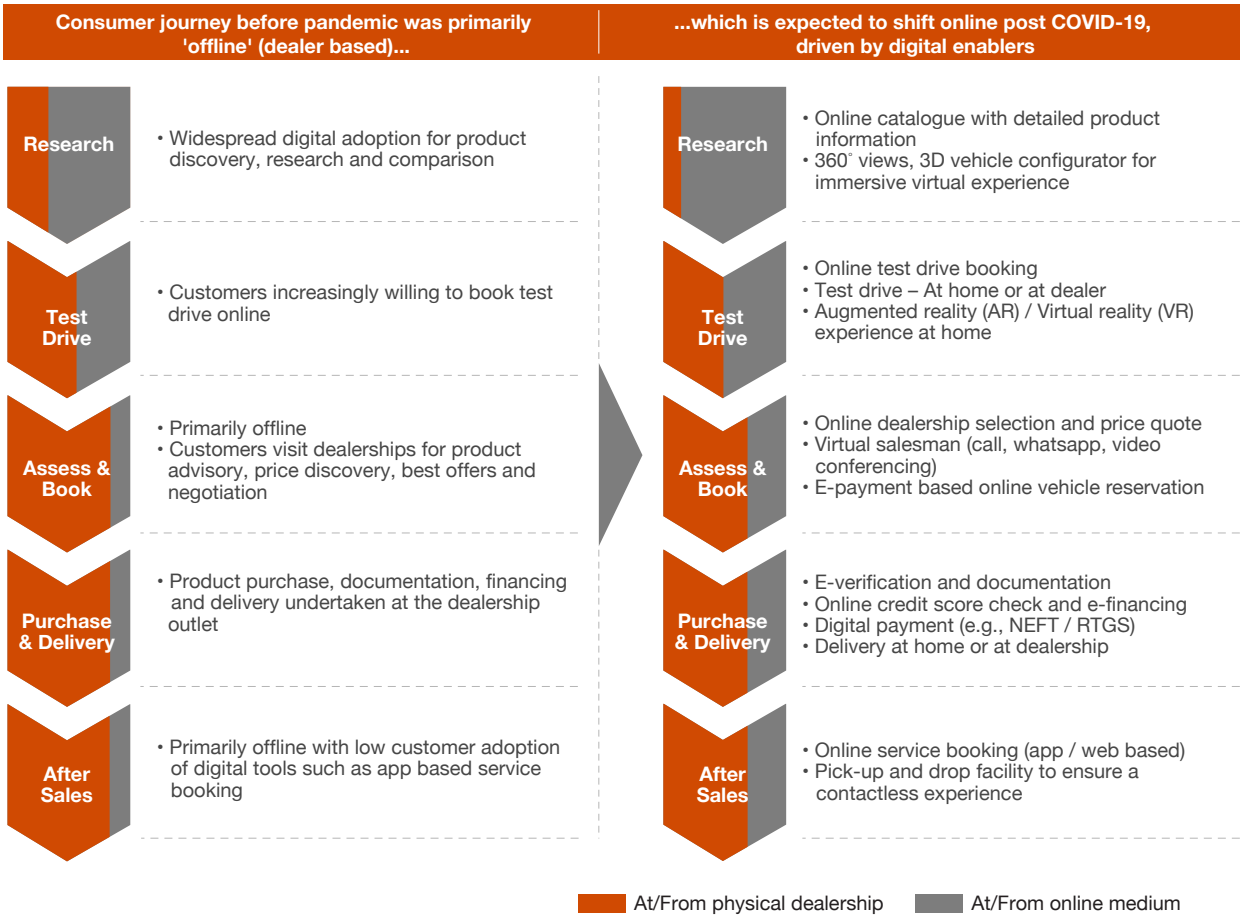
One of the leading automotive OEMs in India has digitalised retail sales and is leveraging technologies such as a 3D vehicle configurator to enable virtual product assessment and configuration.

As consumer purchase behaviour evolves owing to COVID-19, OEMs will need to reconfigure channel strategy towards digital technologies and ensure a seamless end-to-end online consumer journey. This will require rethinking of the traditional dealership model — the role of the dealership, dealer margin structure and resource requirements — along with making investments in building a digital talent pool and digital sales and marketing capabilities.

Automotive players will need to quickly adapt to shifts due to COVID-19 and increasingly learn how to sell through digital platforms. This may have implications across traditional operating models within the sector.

**Hardeep Singh Brar**
Director (Marketing & Sales), Great Wall Motors

**Figure 3.5.5: Accelerated adoption of digital within the B2B2C consumer journey (e.g., automotive)[P]**




Source: PwC analysis

## Decentralisation of demand in hinterlands

Decentralisation is expected to accelerate in the medium term as discussed in Chapter 2.

Driven by this shift in demand, enterprises will need to evaluate micro-market opportunities and assess business viability by understanding consumer needs and product-price preferences. This, in turn, may require reconfiguration of market strategy and evolution of innovative channels — such as digital kiosks or virtual reality–based product demonstrations for automobiles — to ensure reach in a cost-efficient manner. Success in the hinterlands will further require institutional focus on developing rural infrastructure (logistics, warehousing) and improving last-mile connectivity.

[P] Illustrative representation

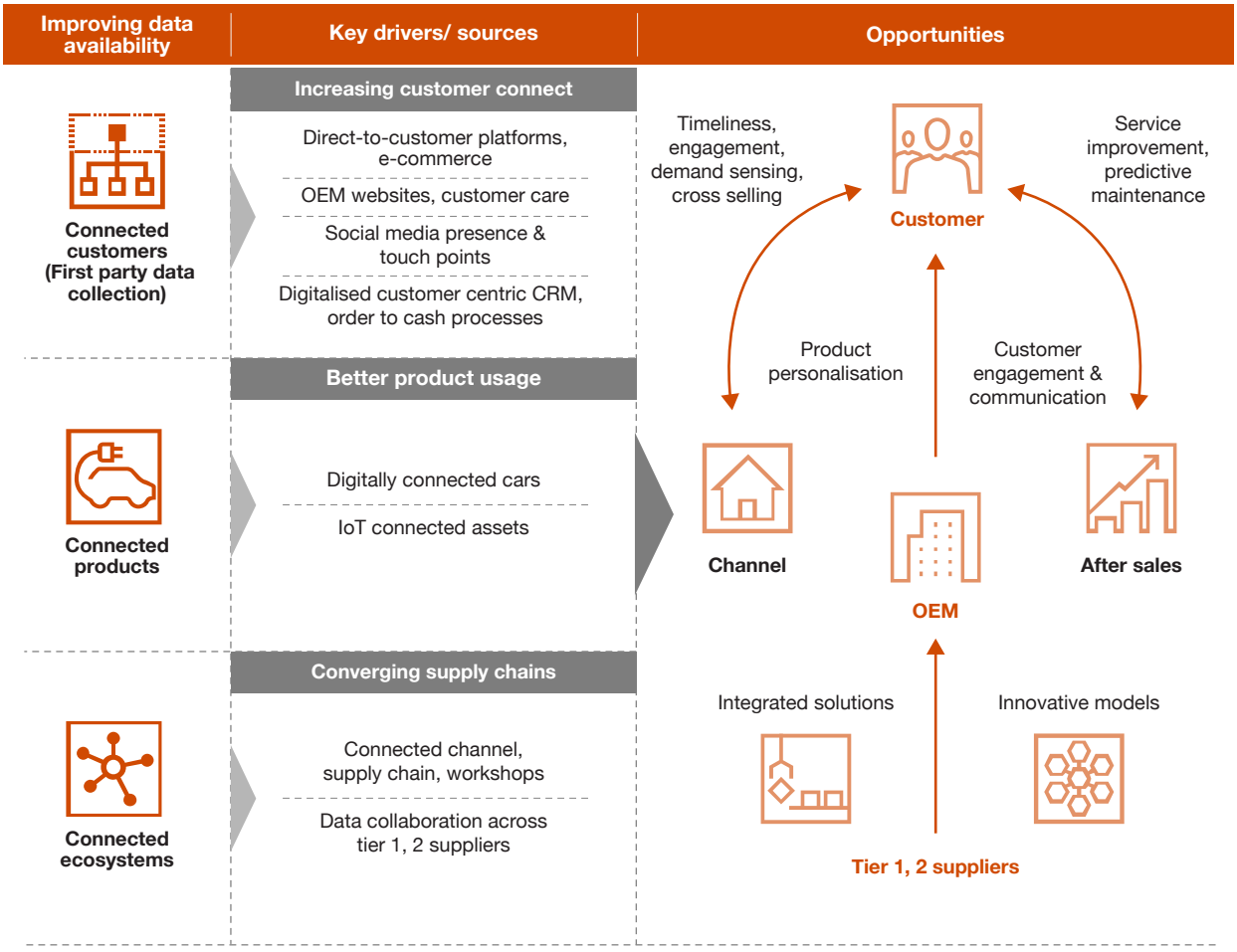
### Data as a critical asset to drive growth

Data plays a critical role across the automotive and industrial products value chain, especially in areas such as demand sensing, improving customer experience, providing supply chain visibility and achieving cost efficiencies.

Within the automotive value chain, improved data availability through connected customers and products will result in additional opportunities (Figure 3.5.6). This, in turn, will result in the proliferation of multiple data-driven business models, such as multichannel customer journey, customer-centric services, digital dealership, predictive maintenance and transformed aftermarket. As an example of predictive maintenance, a leading tire manufacturer now offers a tire monitoring program where it leverages telematics and predictive analysis to provide over-the-road tire monitoring.

Recognising the key role data can play in revival and growth across industries, post the COVID-19 crisis, a global alliance of data analytics experts between engineering and technology companies, research institutions, etc. has been launched to enable newer, faster, more data-driven ways of kick-starting businesses and economic recovery post-pandemic. As one of the focus areas, the alliance is leveraging data to understand primary indicators of demand and help improve supply chain preparedness.

**Figure 3.5.6: Improved data availability leading to opportunities in automotive sector**




Source: PwC analysis

## 6. Financial Services

Five key themes emerge in the financial services sector for driving revival and growth in the medium term.

**Figure 3.6.1: Key sector specific themes**

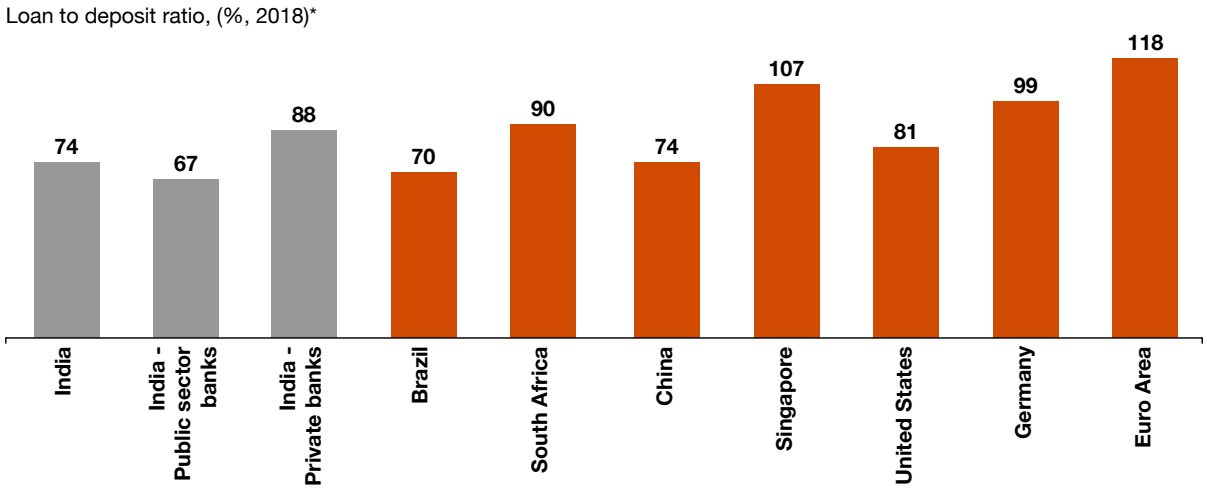
| # | Pillar | Theme | Past (Before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Institutions | Shift from risk-averse mind-set by tackling regulatory and psychological barrier | Risk averse | Measured risk tolerance |
| 2 | Resources | Data interoperability, transparency and reliability to simplify risk and process agility | Fragmented data sources | Integrated source of reliable data |
| 3 | Resources | Drive long-term finance market by easing regulations and managing project risks | Restricted investment | Relaxation in regulations and overhaul risk management |
| 4 | Demand | Cater to the 'needs' of the lower class and MSMEs sector through formal credit | Reduced credit availability and informal institutions | Higher credit availability from formal institutions |
| 5 | Demand | Easy access to 'credit' for the middle class through incentives, regulatory and new products to cater to their 'wants' | High share of 'savings' and low debt in households | Drive consumption through higher share of credit |

Source: PwC analysis

### Tackling barriers towards measured risk tolerance

Risk-averse mind-set in the Indian financial sector is evident from multiple metrics. For example, lower levels of loan-to-deposit ratios (Figure 3.6.2), higher than mandatory SLR investments by banks, and increased reverse repo deposits with the Reserve Bank of India (RBI) despite the RBI lowering the reverse repo rate from 5.75% to 3.35% in the last three years[54]. This risk-averse mindset has been reinforced because of increasing non-performing assets (NPAs), despite these being largely concentrated among the top 1% of defaulters[55].

**Figure 3.6.2: Low loan-to-deposit ratio for India as compared with that of other countries**




* 2019 data S. Africa, Singapore, United States

Source: World Bank, other sources

Bringing a shift towards a more measured risk approach and thus incentivising banks to lend will require relaxation of regulations on the current lending norms. Banks also need to strengthen their internal risk and governance processes to evolve their risk culture.

### Data interoperability, transparency and reliability to simplify risk

Information asymmetry can lead to high transaction costs and credit gaps. The World Bank estimated a credit gap of INR 26 tn, in India in 2017, due to lack of adequate credit information[56], with banks refraining from approving loans. This can be addressed through the establishment of a credit registry platform.

In 2018, the RBI proposed creation of a public credit registry (PCR) to improve underwriting standards[57]. PCR is an integrated platform connecting banks, RBI, borrowers and other creditors to core credit information and secondary information bases. The aim of this platform is to provide a comprehensive view to prospective lenders of a borrower's credit profile, thereby accelerating financial inclusion efforts and collaboration across various stakeholders.

However, policies around data sharing compliance are still uncertain due to the pending 'Personal data protection bill 2019' which seeks to provide for protection to personal data. Added to that, challenges around credibility of the shared data also need to be addressed.

### Enabling long-term finance in infrastructure

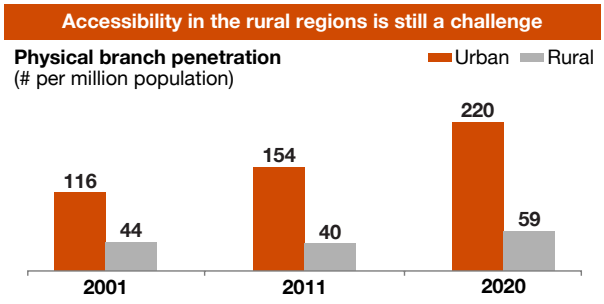
The gap in India's infrastructure investment is predicted to reach 0.5% of its GDP by 2040[58]. In FY20, around 37% of household investments were in pension and insurance funds — funds best suited for long-term investments[59]. However, the Insurance Regulatory and Development Authority of India (IRDAI) and Pension Fund Regulatory and Development Authority, India (PFRDA) have imposed strict regulations on investments in infrastructure projects. This can be attributed to poor risk–reward ratio within the sector, as evident from lower rates of return compared with relatively safer equity-linked products.

Various interventions for reducing risks e.g., optimal risk-sharing models have been discussed in the logistics and infrastructure section that can improve risk-return ratios. These efforts, coupled with improved accessibility and availability of sophisticated financial instruments by easing regulatory limits, can motivate fund houses to channelise savings into investments in infrastructure projects.

### Catering to the needs of the lower class and MSMEs through formal credit

As detailed in Chapter 2, semi-urban and rural centers which also house significant numbers of MSMEs are expected to drive growth over medium term. However, financial access in India's hinterlands must be improved to enable this growth. Accessibility of credit is still a challenge in rural region. Penetration of digital transactions is still low within the rural population (Figure 3.6.3). Out of 42% of those living in rural area who borrowed money in 2017, less than 10% borrowed from formal financial institutions, compared with nearly 65% in the US, and 25% in Brazil and Russia (Figure 3.6.4)[60]. This is mainly due to low penetration of the formal banking network (both physical and digital), lack of flexibility in banking products and poor credit delivery due to lack of information.

### Figure 3.6.3: Low penetration of formal banking sector




| Digital penetration | Urban population | Rural population |
|---|---|---|
| Digital transaction penetration, 2017 (%) | 44% | 16% |

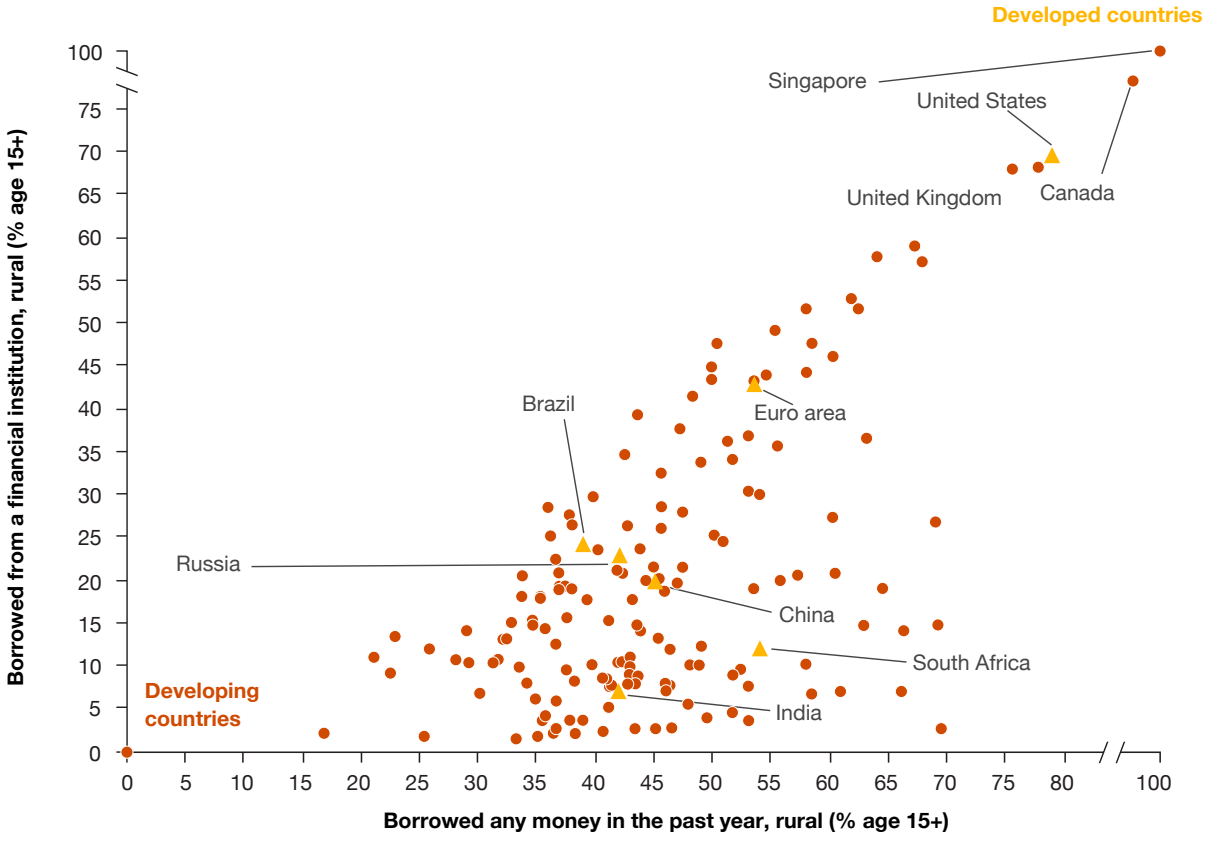
Source: RBI and Livemint[61]

Financial institutions should focus on enhancing access, and customizing product offering according to the needs of MSMEs such as seasonality and urgency. Financial institutions need to adopt alternate credit evaluation models based on non-conventional data sources such as supplier ratings, cash flows, social media, or spend pattern. Additionally, improving financial literacy and enabling easy access to capital could generate the required 'pull' for credit in the market.

Credit delivery can be enhanced with availability of sufficient information. This can be improved by building systems that aggregate information through alternate sources such as GST details. We need to balance customer privacy with enhanced efficiency.

**Akhilesh Tilotia**
Head - Strategy and New Initiatives, Axis Bank

Figure 3.6.4: Rural credit formalisation, comparative assessment (2017)




Source: World Bank Global Findex database

## Ease in access to credit for the middle class through incentives and new products

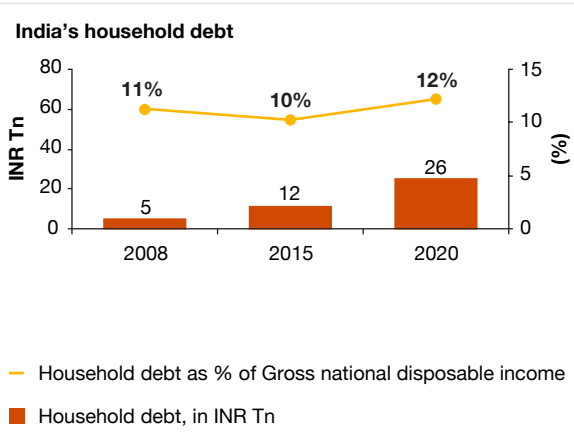
Household credit has been mainly driven by an increase in demand for housing, credit cards, consumer durables and personal loans. Despite higher growth of credit across these products, India's household debt-to-GDP ratio of 0.12 is still lower than that of other BRICS and developed countries (Figure 3.6.5).

COVID-19 is likely to dampen the ability and willingness of consumers to seek credit as consumers look to prioritise savings and delay discretionary expenditures. According to TransUnion CIBIL, credit enquiries in April 2020 fell by more than 75% from pre-pandemic levels in February[62]. This decline was steeper than what was observed during the global financial crisis of 2008–09.

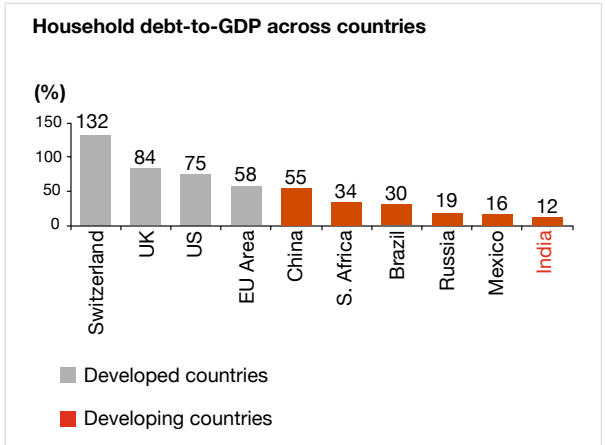
Historically, financial institutions across the globe have adopted innovative approaches to improve credit uptake. For example, A Belgian major bank, launched a programme for its customers, offering integrated solutions including car loan, insurance, acquisition of license plate and breakdown assistance. This created a hassle-free car purchase process for customers along with fulfilment of credit requirements. Indian banks need to adopt similar approaches to stimulate falling credit demand, while government offers support in the form of incentives in the short term to stimulate demand.

**Figure 3.6.5: Household debt in India**

**Household debt in proportion to income increased marginally since last 12 years**




**It is still lower as compared to global benchmarks**




Source: RBI and International Monetary Fund (IMF)

## 7. Technology and Education

Five key themes emerge in technology and education sector for driving revival and growth in the medium term. We have grouped technology and education together in this report as education is a sector intensely impacted by the technological acceleration outlined here.

**Figure 3.7.1: Key sector specific themes**

| # | Pillar | Theme | Past (Before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Demand | Digital adoption across sectors and their value chains | Emerging | Acceleration |
| 2 | Demand | Decentralisation of adoption as demand deepens in the hinterlands | Minimal impact | Higher demand from MSMEs |
| 3 | Demand | Increasing penetration of infrastructure will boost demand for ed-tech | Growing prevalence of informal ed-tech players to bridge the skill gap | Formalisation of the sector as institutions adopt e-learning |
| 4 | Institutions | Reforms and regulations to enable accelerated growth | Strict govt. regulations on education providers | Mechanisms for accreditation of online courses/ content |
| 5 | Resources | Acceptance of work-from-anywhere (WFA) model enabled by structural changes | Limited acceptance of WFA | Adoption of WFA across several service sectors |

Source: PwC analysis

### Acceleration in digital adoption across sectors and their value chains

India has shown significant progress in digital adoption, improving its rank from 56 in 2014 to 43 in 2020[63]. India has the potential to increase the share of its digital economy from 8% in 2018 to 18-23% in 2025, by focussing on emerging digital ecosystems across sectors such as financial services, healthcare, education, and manufacturing[64]. COVID-19 is likely to accelerate this demand for digitalisation across sectors and their value chains.

Technology companies are looking to reorient themselves to address this surge in demand that is expected in the medium term. While global IT giants are experiencing slower demand due to the pandemic, local demand should offer them a second vector of growth.

## Figure 3.7.2: Opportunities for digital adoption across sectors (not exhaustive)

| | Demand Side Factors | Demand – Supply Linkage Factors | Supply Side Factors |
|---|---|---|---|
| **Auto and IP** | • Better demand sensing<br>• Digital front ends | • E-marketplaces<br>• Supply chain visbility | • Industry 4.0 |
| **Retail** | • Better demand sensing<br>• Drive customer centricity<br>• Digital front-ends | • Supply chain visibility<br>• E-marketplace | • Industry 4.0 |
| **Financial Services** | • Deepening banking access<br>• Payment transaction | • Process simplification (e.g., Video KYC)<br>• Alternate credit evaluation model | • Risk assessment engine<br>• Fraud detection system<br>• Consolidated credit registry database |
| **Logistics** | • Customer relationship portal<br>• Contactless processes | • Track and trace<br>• Community systems<br>• Route optimisation | • Improve asset utilisation<br>• Process digitalisation (e.g. warehouse automation) |
| **Healthcare** | • Telehealth and online consultations<br>• Diagnostic lab scheduling | • Platform to connect doctors and patients | • Electronic health records |
| **Education** | • Expand quality education access to smaller towns | • Customised learning experience | • Digital upskilling of teachers |

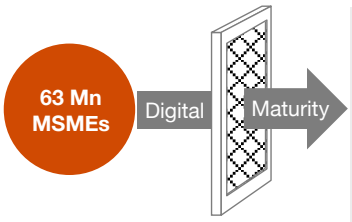
Source: PwC analysis

### Decentralisation of adoption as demand deepens in the hinterlands

As discussed in chapter 2, the next wave of growth is expected to come from the semi-urban and rural centers of India which also accounts for a significant share of MSMEs[65].

Currently, MSMEs have a low level of digital adoption, with only 11%-13% adopting productivity enhancement solutions and less than 1% adopting sophisticated technology such as robotics or IoT (Figure 3.7.3). This presents a major opportunity worth nearly US$30bn[66] for digital adoption, with the bulk of demand arising from retail, manufacturing, education and hospitality sector–related MSMEs. There are multiple technology companies offering curated products for MSMEs. For example, Zoho, an enterprise solutions company, has a large MSME customer base (85% out of ~100,000 customers) and offers free accounting solutions to MSMEs with an annual revenue of less than US$200,000[67]. With growing demand from the sector, technology companies could tap into this segment by curating products aligned to needs, developing digital platforms and building ecosystems that collectively enhance their reach and productivity.

## Figure 3.7.3: MSMEs digital maturity level - 2019




| | L0 No Digital Adoption | L1 Connectivity and Communication *(Smartphone /PC/Internet /WhatsApp)* | L2 Transactions *(UPI/Payment Wallets/PoS)* | L3 Discoverability *(Website/ Social Media/ Online Listing)* | L4 Productivity Enhancement (ERP/CRM/ Accounting) | L5 Technology Sophistication (RPA/IoT/ Robotics) |
|---|---|---|---|---|---|---|
| **% of MSMEs** | **31-36%** | **64-69%** | **24-28%** | **21-24%** | **11-13%** | **<0.1%** |

Source: Zinnov, PwC analysis

### Increasing role of technology: Education for all (unserved and underserved)

The ed-tech market has seen exponential growth, thanks to technology-enabled solutions and services that are redefining traditional education. Critical factors driving ed-tech's growth are flexible and engaging learning models, access to personalised learning, and options suited to the cognitive and socioeconomic preferences of India's diverse population.

Due to the pandemic, ed-tech providers have seen a surge of demand from K-12 schools and universities for e-learning modules, smart class systems and virtual exam invigilation post-lockdown. However, established infrastructure including physical classrooms in K-12 segments will and should continue to play a key role, as social skills are important for this segment where digital penetration is low.

The Indian ed-tech sector is at a point of disruption, wherein the emerging model will be 'phygital' learning, blending physical and digital. Augmented reality and virtual reality learning experiences and 'anytime, anywhere' delivery will help this process.

Four key areas need to be addressed, which are curriculum and proctoring, teacher training and certification requirements, virtual learning infrastructure, and measurement of virtual learning that the industry will continue to face. Government reforms and financial backing from private equity and venture capital firms are critical to enable ed-tech sector in the medium term.

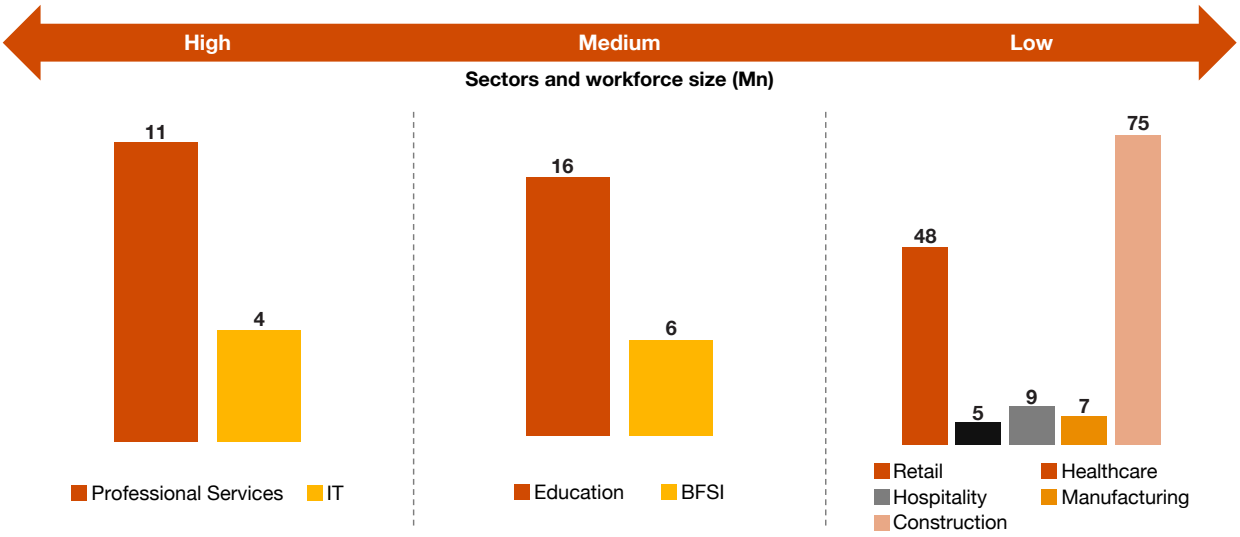
### Need for adaptation of reforms and policies for technology-based education

Given the challenges, there are multifaceted reforms needed to move towards a more tech-based education system. Courses and curricula need to be adjusted with the size and format of digital content which in turn must be scientifically designed considering factors such as students' abilities to concentrate, and digital/visual fatigue during virtual sessions. An estimated 2.7mn teachers in India[68], impacted by the lockdown, are untrained and not ready to manage and impart education with these new mechanisms.

The five future teaching standards required would be online classroom management; digital content creation; delivery of immersive learning experiences using digital infrastructure; evolution of teacher-student interactions; and virtual invigilation as a part of the accreditation of qualified teachers of the future.

This shift in the education industry will help fulfil the education goals of India, in particular government's vision of making education accessible to all and harnessing Indian youth's potential to create a self-sustaining economy. India Report on Digital Education, 2020[69] by Ministry of Human Resource Development (MHRD) is an important step in this direction which will help support the rapid implementation of the National Education Policy.

**Figure 3.7.4: Work from home suitability assessment of sectors**




Source: RBI Klems, 2018

### Acceptance of a work-from-anywhere (WFA) model enabled by operating model changes

An assessment of India's non-agriculture workforce of nearly 180mn (excluding sectors such as mining) finds that nearly 37mn workers (Figure 3.7.4), largely from service industries such as professional services, IT, Education and BFSI could adopt higher levels of flexibility in working environments such as WFA, once the lockdown restrictions are lifted. Factors enabling WFA include the ability of individuals to work independently under limited supervision, low infrastructure requirements and low in-person interactions. Further, in PwC COVID-19 consumer survey (June 2020), around 80% of respondents who worked from home during the lockdown, agreed that virtual interactions were as effective as physical workplaces in producing outcomes.

Companies might adopt flexible employment models, hiring more freelancers if it could be consistently demonstrated that WFA is productive. The gig economy can provide companies with access to a more diverse and inclusive workforce at a lower cost. Organisations would have to establish standard operating procedures for working remotely, redefine KPIs, re-evaluate use of office space, provide adequate infrastructure and ensure data privacy as mentioned in Chapter 2, Figure 2.8.

## 8. Government

Seven key themes emerge in the government sector for driving revival and growth in the medium term.

**Figure 3.8.1: Key sector-specific themes**

| # | Pillar | Theme | Past (Before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Demand | Accelerated digitalisation of government services | Digitalisation | Accelerated digitalisation |
| 2 | Demand | Infrastructure to meet decentralised demand | Limited infra beyond metropolitan centres | Increase in infra beyond metropolitan centres |
| 3 | Resources | Focus on mobilising land as an asset for capital generation | Limited mobilisation of land | Accelerated mobilisation of land |
| 4 | Resources | Adoption of data cooperatives for unlocking data potential | Limited use of data | Target full potential use data |
| 5 | Supply | Shift focus on hotspots of reverse migration for employment | Status quo | Need for employment in migration hotspots |
| 6 | Institutions | Fast track land, labour and infrastructure reforms | Gradual progress | Expediting reforms |
| 7 | Institutions | Reforms to improve ease of doing business | EoDB reforms | State level EoDB reforms |

Source: PwC analysis

### Digitalisation of government services will accelerate

The country embarked on a National e-Governance Plan in 2006, and since 2014 it has been working to digitalise India through the Digital India initiative. However, India must continue to work on improving its e-government ranking, where it fares poorly as compared to other Southeast Asian countries. (Figure 3.8.2).

COVID-19 has accelerated adoption of digitalisation by government for delivering services to citizens. Initiatives such as the Aarogya Setu app, iGOT, PM e-Vidya and National Digital Health Blueprint were rolled out during the pandemic. Factors such as contactless delivery and larger outreach are further driving digitalisation of services.

The pandemic has presented a significant opportunity to accelerate digitalisation of government services. However, states with better economic conditions and e-governance strategies are likely to adopt digital initiatives faster than others, which may potentially lead to a digital divide across the country[70]. Government needs to play an enabling role in driving a uniform digital adoption across the country. Common digital platforms could help in propagating wider and more uniform adoption.

**Figure 3.8.2: UN e-government ranking, 2020**

| Country | Rank |
|---|---|
| China | 45 |
| Malaysia | 47 |
| Thailand | 57 |
| Vietnam | 86 |
| India | 100 |

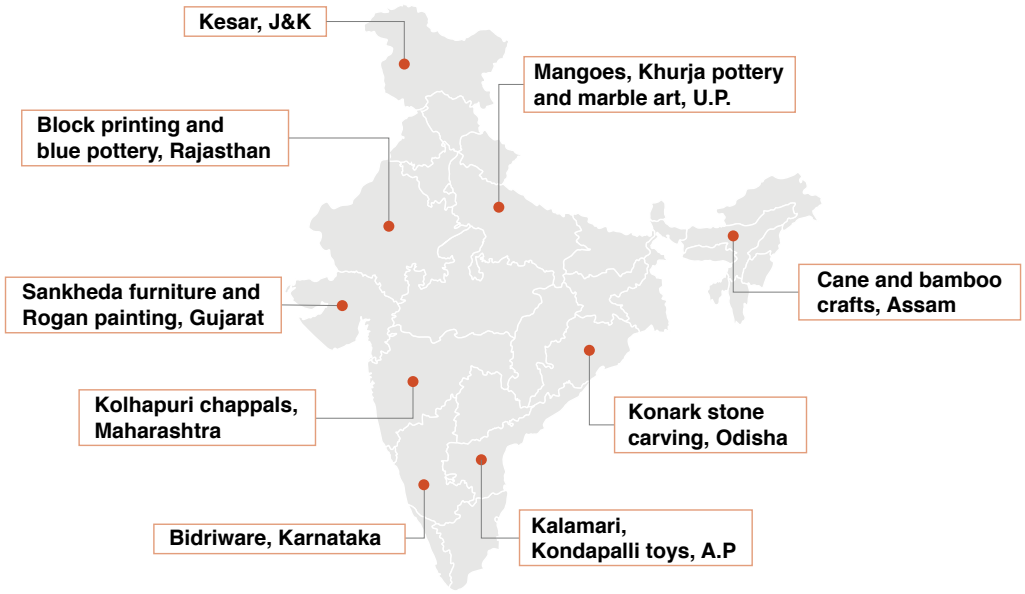
Source: UN E-Government Survey 2020

### Infrastructure build-up to support decentralisation

India was witnessing a gradual decentralisation of demand even before COVID-19. Decentralisation of demand accelerated during the pandemic because of the 'work-from-anywhere' trend, reverse migration and lower penetration of the virus in rural areas. But growth in consumer demand and local production capacity can be expanded further if infrastructure is built to support the semi urban and rural areas.

The government has already taken important policy initiatives aimed at decentralised infrastructure. These include the draft National Logistics Policy[71] and the National Infrastructure Policy which has a planned expenditure[72] of over INR 9 tn towards rural, agriculture and food processing infrastructure. A few rural infrastructure initiatives were also announced as part of the *Aatmanirbhar Bharat* stimulus[73], including INR 1 tn for funding agriculture infrastructure projects at farm-gate and aggregation points. The focus needs to be on rapid implementation of these initiatives which will also boost creation of local employment.

**Figure 3.8.3: Regional clusters existing in India**



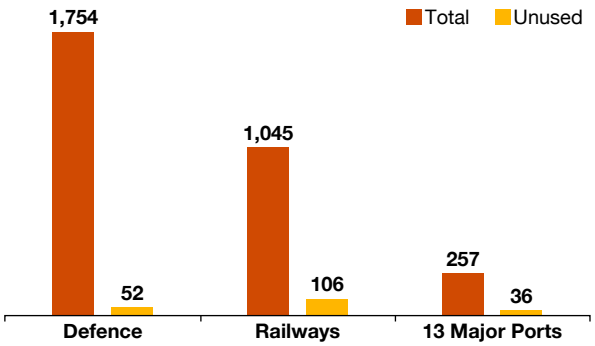

Source: PwC analysis

### Mobilising land as an asset for capital generation

India's Government Final Consumption Expenditure (GFCE) as a percentage of GDP has increased from 10.4% in FY16 to 11.8% in FY20[74]. In addition, India's fiscal deficit increased to 4.6% of GDP in FY20[75]. Both GFCE and fiscal deficit are expected to grow owing to stimulus measures taken in response to COVID-19. While disinvestment of public sector enterprises (PSE) has been attempted in the past, Government has fallen short of its target by 24% cumulatively in the last five years[76]. In the short to medium term, private-sector interest may also be lower for PSE assets due to shortage of capital among other reasons.

By mobilising land, government can unlock an important resource for the industry, while raising capital for its needs. Approximately 0.36 m acres (11%) of the total land owned with Central Public Sector Enterprises (CPSEs) and central/state government departments was assessed as being available for mobilisation[77].

**Figure 3.8.4: Land availability with Government, in acres (in thousands)**




Source: World Bank data

### Adoption of data cooperatives for unlocking data potential

Government has a large volume of data but due to lack of awareness of its availability, perception of poor data quality, interoperability issues, and departmental and siloed approach, this potential has not been fully realised. Need for data, especially on labour migration, was evident in the early stages of COVID-19.

Creation of data cooperatives may help in realising the full potential of data (Figure 3.8.5). Data cooperatives are platforms with voluntary pooling of data by government, citizens and enterprises. For example, Healthbank[78], a Swiss health data cooperative with more than 0.2 m registered members, provides a data platform for innovation in health services and for the empowerment of citizens.

### Focus on hotspots of reverse migration for employment

Given the stress caused by COVID-19, migrant workers have returned to their home states. States like Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal, which rank high in terms of the number of returning migrants, are hotspots of reverse migration.

Although the phenomenon of reverse migration may be temporary, it highlights locations where employment opportunities are required. To ensure sustainable employment, localised employment opportunities must be developed using local strengths. Uttar Pradesh, for example, is known for its horticulture and agricultural produce. This strength can be leveraged by encouraging primary and secondary processing units in select districts.

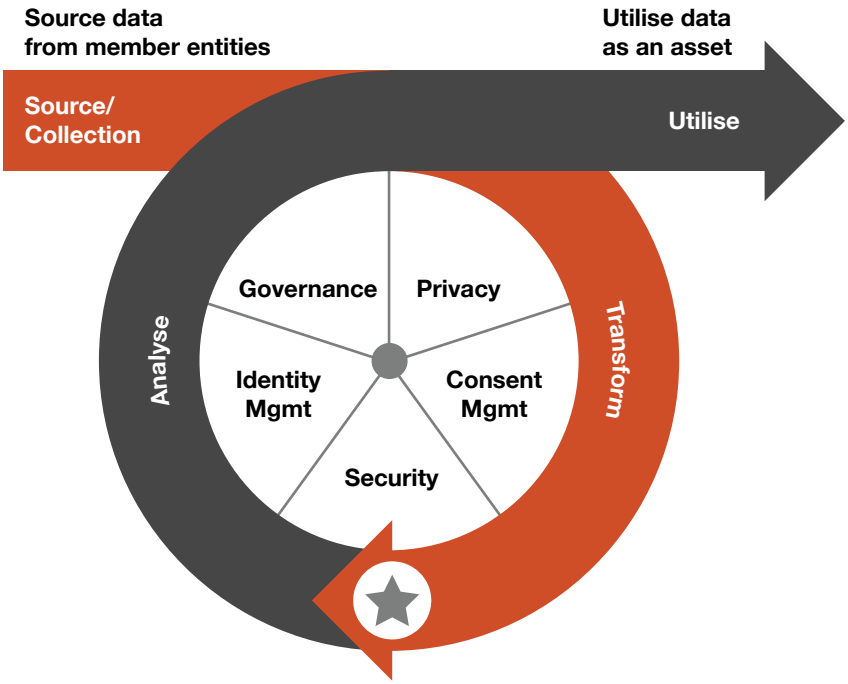
### Fast-tracking land, labour and infrastructure reforms

Availability of land, labour and infrastructure are three key considerations for any enterprise determining investment decisions. As India attempts to become a business-friendly nation and achieve its national aim of becoming a US$ 5 tn economy by 2025, it is important to unlock the true potential of land, labour and infrastructure. The need has been aggravated due to COVID-19 requiring extra resources for faster revival.

Although the government has adopted multiple initiatives to ease frictions related to land, labour and infrastructure, it now needs a transformative process. Apart from adopting enabling regulations across these areas, government has to create an enabling ecosystem for collaboration and effective mobilisation.

Figure 3.8.5: Data Cooperative Framework

**Data cooperatives**




**Ensure high data quality and creating right insights**

**Benefits of data cooperatives**

| 01 | 02 | 03 | 04 | 05 |
|---|---|---|---|---|
| **Improved service delivery** | **Unlock innovation and collaboration** | **Country/ Community services** | **Data driven decision and policy making** | **Monetise data** |

**Sources of data**

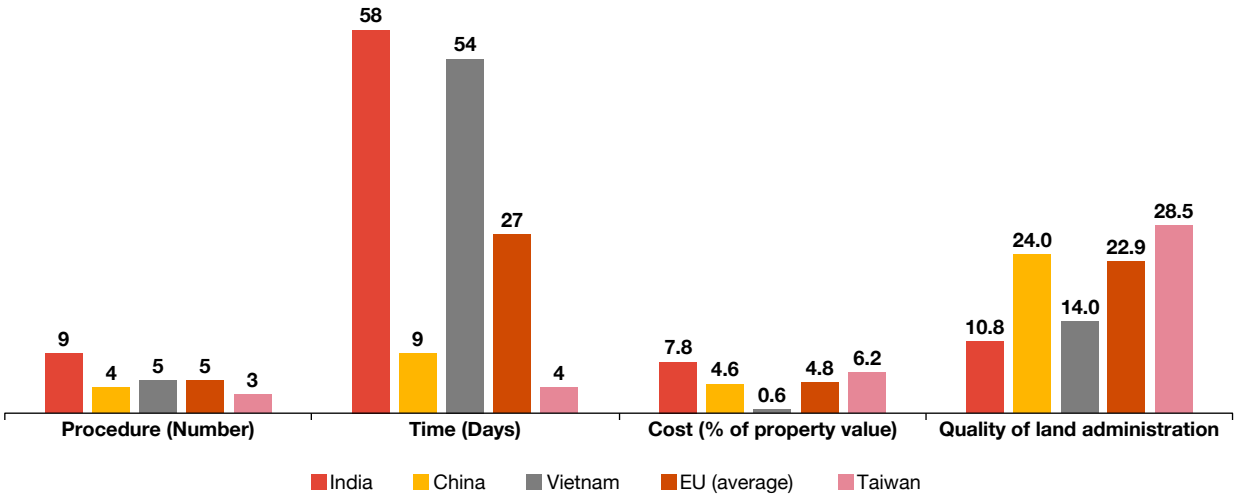
| Enterprises | Government | Citizens and Academia |
|---|---|---|
| Performance reports<br>Press releases<br>R&D<br>Employment<br>Open contracts | Planning data<br>Census<br>Smart cities<br>Employment<br>Health schemes<br>Policies and reforms<br>Infrastructure | Citizen data<br>Academia/ Research<br>Household information<br>Social Media<br>Civil societies |

Source: PwC analysis

India has significantly improved its ease of doing business as reflected in its ranking by resolving insolvency, getting credit, getting electricity and trading across borders. I am sure the government will continue to take measures to further improve the ease of doing business.

**Keki Mistry**
Vice Chairman and CEO, HDFC

**Figure 3.8.6: Comparison of property registration**




Source: World Bank EoDB ranking

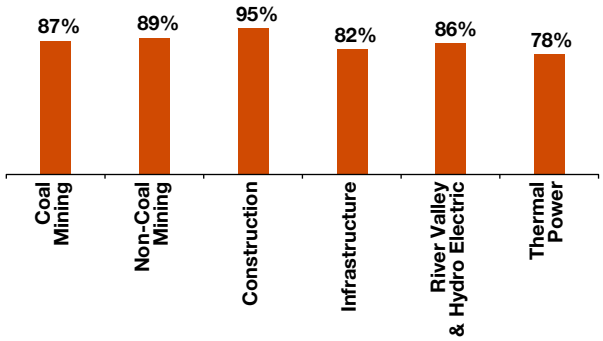
## Reforms to improve ease of doing business

While Government has improved on the Ease of Doing Business Index, wide disparities between states remain. This is evidenced by state assessments carried out by the Department for Promotion of Industry and Internal Trade (DPIIT) which still classifies most states under the category of aspirers[79]. Time taken for government clearances continues to be a roadblock. Registering a business takes upto 90 days while property registration takes upto 60 days (Figure 3.8.7).[80]

In particular, delays in environment clearances, which cut across sectors, have been an issue. In a CAG audit, environment clearances for 89% of the total surveyed projects were found to have exceeded the stipulated timelines[81].

Businesses are struggling to navigate the post-pandemic landscape, and the short term is clouded with uncertainty for businesses and investors alike. Going forward, India's business environment has the power to set the pace of industrial recovery. The crisis offers an opportunity to make India easy to do business with, at the grassroots level.

**Figure 3.8.7: Projects delayed due to environment clearance**




Source: CAG Report

## 9. MSME

Five key themes emerge in the MSME segment for driving revival and growth in the medium term.

**Figure 3.9.1: Key sector-specific themes**

| # | Pillar | Theme | Past (before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Demand | Shift of focus towards digital front ends | Low digital adoption | Increased digital adoption |
| 2 | Demand | Need to ease frictions in the last-mile credit delivery | Existing frictions in credit delivery | Removal of frictions for loan disbursement |
| 3 | Resources | Utilise the potential of data to ease current MSME related frictions | MSMEs unable to access formal credit and relevant data | Use data for access to credit and overall growth |
| 4 | Resources | Focus on creation of localised employment | Employment opportunities in urban areas | Need for localised employment in decentralised India |
| 5 | Institutions | Foster a business-friendly environment | Existing frictions in EoDB | Focus on fostering business-friendly environment |

Source: PwC analysis

### Shift of focus towards digital front ends

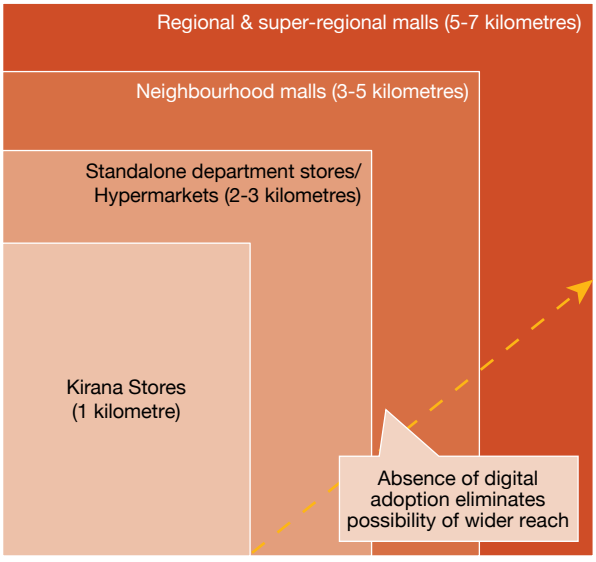
Whether an MSME operates as a small *kirana* store or is a high-end retail outlet in a mall, its geographic market reach tends to be limited to a few kilometres without digital adoption (Figure 3.9.2). This digital adoption could help MSMEs transcend geographic boundaries and connect to consumers in distant markets.

Although 43% of MSMEs participate in online sales (with or without an online presence), only 27% of the MSMEs that are online use e-commerce[82]. From a broader perspective, more than 60% of MSMEs have reached only the first frontier of digital adoption — that is, using technology for connectivity and communication[83].

COVID-19 has pushed MSMEs to embrace digital payment options in order to retain customers during the nationwide lockdown. As per PwC survey (in June 2020), 40% of respondents reported a drop in cash usage since the pandemic, and 20% stated they had "recently started using" digital payment options.

From a medium-term perspective, digital adoption among MSMEs will continue to grow. This will enable MSMEs to reap benefits such as formal credit based on digital payments and far greater market reach via e-commerce.

**Figure 3.9.2: Catchment sizes**




Sources: PwC Analysis

India's MSMEs have the potential to be global champions; we should learn from the platforms and ecosystems created by other countries such as Germany that have been successful at this.

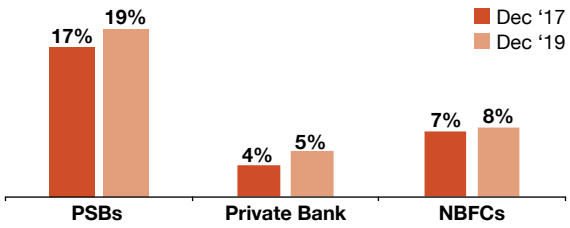
**Sunil Mathur**
Managing Director and Chief Executive Officer, Siemens Ltd, India

### Need to ease frictions in last-mile credit delivery

One of the biggest challenges MSMEs grapple with is the inability to obtain credit through formal sources. While a very large 79% of MSMEs are unregistered[84] (which limits their ability to get formal credit), even the remaining 21% often resort to informal credit sources. Invariably, MSMEs are unable to produce the kind of documentation and records needed for getting loans. In addition to this, public-sector banks (PSBs), private banks, and non-banking financial companies (NBFCs) have been facing rising non-performing assets (NPAs) in the MSME segment (Figure 3.9.3), contributing to loss of trust and reluctance to lend.

The temporary closure of economic activity as a result of the pandemic and ensuing lockdown has intensified the need for capital among MSMEs. While the *Aatmanirbhar Bharat* stimulus is directed towards MSMEs, improving the last-mile delivery of credit has been shown to be crucial for the stimulus to actually reach its intended beneficiaries.

**Figure 3.9.3: NPA rates in the MSME segment**



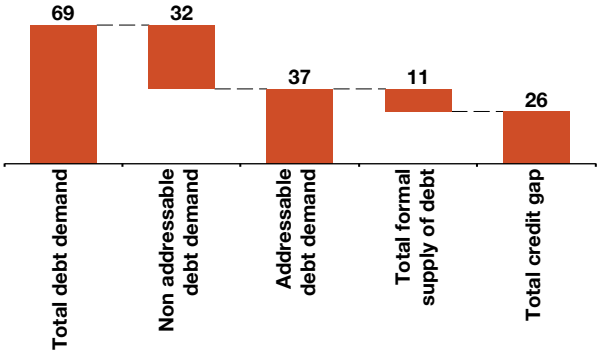

Source: TransUnion CIBIL SIDBI MSME Pulse, April 2020

### Using data to ease current MSME-related frictions

A majority of MSMEs find it difficult to produce collateral, credit history and documentation such as financial statements that are typically required for loan requests. As a result, around 90–95% of MSMEs rely on informal credit sources, and a huge credit gap[85].

The combination of COVID-19 and the frictions experienced by small businesses makes a strong case for leveraging alternative sources of data. MSMEs may lack formal records and collateral, but they do have data — some of it electronic — that accumulates as a result of business-related transactions. Consolidation of data sources such as rental information, social media, mobile phone payments and utility payments can be used to help more MSMEs obtain formal credit. Such initiatives have been gaining momentum with fintech companies playing a key role in driving them.

**Figure 3.9.4: Overall credit gap in MSME sector (in INR tn)**




Source: IFC-Intellecap report

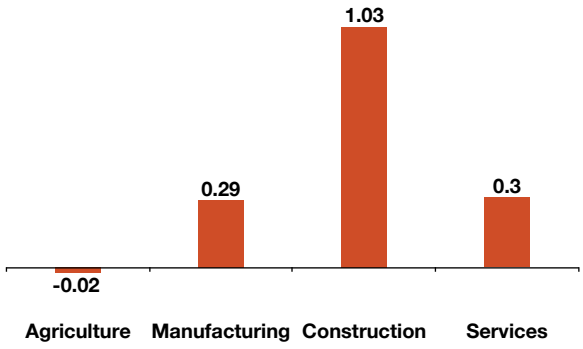
A typical MSME's supply chain has knowledge gaps that negatively affect access to financial support, operational efficiency and market reach. By providing an overview of MSMEs' immediate ecosystem, data will translate to a greater awareness of opportunities for entrepreneurs, be it in terms of government subsidies, cheaper supplier options or potential market linkages.

### Focus on creation of localised employment

Agriculture continues to be the largest source of employment, especially in smaller districts of India. However, it has very low employment elasticity (-0.02) as compared with other sectors (Figure 3.9.5)[86]. The need for employment has been accelerated owing to loss of jobs in metropolitan centres and people migrating to rural parts of the country during the COVID-19 crisis.

This is an opportune time for MSMEs, which provide 111 m jobs[87], to play a pivotal role in providing employment, especially because many are located in rural areas. Employment elasticity is also higher in MSMEs as they operate in the manufacturing and service sectors. Beyond the stimulus announced by Government, a deeper focus is required to provide non-credit support such as mentorship, marketing and linkages with supply chains so that more MSMEs can be incubated and flourished close to agriculture locations.

**Figure 3.9.5: Employment elasticity (1993-94 to 2011-12)**




Source: RBI

### Fostering a business-friendly environment

Today, a typical MSME has to work through more than 23 registrations and licenses, over 750 compliance procedures, and has to make more than 120 filings per month[88]. Regular compliance updates may result in an MSME unit hiring staff to ensure timely filings and incurring an additional cost. In addition to the number of compliances, the approvals needed to start and run a business have high turnaround times. Registering a business and property registration, for example, take up to 90 and 60 days, respectively — both procedures that are completed in one day in countries such as New Zealand and Norway[89].

At a time when MSMEs are reeling from the pandemic, a nurturing business environment is needed to help them recover. As a recent survey of 450 MSMEs conducted by Confederation of Indian Industry (CII) showed, the total value of delayed payments to MSMEs is as much as INR 18.2 bn[90]. MSMEs are known as the backbone of the Indian economy, so their revival and growth is contingent on solving these issues that have plagued small businesses over the years.

## 10. Agriculture

Six key themes emerge in the Agriculture sector for driving revival and growth in the medium term.

**Figure 3.10.1: Key sector-specific themes**

| # | Pillar | Theme | Past (before COVID-19) | Future (mid-term) |
|---|---|---|---|---|
| 1 | Demand | Growing market demand for better traceability | Low visibility about origins of agro-produce | Increased traceability |
| 2 | Resources | Increase in labour productivity in agriculture sector | Low productivity | Higher productivity |
| 3 | Supply | Predictive models and technology will improve crop yield | Low crop yield | Improved crop yield enabled by technology |
| 4 | Supply | More collaboration b/w govt. and enterprises to increase in spend on R&D | Low R&D spend | Higher R&D spend through collaboration |
| 5 | Supply | More efficiency in extension mechanism for dissemination of info to farmers | Low efficiency in agriculture extension mechanism | Improved efficiency in agriculture extension mechanism |
| 6 | Institutions | Effective water management by use of technology for driving sustainability | Excessive use of water resulting in wastage | Controlled use of water enabled by technology |

Source: PwC analysis

### Growing market demand for better traceability

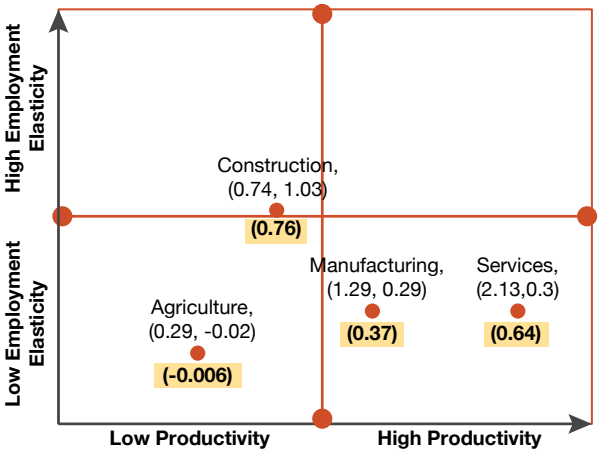
There had been a growing demand for traceability of agro-produce by domestic and international markets even before COVID-19. This demand meets the requirement of markets for ensuring food safety, complying with regulatory requirements, gaining consumer trust, improving brand positioning and preventing food recalls and counterfeit. This pandemic has further accelerated this demand as even consumers have become more proactive in learning about the origin of their food and the conditions in which it was produced. The recent reform announced by the government (as part of *Aatmanirbhar Bharat* stimulus) that removes restrictions for farmers to sell agriculture produce only to licensees in agriculture produce market centres, has further accelerated the need for traceability.

In the medium term, this need for traceability will give fresh impetus to the adoption of digital technologies across the value chain. Although India has a few export-oriented traceability initiatives such as APEDA's (Agricultural and Processed Food Products Export Development Authority) GrapeNet, focused efforts are required to cover the domestic market so that a larger number of farmers can benefit. Traceability may be leveraged to boost farmer incomes by giving premiums to growers who meet certain quality thresholds, such as lower residue levels. However, to facilitate adoption of traceability, capacity building and sensitisation initiatives are required.

### Increase in labour productivity in agriculture sector

Agriculture continues to account for the largest share of employment in India. However, it suffers from low productivity[91] and employment elasticity[92] as compared to other sectors (Figure 3.10.2).
This poses a grave challenge when it comes to increasing labour productivity in the sector, which is highly dependent on manual labour. The situation has been exacerbated by labour migrating from major crop production states during COVID-19.

**Figure 3.10.2 Productivity-employment elasticity multiplier (2011-12)**

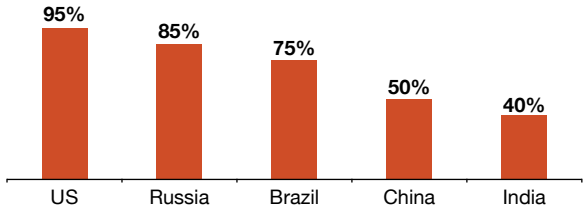



Sources: RBI, ILO, NITI Aayog

There are three ways of addressing this situation:

1. Encouraging more mechanisation. Currently, the level of mechanisation in India is low compared to that of other countries[93]. Fragmented land holdings (one-third of all agricultural households own less than 0.4 hectares of land[94]), high costs and lack of institutional credit are some of the factors holding this back.
2. Driving value-added farm and non-farm activities. Primary processing (such as washing, drying, dehulling), secondary processing (including manufacturing of value-added products), animal husbandry and other non-farm activities (such as handicrafts) could lead to better productivity and generation of more income for farming communities.
3. Shifting to alternative channels of employment in sectors which have better productivity and employment elasticity.

**Figure 3.10.3: Comparison of mechanisation across countries**




Source: FICCI-PwC Report

## Predictive models and technology to improve crop yield

Climate change and falling water tables have been adversely impacting yield of crops. Predictive modelling and technology such as big data analytics, Artificial Intelligence (AI) and machine learning could play a pivotal role in crop and soil monitoring and further improve crop yield. It is estimated that 70 m Indian farmers will be impacted by AI and connected farm services in 2020, generating US$ 9 bn in farmer incomes[95].

In a bid to increase crop yield and provide food security for a growing population, the adoption of predictive technology and analytics in agriculture is expected to increase in the medium term. AI and machine learning projects in the agriculture sector have already been initiated by the government (to develop a crop yield prediction model for providing real-time advisories to farmers) and by some states including Andhra Pradesh, Karnataka and Madhya Pradesh. However, many more initiatives need to be taken by other states.

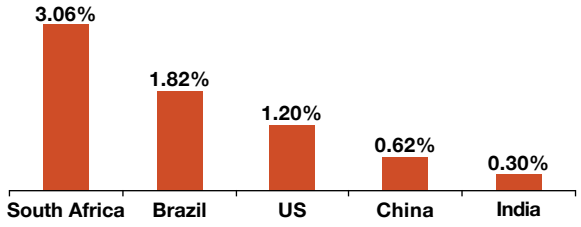
Our policies are partial towards certain crops like wheat, paddy and sugarcane. There is a need for incentivising production of crops such as pulses and oilseeds that are not water-intensive.

**Saurabh Garg**
Principal Secretary, Dept. of Agriculture and Farmers' Empowerment, Govt. of Odisha

### More R&D collaboration between government and enterprises

One key challenge faced by the agriculture sector in India is low spend on R&D. This is evident from the decreasing spend on R&D as a percentage of GDP in the sector over the last few years. India's R&D spend in the agriculture sector stands at 0.3% of agriculture sector GDP — much lower than that of other countries[96] (Figure 3.10.4). In order to double farm income by 2022[97], the country needs to spend more on R&D. One efficient way of doing this would be to drive private and public sector collaboration. Currently, the private sector has a low contribution in the overall R&D spending in the agriculture sector.

**Figure 3.10.4: R&D spend as percentage of agriculture's GDP**




Source: The Hindu BusinessLine

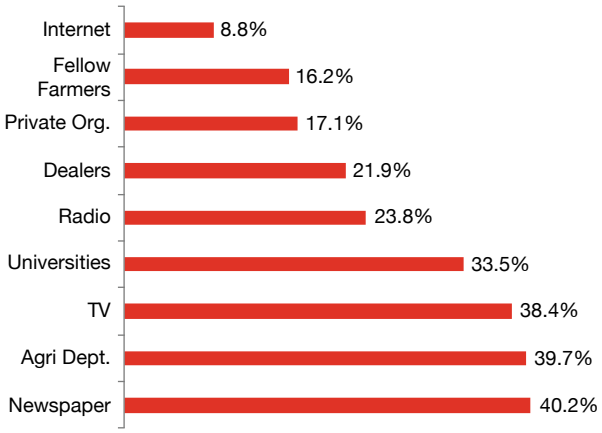
Private sector can play a larger role in developing improved technology for food and agriculture. This can include large R&D spending and bringing new commercial opportunities by common goals, better transparency, and better intellectual property (IP) rules.

### More efficiency in dissemination of information to farmers

Dissemination of information to farmers is another important aspect of increasing crop yield and bringing about climate change resilience. However, extension mechanisms in India face multiple challenges, including building capacity in government departments. Other issues are insufficient coverage of schemes; the existence of a digital and educational divide between urban population and farmers; lack of funds for operations; and capacity development.

Newspapers are the major information source for farmers, and the internet is the least used source (Figure 3.10.5)[98]. The government is taking multiple digital (e.g., eNAM, Kisan Suvidha apps), non-digital (e.g., Kisan Call Centre) and scheme-based initiatives. Given limited resources, the government needs to collaborate with private players and provide credits and exclusivity (in terms of specific zones) to them for increasing efficiency in extension mechanism.

**Figure 3.10.5: Sources of information for farmers**

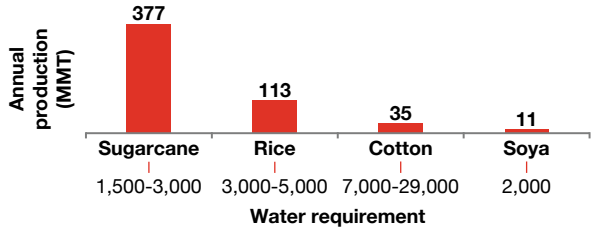



Source: IJCMAS

## Effective water management by use of technology for driving sustainability

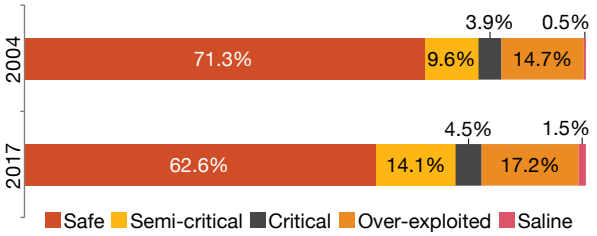
Water-intensive crops such as sugarcane, rice and cotton are produced in large quantities in India (Figure 3.10.6)[99]. Policy provisions such as assured procurement have contributed to some water-intensive crops such as paddy becoming the primary choice for farmers, subject to water availability. While fluctuation in rainfall is an issue, the biggest challenge India faces is depleting groundwater levels. This is evident from the decline in 'safe' units (blocks / mandals / talukas / firkas assessed by Central Ground Water Board) over the years. Safe units are those where the stage of ground water extraction is less than 70% (Figure 3.10.7)[100]. The pandemic has placed greater strain on the country's water resources, owing to health guidelines on more frequent handwashing for safety.

### Figure 3.10.6: Annual production of major crops 2017-18 (MMT) and typical water required per MT (in '000 litres)




Sources: Ministry of Agriculture & Farmers Welfare, WWF

### Figure 3.10.7: Percentage of units by groundwater status




Source: CGWB

Efficient water management, in particular through the use of technology, should be explored for sustainability in agriculture — for example, smart pumps and drones. This becomes especially important for the survival of major industries such as textile, rice and sugar mills which are predicated on the water-intensive crops. Hence, deploying the right technology at farm level will be critical in medium to long term.

Chapter 4

# Organisational value propositions

A good decision is based on knowledge and not numbers

– Plato

Organisations in each of the nine sectors will have to focus on a set of value propositions to create a checklist and framework of actions

Ten critical value propositions should be considered by organisations in an integrated manner while driving revival and growth. This will require enterprise, government and in many cases citizens to reorient their capabilities to the new normal we face. This will help them not only revive from the crisis but also unlock new growth and productivity avenues.

## Ten value propositions

| # | 'House of Revival and Growth' pillar | Value propositions |
|---|---|---|
| 1 | **Demand** | Rapid and agile demand sensing |
| 2 | | Discovery of business models for decentralisation |
| 3 | | Rebalance products and services portfolio |
| 4 | **Supply** | Comprehensive digital transformation |
| 5 | | Re-orient global and local supply chains |
| 6 | | Restructure cost for new reality |
| 7 | **Resources** | Upskilling, reskilling and wide employment |
| 8 | | Extracting meaningful insights from data |
| 9 | | Capital for survival and revival |
| 10 | **Institutions** | Create "triangle of trust" for revival and growth |

### Rapid and agile demand sensing

COVID-19 has produced three key shifts in consumer behaviour.

1. Value-conscious and focus on savings owing to the uncertainty associated with the pandemic. Consumers are also downgrading in various categories (for example, swapping cars for motorcycles), as well as trading down on brands.
2. More hygiene- and safety-oriented. This behaviour is seen across categories such as health and wellness, consumption of packaged goods and microbial paints.
3. Reduced mobility, and work-from-anywhere mindset are leading to lesser occasions for spending. This behavior, if sustained over the medium-term, may have multiple implications on product and service consumption (e.g., eating habits, recreational activities, etc.)

Traditional methods of demand sensing, such as market pulse surveys, may not be suitable in a period of fast-changing behaviours and contactless processes. Enterprises should record a broad range of real-time customer behaviour data and use machine learning to identify changing trends and derive future demand estimates from this. Enterprises would need to leverage fully connected data networks (for e.g., data by SKU, point and time of sales) and AI along the supply chain to detect patterns and triggering appropriate measures in response, enabling effective optimisation decisions based on demand patterns and a fully autonomous supply chain. Demand sensing will not only help reduce forecasting mismatch but also reshape approaches to customer segmentation, customer identification and targeting.

### Discovery of business models for decentralisation

Decentralisation presents an opportunity for businesses to drive medium-term revival and growth. To effectively tap this shift, enterprises need to develop new and innovative operating models amid demand and supply challenges. As an example, Project Shakti, Hindustan Unilever's partnership with self-help groups and NGOs is a network of 0.12 m women micro-entrepreneurs to distribute its products in rural India[1]. In the education sector, ed-tech start-ups are disrupting traditional business models through technology to overcome key infrastructure gaps such as quality teachers and limited educational resources prevalent in decentralised India.

Three principles can guide the development of models for catering to growing demand in India's hinterlands:

- **Desirability:** Enterprises should undertake micro-market scanning to understand consumer preferences and ascertain demand potential. This will enable prioritisation of market segments and redesign portfolio and product-price offerings suited to micro-market needs.
- **Feasibility:** Cost-effective and efficient route to market will be key differentiators. Enterprises should consider current adjacencies and strength of local supply chains, along-with 'partner' versus 'build' to piggy back on existing complementary chains, including those of local organisations
- **Viability:** Enterprises will need to optimise additional capital outlays, and limit them to collaboration and local partnership.

Decentralised business models will enable organisations to not only deepen their markets beyond metropolitan centres to urban, semi-urban and rural centres also create new centres of supply across the country.

### Rebalance products and services portfolio

The shifts outlined in this report, changing buyer behaviours and disruptions in supply chains, has created an incoherence between the enterprises' capabilities and products and services. Capabilities that were once considered 'differentiators' may be table-stakes in the new reality (e.g., automation). Organisations will need to reconfigure for a contactless and decentralised world. Products and services portfolio will need to be rebalanced to drive coherence with these new capabilities. In addition to this, economic crisis will create significant pressure for cash preservation, underlining the need to understand which product and services are critical for growth; prioritizing business around these. Organisations will require to divest, acquire and partner to rebalance their product and service portfolios. As per the PwC CxO survey (June 2020), nearly a third of the companies expect to develop new products and services.

For example, retailers need to re-evaluate their real estate portfolio to strike a balance between online and offline retail. They must re-evaluate the concept of a 'store' and build omnichannel capabilities, as consumers diversify purchasing channels across physical and digital. Financial institutions need to define services, based on alternate credit evaluation mechanisms (e.g., cash flow based, GST details, etc.) to drive credit into the market. Automotive OEMs need

# Pre-distribution of economic gain

Traditionally, most companies have targeted profit as their central goal. There is a business and enterprise logic that flows from this: business makes profit, which is then distributed as tax to those who have less. However, as market economies are deepening, particularly in emerging economies like India, another model, pre-distribution, could make a deeper and wider impact. The COVID-19 crisis and a whole-of-society approach may offer us an opportunity to re-orient our thinking in this direction, and India can lead this process.

What does pre-distribution mean? It implies that the very process of production of service can give economic value to a wide section of society. Not only will this generate economic gain, it will also link that gain to purpose and meaning. In the Indian context, as the emerging middle class rises, existing and new businesses can engage with it directly by involving the middle class in the production process. Not only will this broaden the base of business, but it will also pre-distribute income to those who need and deserve it. It will also connect youth to purpose, leading to greater social stability. Does this mean smaller margins for business? No, instead it will likely increase the market for that enterprise, deepening and broadening its reach, and increasing its influence, impact and resources across a wider section of India. This will create more consumption and production without inequality which will benefit a large democracy like India.

What is needed for this? It requires businesses to look at the deeper needs of India. A needs-based approach that is whole-of-economy and using technology platforms and new skills. It will require collaboration with government and citizens so that businesses understand real needs and local perspectives. It would involve the non-metropolitan districts looking at businesses that use the agricultural sector as a supplier, and decentralising production given the shock generated by COVID-19. It will also require providing technology and skills to a wider segment of society for them to participate.

If India does this, it will revive its own economy faster while creating a deeper economic footprint. From my vantage point, this will also light a path for other emerging economies, showing a democratic and inclusive path out of the current crisis. This is an opportunity to revive and grow its economy, but India can also become a torchbearer for pre-distribution that will make its society and polity stronger.

**Colm Kelly**
Global Leader PwC
Purpose, Policy and Corporate Responsibility

to evaluate their portfolio (e.g., 2W,4W, used vehicles, commercial, etc.) amidst interplay of three shifts in consumer behaviour – value consciousness, safety and hygiene focused, and work from anywhere.

### Comprehensive digital transformation

Digital transformation will be required to focus on driving customer centricity, building resilience in processes, transparency in operations, and enhancing cost efficiencies. As per the PwC CXO survey (June 2020)[2], 77% of respondents are focusing on accelerating digital enablement of business. For instance a leading oil and gas production company is using automation to maintain plant utilisation with less than one-third of its workforce[3].

Comprehensive digital transformation spans front-office (e.g., go-to-market, CRM), middle-office (e.g., operations, supply chains) and back-office (e.g., ERP, finance, HR). This transformation will need to adapt to the new reality (e.g., platform business models, fostering remote collaboration, enabling touchless commerce, exploring enhanced virtual engagement opportunities). Enterprises will need to build or acquire capabilities, such as artificial intelligence and automation, and capacities, such as data centres and cyber security, to enable this change.

Efficient and predictable service delivery with a citizen-centric focus was already a key driver for government and public sector digital efforts. Government will now need to use platform-based thinking to ensure that the service delivery efficiencies brought about through digitalisation are spread uniformly across the states and in urban, semi-urban and rural centres.

### Reorient global and local supply chains

Various countries, in their stimulus programs, have underscored the need to diversify production to reduce over-exposure on select foreign countries. As per the PwC CXO survey (June 2020)[4], 60% of the industrial enterprises, and 48% of healthcare and pharmaceutical enterprises are actively considering localisation options. The Indian government has also incentivized production of APIs (Active Pharmaceutical Ingredients) in India to reduce external overdependence.

Enterprises need to focus on three key areas:

1. **Resilience:** Enterprises need to re-evaluate their sourcing strategies to assess the potential impact of shifts in global trade on their portfolio of products and services. At the same time, government needs to ensure that it is able to attract foreign companies moving out of other countries through appropriate trade, taxation and ease of doing business reforms.
2. **Improving supply chain visibility:** Enterprises must focus on deploying supply chain visibility tools that provide line-of-sight on capacity constraints into first-, second- and third-tier suppliers. This will help in building a complete sourcing profile for components and their sub-assemblies, providing inputs for modelling potential disruption risks.
3. **Strengthening local supply chains:** Enterprises need to develop a flexible ecosystem of local suppliers to manage disruption risks and ensure business continuity. This may mean developing an additional supplier base, creating infrastructure such as local depots, and/or decentralising manufacturing.

This crisis provides Indian enterprises with the opportunity to not only reduce import dependencies, but also to raise India's position globally by helping the country emerge as a key participant in global supply chains.

Government, especially state governments, have a vital role to play in enabling India to become more self-reliant and create a favourable investment climate. State governments are already moving rapidly to attract international companies, but this effort has to be backed by on ground ease of business reforms and brand building.

### Restructure cost for the new reality

While the immediate priority is to reduce the cost base for survival, businesses need to reduce cost with a medium-term perspective of revival and growth. As per a PwC CXO survey (June 2020)[5], priorities have shifted from immediate actions like employee availability and supply chain continuity, to focusing on generating a demand rebound and cost optimisation. This should take place with a compassionate mindset

Organisations need to reduce costs keeping in mind that this should not cut into their core capabilities. Three key principles emerge for resetting costs and reshaping businesses, making organisations fit for revival and growth:

1. **Redirect costs** to the 'right' growth drivers by revisiting strategic priorities in the new reality. As an example, strategies or business model that may not have been viable in the past may

## There is a need to create demand magnets closer to labour supply in the market.

**Vanita Vishwanath**
Chairperson, Aajeevika Bureau, and Co-Founder and Ex-CEO, Udyogini

become key focus areas in the medium-term (e.g. decentralisation, digital front-ends).

2. **Assess changes across the value chain** to reset cost structure. Costs that were once fixed in the minds of business leaders are now becoming variable (e.g. office space, employment models). A comprehensive across-the-value-chain 'zero-based budgeting' is important keeping medium term revival and capabilities in mind.

3. **Adopt a whole-of-company approach.** By bringing in different departments together, involving managers at a level below leaders, a whole-of-company approach has seen success. We have seen departments that normally separate come together naturally with a common purpose (e.g. around digital adoption). In one case when cost reduction was open-sourced, employees themselves came up with areas that they knew had flab.

### Upskilling, reskilling and employment

The pandemic has accelerated changes in how and where we work. Agility and technology adoption have become increasingly critical in how organisations transform their workforces to drive productivity, innovation and growth. Upskilling is key to bringing about this change and is about anticipating the right skills for the future, laying the cultural foundation, delivering modern upskilling programmes with the right ed-tech, and being able to leverage emerging employment models such as the "gig" workforce. This will enable organisations to access a wider and more diverse workforce.

According to recent research by PwC[6], there are six keys to unlocking upskilling at scale:

- **Shared reality:** The establishment of a common understanding of which new skills are important.
- **Spaced repetition:** The sequencing of learning opportunities in a way that strengthens the right cognitive circuits and builds new habits and capabilities.
- **Citizen-led innovation:** The ability of employees to choose the activities — the skills and the means of learning them.
- **Authentic informal leaders:** The deployment of early enthusiasts to spark interest and emotional impact within the organisation's culture.
- **Social learning:** The use of small working groups, ideally composed of people from diverse backgrounds, to foster collaborative experimentation and mutual support.
- **Self-awareness:** The tracking and measurement of results in a way that accelerates the rate of improvement both for the employees and for the initiative as a whole.

While government has been focusing on upskilling with Skill India and PMGDISHA[a], more focus is needed to create local employment opportunities in urban, semi-urban and rural centres. This will require using local resources for setting up local enterprises and a collaborative approach through which government can play an enabling role with larger enterprises building supply chains and market connections. Government has also embarked on a capacity building effort for its own employees with iGOT 2.0 which will serve to democratize learning.

### Extracting meaningful insights from data

Enterprises need to shift their approach to data – our belief is that data is less like oil, and more like a clean river. Any country, state or organisation does not fully own it; it flows from one to the other, often bringing economic life where it travels. Data analytics was already gaining importance before the pandemic, whether as an enabler for e-commerce or the adoption of digital technologies in internal operations.

Institutions need to invest in capacity and capability development to leverage data to its full potential through the following four key principles:

[a] Pradhan Mantri Gramin Digital Saksharta Abhiyan

1. **Develop digital infrastructure and data governance** mechanisms for sophisticated data collection, management and analytics at each stage of the value chain.
2. **Enable data standardisation and implement data security** measures to allow for cross-organisational exchange of information.
3. **Develop a common data sharing platform** to improve data availability and transparency, thus reducing cost of acquiring, maintaining and transferring data and curbing cost inefficiencies arising from information asymmetry.
4. **Focus on data and technology skills** development to foster data analytics capabilities and set up operating model policies to enable rapid data-driven decision making to fully utilise the power of data.

Government, arguably, is the largest custodian of data and therefore has a crucial role to play in realising the full potential of data in India. Regional authorities across the country need to realise the full potential of their data and create strategies to use data for benefit of citizens. This will happen when the right structure and platforms for data collection, verification and insights are available for all. It should also play a critical role in formulating right policies on aspects such as data security, privacy and trust.

### Capital for survival and revival

The economic impact of COVID-19 will severely test balance sheets and cash flows. Stretched balance sheets may lead to acquisitions, and accelerated divestments for enterprises. MSMEs are grappling with a short-term liquidity crisis and require a fresh infusion of capital to restart operations.

- To drive revival and growth, enterprises need to conduct scenario analyses to assess impacts on cash positions and identify financial and operational levers for cash conservation and working capital optimisation. Enterprises may need to seek additional funding support from existing lenders, new funding from alternative providers or opportunities to generate cash via equity releases.
- For opportunistic acquisitions or divestments, there will be a need to conduct accelerated due diligence to take control of the new acquisitions or realise cash while ensuring value is maximised.

Government will have to play a key role ensuring last-mile distribution of stimulus package through simplification of compliances, promoting digital platforms, and program managing implementation through active state representation. Banks will have to focus on developing innovative products to stimulate household credit, while government can support through incentives and taxation relief.

### Create “triangle of trust” for revival and growth

The above value propositions can only be realised through collaboration between business, government and citizens. Building trust in society will be critical to driving an inclusive recovery, as the success of various public policies will depend on behavioural responses from business (such as compliance to GST norms) and citizens (such as adherence to COVID-19 health and safety protocols). We believe the following tenets and behaviours are critical towards fostering trust both within and across the triangle of government, enterprises and citizens:

- **Inclusive and open communications:** Clear, transparent and two- way communications with all stakeholders on a regular basis.
- **Reliability and accountability:** Reducing uncertainty in challenging situations and taking fact-based, confident actions while taking full accountability for outcomes.
- **Responsiveness:** Providing citizen-oriented, efficient and accessible services to address the expectations and demands of the stakeholders.
- **Integrity:** Aligning with standard principles of conduct to safeguard stakeholders’ interests in the best possible manner.
- **Fairness:** Involving the stakeholder groups in policy-making and policy-implementation processes.

As one government official himself stated, “if the circle of trust has to enlarge in these times, then government will have to take a lead”. It will need to engage and empower businesses and citizens to become active participants in policy and regulatory actions for shared ownership of both the process and outcomes. However, in these times enterprises and citizens have to step forward, so that government which has a wide agenda can use its resources to enable and build platforms.

Chapter 5

# Whole-of-Society execution approach

A correct diagnosis is three-fourths the remedy

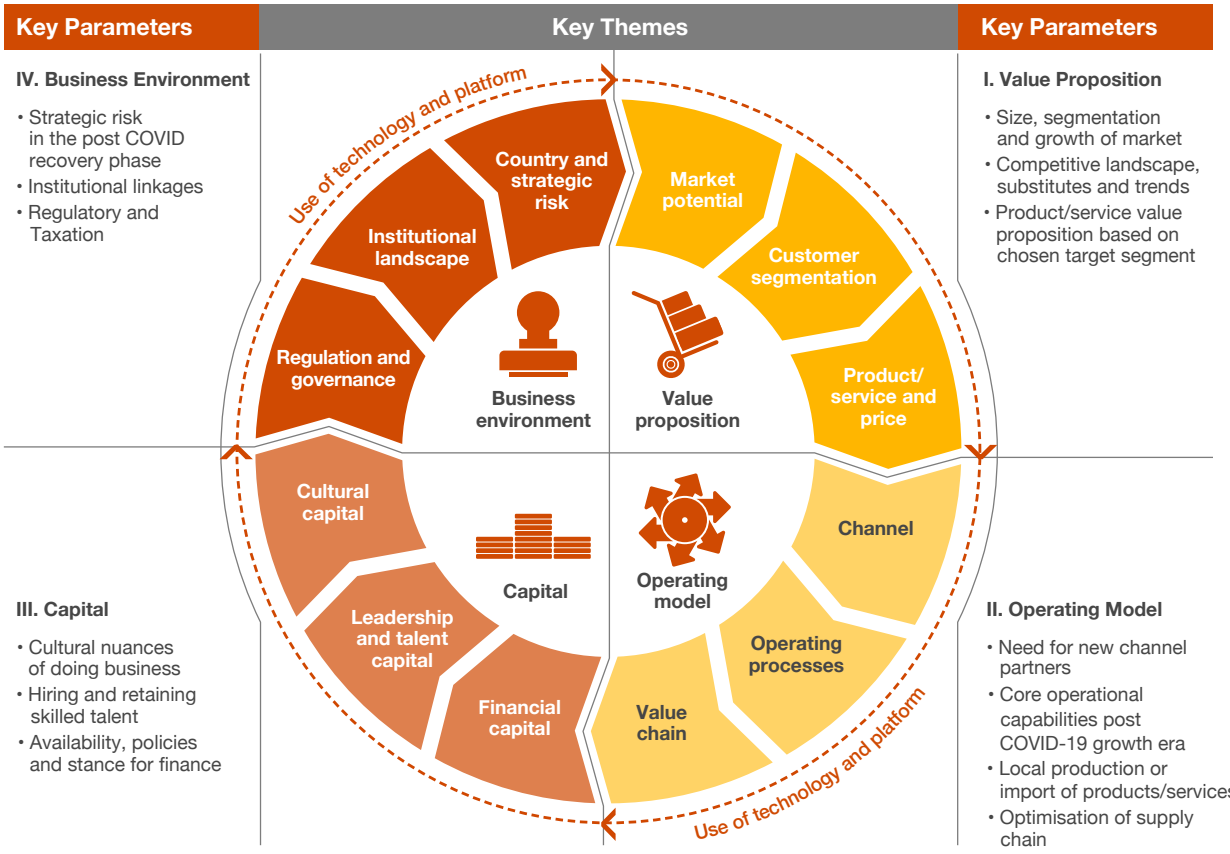
– Mahatma Gandhi

## Whole of Organisation approach

The organisation level propositions across sectors outlined in this report requires intense collaboration within an organisation to drive revival and growth. A useful framework that can guide organisations and used in our sector explorations consists of bringing together the front office, middle office, capital and governance together using technology platforms as well as a change in mindsets.

To revive and grow organisations need to ensure value propositions, operating model, capital and business environment are in sync (Figure 5.1). Leaders will have to move beyond their departments & silos. For government the four elements are as a provider, operator, resource and orchestrator that has to be balanced.

**Figure 5.1: Whole of Organisation Framework**



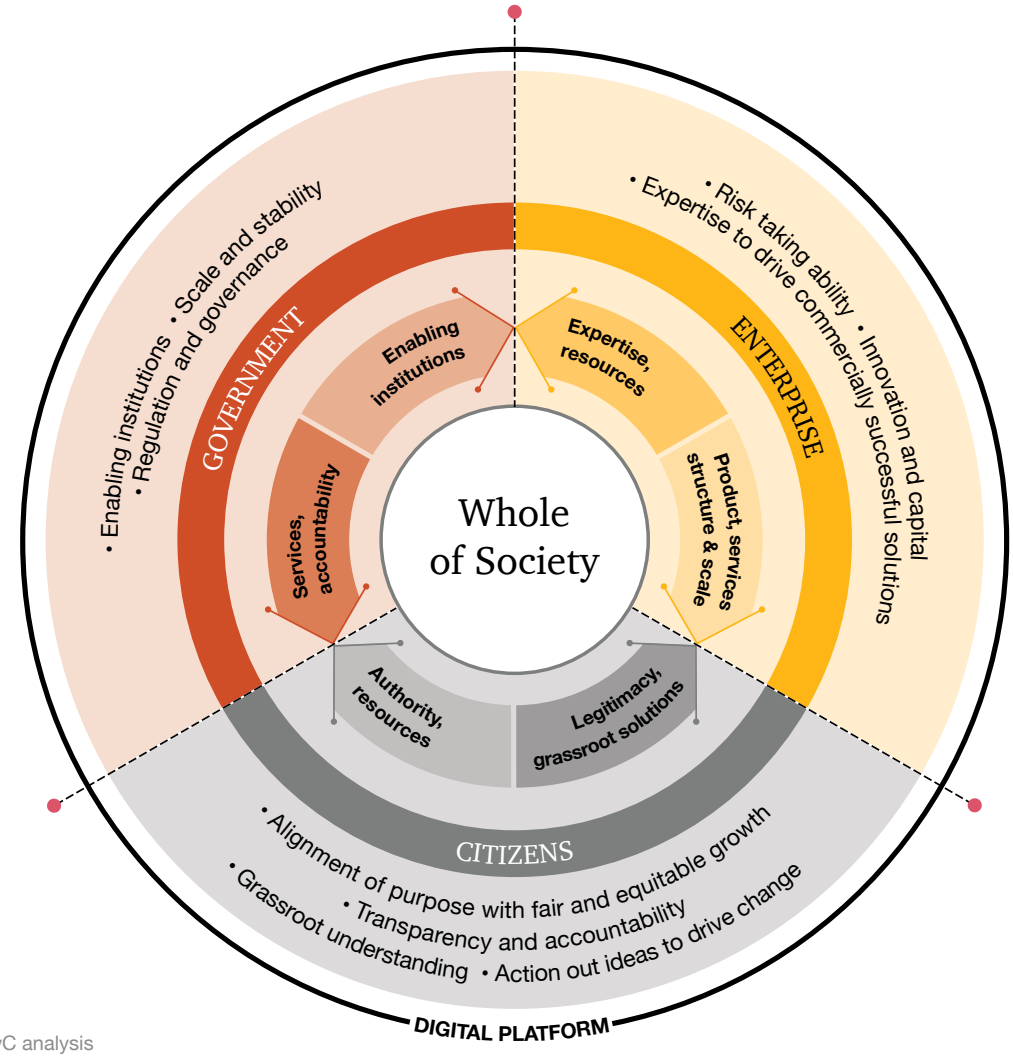
## Whole-of-society approach

### Rising convergence between private, public and citizen

The last two decades of globalisation, automation, and technological revolutions ushered a wave scale, efficiency and collaboration. Even before COVID-19, the world was going through an unusually tumultuous phase – economically, politically and environmentally – awareness grew of the need for cooperation among various societal elements.

The environmental movement especially came as a reminder to the world and the three elements of society (Government, Enterprise, Citizens) that we share a common destiny. The digital revolution enabled greater collaboration between enterprises, government and citizens. We believe such a whole-of-society collaboration will be key for revival and growth.

**Figure 5.2: Whole-of-Society approach**




Source: PwC analysis

### Whole-of-society approach in fighting contagion

COVID-19 requires a coordinated response from all segments of society, recognising the complementary strengths of each. Countries such as South Korea have already shown how this approach can help fight the virus effectively. As part of its own 'whole-of-society' approach, South Korea addressed the pandemic in three broad areas:

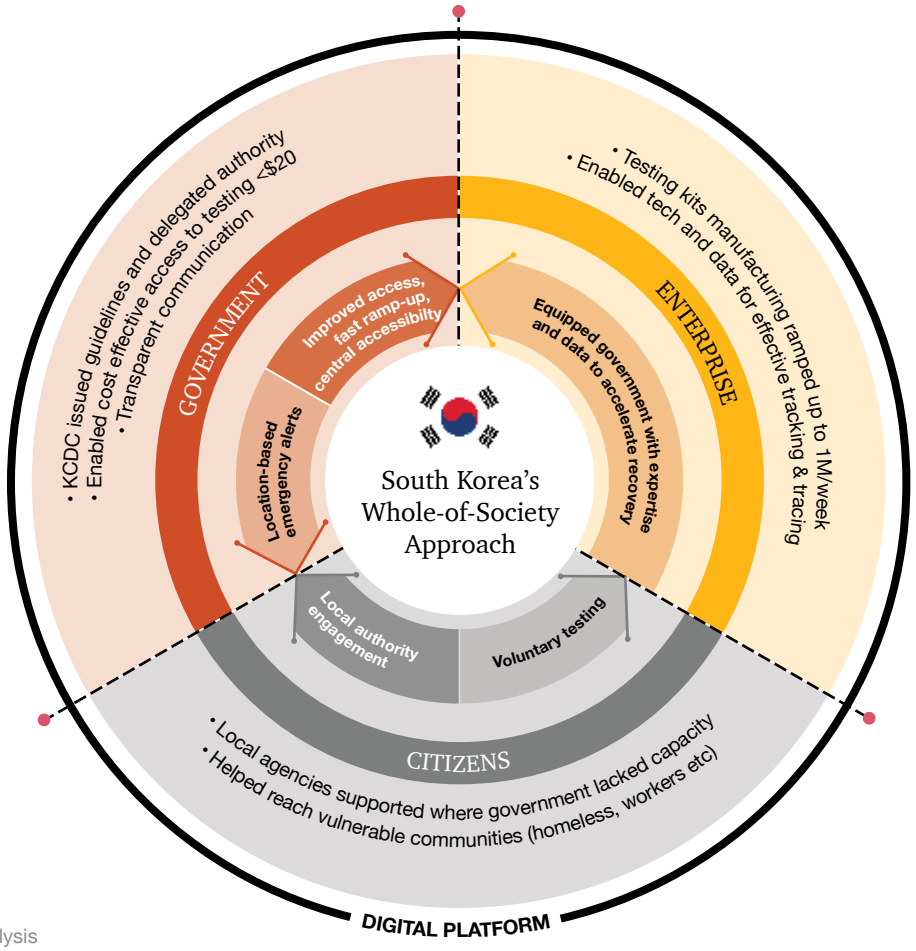
1. **Government enablement**
   The Korea Centers for Disease Control and Prevention (KCDC) managed to approve testing kits in just two weeks. The KCDC also delegated decision making to local authorities, under its overarching guidelines.

2. **Private-sector expertise and capacity**
   The use of a rapid approval process by the KCDC helped manufacturers such as Seegene increase capacity from 100,000 to 1m tests[1] per week, enough to not only meet local demand but export to other countries in need. The government and the private sector pooled resources to make testing free or priced at less than US$ 20[2], through walk-in booths and drive-through centres.

3. **Civil society engagement**
   Local bodies encouraged society, for instance by testing 200,000[3] church members and isolating those testing positive for COVID-19. Effective communication and transparency helped build citizens' trust, leading to high voluntary participation in testing, tracking and tracing.

Technological platforms were deployed to coordinate people's movements through CCTV, phone records, credit card transactions and mobile apps.

**Figure 5.3: South Korea's Whole-of-Society approach in testing and tracing for COVID-19**




Source: PwC analysis

A whole of society response is not only appropriate but imperative to deal with the current situation.

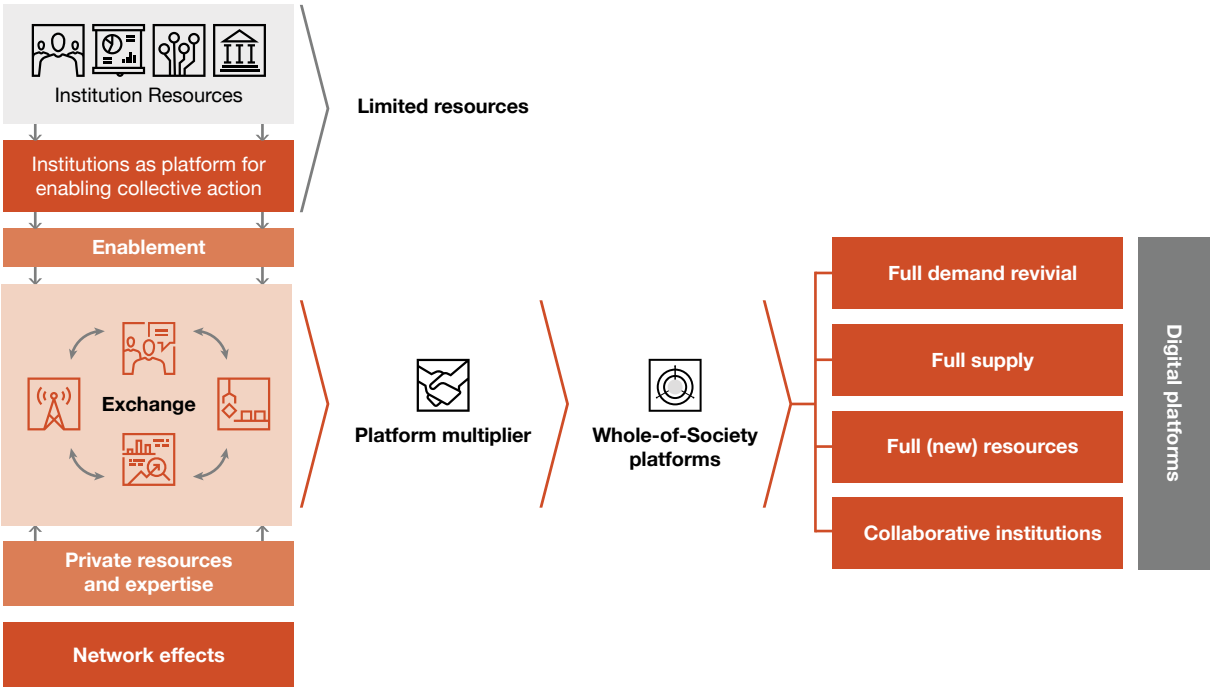
**Arjan Kumar Sikri**
Former Judge, Supreme Court

## Platforms can activate the whole-of-society approach

Platform business models have demonstrated the power of enabling scale, growth and outcomes with far fewer resources than traditional models and by involving customers or citizens in the value creation process. Today the largest private companies — Apple, Alphabet etc. — are using this approach to reach more customers and suppliers, relative to traditional resource- based and manufacturing companies of the past. They do so by not just dropping traditional value chain, production and marketing model but by creating an ecosystem that involves the consumer and supplier intermeshed in production and consumption networks. Platform approach will help enable whole-of-society collaboration through a shared infrastructure that aligns and drives diverse stakeholders in the revival and recovery phase:

- Unlocking complementary resources across government, enterprises and civil society
- Driving faster adoption by setting common standards to allow businesses and institutions to scale up
- Enabling better skills and capability transfer by involving the customer, citizen or stakeholder in the production process
- Deepening and widening the reach of economic activity, isolated due to lack of infrastructure — policy, digital and physical
- Driving transparency, engendering trust with more open data sources and collaborative mindsets

**Figure 5.4: Whole-of-Society platform approach as a multiplier**




Source: PwC analysis

We are in need of a platform - that leverages local languages – to have a transparent dialogue across all segments of society.

**R Gopalakrishnan**
CEO, The Mindworks, Author

## India's national technological platforms

The whole-of-society approach, and the use of platforms to implement it, builds on a seminal paper by Tim O'Reilly on 'Government 2.0.'[4] O'Reilly suggested that platforms can enable governments to be rediscovered and reimagined. Similarly, we envision whole-of-society platforms enabling a rethinking and reimagining of the way in which revival and growth can be engineered during and after this pandemic. This crisis is an opportunity to redesign India's collaboration effort, bringing different elements of society together in a national programme of renewal and growth on a mass scale. It recognises that unless demand, supply, resources and institutions are addressed together, the revival will be slow. All boats will rise only if the lake gets filled again.

Over the past decade, India has created technology platforms to drive transformation in sectors, industries and the lives of citizens. Unified Payments Interface (UPI) and Aadhar have been flag bearers of the country's ability to deploy platforms to solve the problems of formal identification, financial exclusion and marginalisation. While UPI built up from initial ideas seeded by India's startup ecosystem, National Payments Corporation of India (NPCI) standardised and brought digital payments under a single umbrella with a scalable national payment infrastructure. The rapid rise in UPI's adoption rate was the result of seamless digital payment services offered by private players such as Google Pay, PhonePe (~80% market share in UPI). By July 2020, UPI crossed the ~US$ 1.5 bn transaction mark, with more than 164 Indian banks and 100 m active customers[5] on the UPI platform. Alphabet (Google) recognised this success by suggesting to the US Federal Reserve to consider a UPI like architecture for digital payments can be replicated in the US.

On the back of technology platforms like UPI, Aadhar, E-KYC, Digi Locker India has now built a critical set of technology stacks and platform use cases that could help with large-scale interventions involving all segments of society. This approach can be extended by giving platforms a wider meaning.

## Energising and enabling a whole-of-society approach using policy, technology and infrastructure platforms

**Thought to throughput.**
Several leaders we interviewed for this report agreed that India needs a new approach that is rapid, deep and wide and can execute at scale to cope with this crisis. There was also consensus that beyond policy, action has to be at the front end — near the consumer, the producer or the citizen. Our framework for delivering impact has to change. As one senior government official put it, "unless we bring policy implementation to the grassroots, the benefits of reforms will not percolate to the people. Our approach has to address grassroots implementation".

One successful example of 'thought to throughput' is ReapBenefit, which created an ecosystem of grassroots problem solvers. It did this by building a network of more than 33,000 young people[6], and enabled them to harness locally crowdsourced data to identify local community, civic and environmental problems; to ideate through a network of problem solvers; and to share lessons with local stakeholders and empower them to implement and act upon the DIY (Do it Yourself) solutions. The group tackled pressing urban community problems such as diverting 700,000 tonnes of waste from landfills, while building almost 300 civic innovation models that continue to expand and evolve.

The ‘thought to throughput’ approach can also be seen in citizen-empowering platforms run by governments. The Haryana state government has anchored its good governance platforms CMGGA[7] (Chief Ministers Good Governance Associates) in youth inclusion to drive rapid progress in e-governance, service delivery and education.

India requires many more ‘thought to throughput’ initiatives that will enable the enterprises and government to create enablement for execution and growth. We believe there are three ingredients enabling platforms.

1. **Policy element**
   These will provide greater clarity, better governance and standardisation of quality. For example, GST has simplified the national indirect tax regime by consolidating various taxes and reducing the compliance burden while increasing accountability and plugging tax leakages. As with any other platform, its real benefit lies in laying the foundations of a standardised and enhanced interoperable policy regime for trade and transactions across the country. This has helped bring down the cost of logistics and manufacturing, and has enhanced competitiveness. Policy element such as the GST establish the rules of the playing field — governance and quality measures that all ecosystems must follow. They provide clarity for all stakeholders and participants.

2. **Digital element**
   As mentioned above, India already has an enviable digital stack built over the past decade. This digital stack, combined with the country’s IT prowess, is a key ingredient for any platform. Robust digital platforms will complement both the policy and physical elements in the platforms that need to be created with increasing internet penetration at 500m online users and likely high bandwidth.

3. **Physical element**
   These are required as last-mile impact creators. Efficiency and outcomes can be substantially improved when technology and data-driven thinking are layered on top of physical platforms. Put another way, while digital technology enables the exchange of information, without physical infrastructure it will have limited impact. Physical networks and contact points can build familiarity, awareness and knowledge (often in local/ vernacular languages) and can drive adoption of these solutions. The AAA (triple ‘A’) platform[8] enables the three government frontline workers in each village, to collaboratively deliver health and nutrition services in a more efficient and effective manner. AAA refers to the Auxiliary Nurse Midwife (ANM), the Accredited Social Health Activist (ASHA) and the Anganwadi Worker (AWW). The AAA platform brings together the shared data, experience, and knowledge of all three health workers, enabling better identification, prioritisation and tracking of current and potential beneficiaries, with substantially better health outcomes.

The early experience of dealing with the COVID-19 crisis has demonstrated that India’s health and economic systems have benefitted from platforms. It has also demonstrated in many areas how government, enterprise and citizens can drive change. As India moves from the repair to the revival and growth stage in the coming two to three years, this approach can create an implementation framework to achieve full potential growth with far fewer resources, less time and less effort. It can help achieve national goals earlier.

Chapter 6

# Full potential ambition

When you are inspired by some great purpose,
an extraordinary project, all your thoughts break their bonds.

– Patanjali

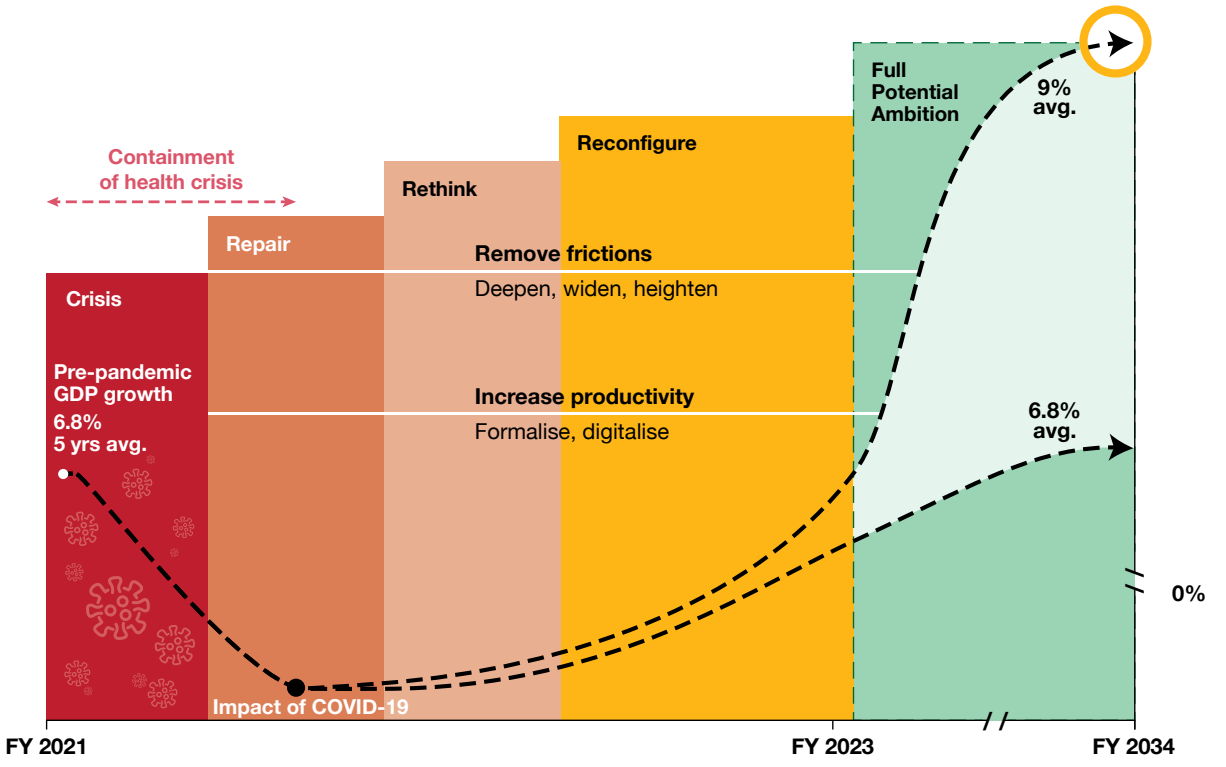
By removing frictions exposed by the COVID-19 crisis, and deepening, widening and heightening the economy, India can get back on an even keel faster. By further digitising and formalising the economy, the country can make the economy more productive. If US$2.9tn[1] was the annual base economic capacity of India at the beginning of the crisis, then returning to that base is just a first goal. A second, more important ambition is to unlock the country's full potential so that its post-revival growth is faster. Holding a mindset of 'full potential' will move leaders to use this crisis to unlock frictions, at speed, in any organisation or institution for greater overall economic output thereafter.

## Revival

The economy will go into a deep recession in FY21. Within organisations and throughout the economy, paying attention to key themes across the nine sectors and MSME segment as well as within the sectors outlined in this report will allow the country to come out of the recession faster. Some sectors, such as hospitality and aviation, will take time to recover, but they potentially have an even bigger opportunity to reinvent themselves. The growth rate of the economy in the bounce-back period will be high till the economy returns to the pre-COVID-19 GDP and growth rate, which stood at 6.8%[2] on average for five years prior to the crisis. Many observers are predicting this recovery can happen as early as Q2 FY22, although much will depend on containing the virus. Thereafter the economy has the potential to continue to grow at the 6.8% year-on-year growth rate.

But this crisis gives India an opportunity to aim higher.

**Figure 6.1: Full potential ambition**




Source: PwC analysis

## Full-potential revival and growth

Future of India — the Winning Leap, a report published by PwC India, set out three scenarios for India's growth over a 20-year period starting in 2014 and ending in 2034, with economic forecasts done with Oxford Economics. The base case was 5.5% year-on-year growth, slightly above the 5.2% growth experienced prior to 2014. The first scenario above this base was 6.6% year-on-year growth with investments in basic infrastructure and human capital. The second scenario was 7% year-on-year growth through additional spending on infrastructure both physical and digital. A third scenario, the 'winning leap,' created an ambition of 9% year-on-year growth if significant additional productivity improvements were made through shifts in key sectors, stronger R&D spend, transfer of technology and increased financial reforms.

The Indian economy has tracked 6.8% year-on-year growth since 2014, which falls between the rates of Scenario 1 and Scenario 2. Unlocking frictions and using this transformative moment to fast-track key activities over the next three years can create a 'full potential' growth rate of 9%, is a reasonable ambition. This ambition is not just fast recovery, but also unlocking the potential of organisations, key sectors and the economy by removing frictions during this period. This crisis asks leaders, governments and citizens to rethink basic assumptions and reconfigure organisations for higher and more inclusive economic output.

There is a caveat. Full potential ambition should factor in that the post-revival international trade and global economic recovery may remain weak. The ameliorating factor is that many global leaders suggest "revival will likely be slower than we anticipate, but once recovery starts, the bounce-back will be faster than we think."

India has built a broad consensus that a well-regulated, market-driven economy is the most productive, inclusive and appropriate model for ensuring the country's growth. Such a model drives production and consumption through market signals and provides room for innovation. But today that market economy is relatively shallow and unproductive. Frictions can be removed by two levers — first, providing volume to the economy so that a larger number of people are involved in production and consumption, and second, increasing the productivity of the economy.

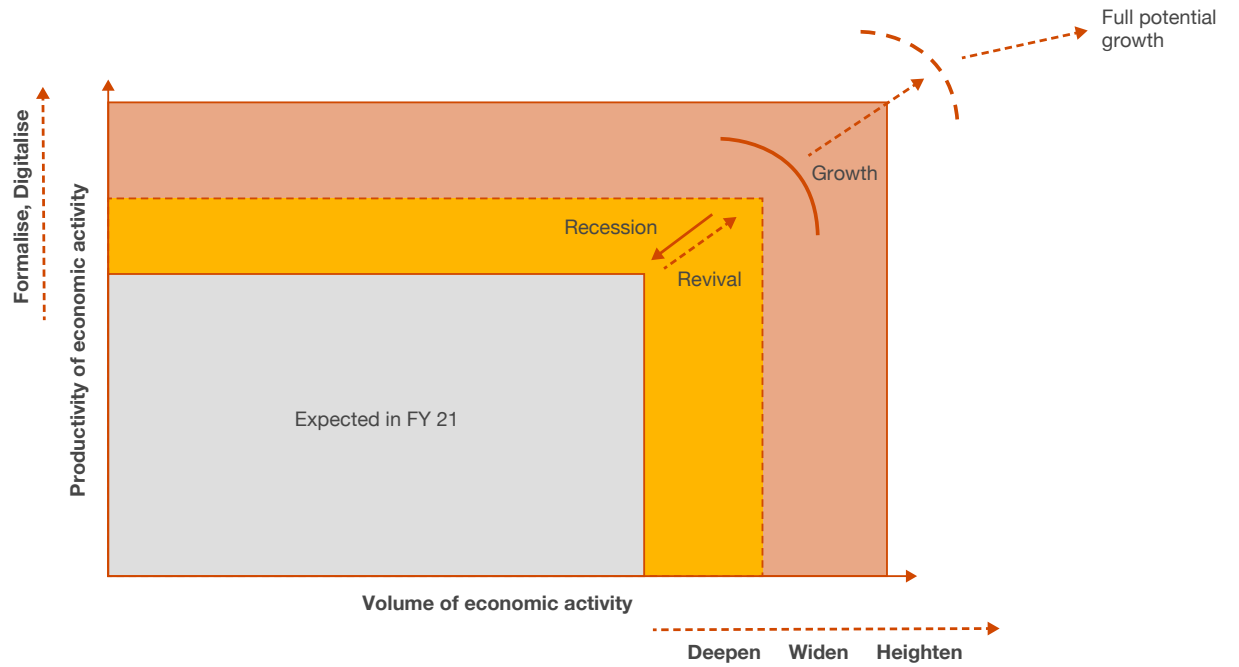
Volume will be created if India first 'deepens' the economy taking both production and consumption into smaller towns and districts, a trend that many sectors are anticipating. Volume will also be created if India 'widens' the economy by creating infrastructure and economic opportunities in the north, centre and east which has been an agenda of the government, but migration has brought this to everyone's attention. A third way to create volume is to 'heighten' the economy, by having stronger export orientation so that quality exports in both services and products are possible from locations beyond the metropolitan and urban districts. Here the 35 Mn diaspora Indian community can also play a supporting role. By deepening, widening and heightening the economy, India will enlarge its volume and by involving more people, it will make the economy more inclusive.

The second lever of productivity increase will be created if the country 'digitises' and 'formalises' the economy further. India has made enormous progress in digitising the economy over the past decade. The widespread use of smartphones and internet penetration has been a significant contributor to this. Our research suggests that by further enhancing data sharing, by linking it with vernacular languages and by creating platforms, this lever can enhance both the efficiency and the effectiveness of the economy. Formalisation will ensure that many micro, small and medium-sized businesses that are not participating in the market economy will be brought in, through policy measures, increased ease of doing business and enabling platforms.

If we have to take digital deep in India we will have to address how we make it vernacular friendly.

**Sanjay Gupta**
MD, Google India

**Figure 6.2: Full potential growth**




Source: PwC analysis

Key implications in the nine sectors and MSME segment, constituting 75% of India's pre-COVID-19 economy and the value propositions outlined here, are major drivers of full potential revival and growth. These organisational-level strategies are broadly linked to increasing the volume of economic activity and improving the productivity of the organisation. These things will happen if every leader thinks of this crisis as a 'full potential revival and growth' opportunity.

## Key macro vectors

Each step taken at the macro level is a vector. Each vector will have some aspect of deepening, widening, heightening, digitising or formalising. Some vectors relate to sectors that will play an anchor role in full potential ambition.

- **Vector 1: Investing in physical infrastructure**, in the semi-urban and rural centres, will give an immediate targeted boost to the economy and create widespread employment, but will also allow organisations to create the enabling infrastructure for longer-term productivity and deepen the economy. It will be critical for Government to activate the INR 100 Tn+ spend[3] earmarked under National Infrastructure Pipeline, for building critical infrastructure in the next five years.
- **Vector 2: Development of regional ecosystems** must target the Central and Eastern states. While the GDP-to-population ratio is lower in the Central and Eastern states as compared to the ratio in the North, South and West (0.6 vs 1.4)[4], these states have demonstrated resiliency during the pandemic. Decentralisation of the economy to the hinterlands will serve to widen the economy, create greater demand and supply, and build resilience in supply chains.

- **Vector 3: Export infrastructure, process and policy**, for products and services must go deeper within the country. Focus on critical EXIM logistics infrastructure supported with development of export-oriented zones, and formulation of trade enabling policies will enable export heightening. This was addressed in our recent report Advantage India. The 35 Mn diaspora Indian community can also heighten the economy through market and business connections.
- **Vector 4: Improving digital infrastructure** will be important, not merely in metropolitan and urban centres, where internet penetration is well developed, but also in smaller towns and districts where such digital support can engage more people, make connections to markets, and make supply chains and finance more effective. Digital impact will increase the productivity of the economy, a theme that is consistent across all sectors studied in this report. Even before COVID-19, as per Ministry of Electronics and Information technology, contribution of digital economy was expected to rise to 18-23% by 2025[5]. This vector will also help drive environmental sustainability.
- **Vector 5: Agricultural improvements** are already underway and will improve the productivity of agriculture, which is currently low. The Agriculture Infrastructure fund is a welcome step to create enabling infrastructure for evacuation of produce and development of non-farm income opportunities. The country can start moving workers from agriculture to low-investment manufacturing, a local service sector that can boost productivity.
- **Vector 6: MSMEs ecosystem creation** units will be vital for employment in the revival and growth phase given their employment-generating potential. This will help formalise the economy, creating both higher numbers of jobs and a higher quality of jobs. This will require an ecosystem that supports such businesses, through district-level platforms and links to both digital and physical infrastructure. The recent launch of the Unnati platform moves in this direction.
- **Vector 7: Improved healthcare and pharmaceuticals** will likely have their own 'Y2K' moment. The Indian IT industry benefitted from the threat posed to computers by the 2000 date change. Indian pharma companies that are already supplying generics to a significant portion of the global population can leverage key shifts resulting from the pandemic to upgrade, become self-reliant and support both an Indian and a global health revival process.
- **Vector 8: Transforming the financial services sector**, a key driver of higher volume and productivity, which has recently been going through its own sector-related frictions, will be important. This moment asks for a comprehensive reform designed to deepen and widen economic activity. In our sector investigation, the digital and physical growth of banks was a key factor in improving the depth of reach, and fintech played a key role in that process. Improving efficiency of credit delivery can stimulate consumption in the immediate term, enabling faster recovery
- **Vector 9: The democratisation of learning** through the Edu-tech sector, the recent experience of learning from anywhere, and deeper digital penetration provides an opportunity for upskilling and adult education that is transformative. It can improve the productivity of India's vast human capital. This education effort should include broad-based learning that encourages innovative mindsets, and the recent National Education Policy is a welcome push in that direction.
- **Vector 10: Investing in higher-end R&D**, innovations, better collaboration in the scientific community, such as, specific sector-level R&D collaborations and global transfer of knowledge, should be encouraged during this crisis. Indian companies should examine their appetite for R&D so that the wide-scale innovation that is expected from this crisis creates IP that can be owned and generated in India.

These vectors will require a broad public-private-citizen partnership. A sense of urgency, a knowledge that the country must be the tide that lifts all boats, creates an opportunity for such a partnership in the medium term.

### The Prize: Creating 3 more India's by 2034

If India is able to execute on a full potential revival and growth approach by creating an economic engine that has both bigger volume and increased productivity, it can achieve 9% year-on-year growth for the coming decade (FY24 to FY34, relative to the base potential). India would achieve its near-term vision of having a US$5tn economy earlier, an aim the government was pursuing before COVID-19.

If the Indian economy achieves full potential economic capacity, over the coming decade it can create an additional cumulative US$10tn of economic activity. Equally important, this activity will be more inclusive as the actions suggested above will make India's economic footprint deeper and wider. By unlocking the economy, over a three year period at the end of FY23, the 75th year of Indian independence, India can add enormous additional economic value – the equivalent of 3 India, over the subsequent decade. Millions of people can be brought out of poverty, India can become a middle-income country, and future generations will inherit an economy that is larger and more productive.

Executing a full potential country-level strategy will happen only if each organisation takes on a full potential mindset. We have outlined how execution can be planned along four phases: repair, rethink, reconfigure and report. Some organisations may have to restart. This will happen on the ground if Indians unite and energise the entire country towards these goals.

### Risks and mitigating actions

The achievement of full potential revival and recovery has many risks. The most obvious is the delay that may be caused by the pandemic, which as of the end of July had still not peaked in India. Beyond this variable, which itself requires investments and focus, the following key risks can get in the way and should be addressed:

- **Fear of failure:** Paraphrasing Franklin Roosevelt as he was fighting the Great Depression in the 1930s, the first risk is the fear of failure itself. It is important to remind each other that the core economic strength of India has been dented, not destroyed. Cultivating a positive mindset that together India can come out of this crisis will be important.
- **Lack of resources:** Having the resources to engineer a revival as well as a subsequent growth phase will be crucial. This will require using techniques that pool resources, focussing on those activities that are critical, removing frictions that cause extra effort and lower productivity, and using balance sheets of organisations and the country.
- **Lack of execution:** Lack of execution on the ground and the capabilities for execution were commented on by several leaders. While strategies in organisations and policies in government are well constructed, translating them to 'on-ground' impact requires knowledge of last-mile execution. Enabling platforms can play a key role in mitigating this in the short term, but medium-term capacity building in organisations and the government is required.
- **Geopolitical disruptions:** Geopolitical disruptions may continue, as it is likely that the world will get more polarised. This pattern emerged in the recent past with national priorities driving trade wars. It has accelerated in the crisis.
- **Lack of enabling platforms:** Enablement of economic activity has been improved by the government and India's EoDB ranking has improved significantly over the past few years. However, the last-mile delivery is weak. This can be enhanced by enabling platforms (see chapter 5) for use by citizens, enterprises and government, using data.
- **Digital security risks:** The revival and growth phase, and thereafter the operating model of India, will rely on increased data exchange through digital methods. Cybersecurity will remain a considerable risk which should be mitigated by detailed contingency planning for attacks with backup digital routes to build redundancies.

A key risk mitigation is mission clarity over the coming three years. Everyone impacted should understand they have an individual, collective, organisational, sectoral and country-wide responsibility for full potential revival and growth. People understand this is a transformative moment; shaping it as a tangible mission will drive collective action, reducing the risk to achieve the country's collective prize.

Chapter 7

# Reinventing the future

Faith is the bird that feels the light
when the dawn is still dark

– Rabindranath Tagore

Reinventing the future is a goal that may seem overtly ambitious at this juncture. But if there is one country that can accomplish this, it is India. Before the crisis, India was a well-tested polity and a stable economy, with a young population. A severe exogenous shock created a crisis, but it can also be the starting arc of a reinvention that can reset India's place on the global stage.

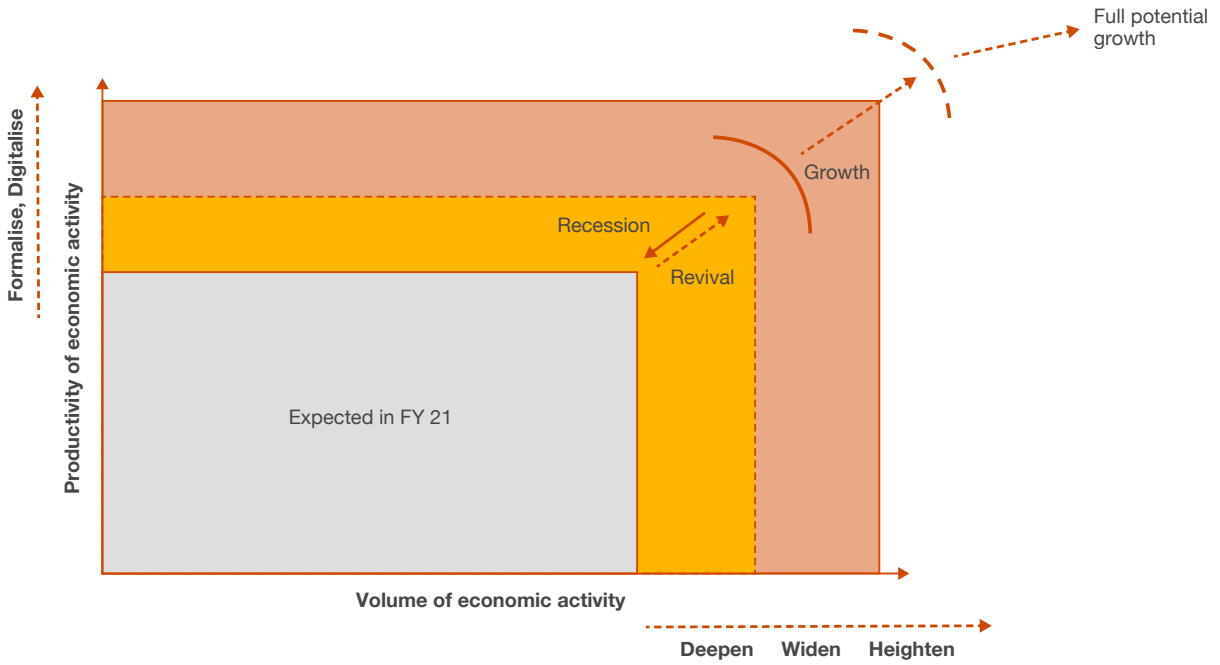
## Three phases of revival and growth

Reinvention has three broad phases - Repair, Rethink, Reconfigure and two vectors volume and productivity for implementation:

- Many companies have already accomplished the immediate task of repair, stabilising their organisations in the immediate aftermath of the crisis.
- Organisations now need to rethink to improve productivity, so that their revival is fast and their potential is enhanced. This can be driven by digitising and formalising, providing the organisation with higher output for the same volume of economic activity.
- Leaders will also be required to reconfigure their organisation to understand demand and supply, with full resources of the organisation as the economy recedes in FY21 and then starts to revive. By deepening, widening and heightening, they should attempt to increase the volume of economic activity, focussing on key trends over a two- to three-year horizon.

As revival and growth take place, organisations will also have to 'report' on progress. In this period, some organisations will stall and stop, and will require a 'restart'.

**Figure 7.1: Levers for revival and growth**



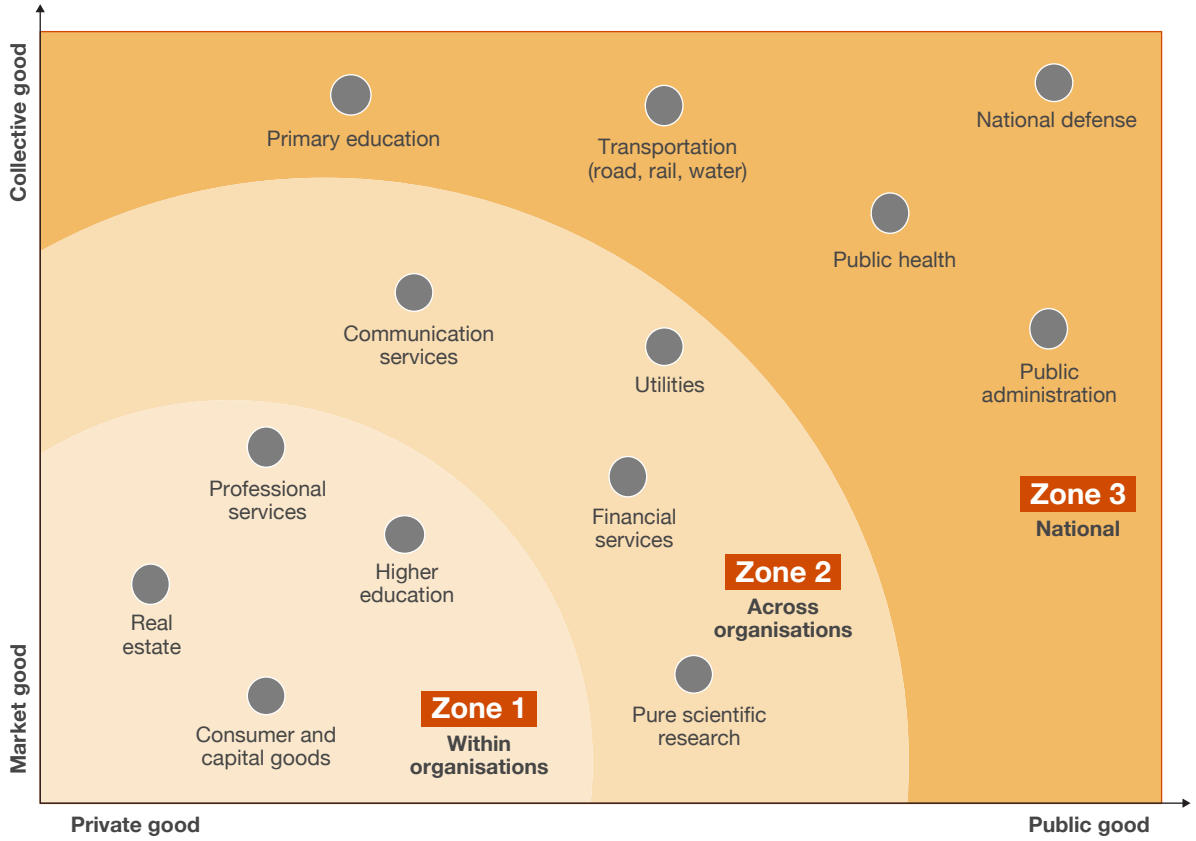

Source: PwC analysis

### Collaboration for execution

A collaborative mindset understands that 'the growth of one is the growth of all.' More production and consumption, more release of resources will raise the tide and lift all boats.

- Containing the virus has already led to collaborative actions in the 'Repair' phase, and this should continue as the country moves towards 'Rethink' and 'Reconfigure' phase.
- The private sector, the public sector and citizens are equally impacted by this crisis, and each must step forward in what we are calling a whole-of-society approach. Each must consider the perspective of the others. Leadership attributes outlined below emphasise that only through concerted action by all parties will we achieve revival, growth and reinvention over the medium term.
- Different organisations and sectors across the economy will collaborate, depending on nature of the good or service - public or private. This will drive different types of collaboration - within, across organisation and national, as outlined in the figure below.

**Figure 7.2: Nature of goods and services**




Source: Samuelson et. al., PwC analysis

# Turning points in Indian history

In 1947, when India achieved independence, its economy was close to US$100bn[a,1], about the same size as a large Indian conglomerate today and the country had roughly 350mn[2] people. An untidy partition created a cataclysmic moment when close to 15mn people travelled across borders and 1mn people lost their lives[3]. Indian democracy was dismissed as fragile and unlikely to survive, even though our founders quietly knew they would build a new nation.

The resilience and growth of India's democracy surprised the world. Three early wars, in 1962, 1965 and 1971, did not dent India's confidence. Despite political uncertainty and regional insurgencies, 17 general elections later, it remains a resilient democracy.

Excluding a recession in 1979, the Indian economy has grown reasonably well since independence. India's GDP growth rate for the 73 years since independence averaged 5%[4]. This is lower than ideal, but given a 0.4% growth rate for 100[5] years before independence, it still represents a positive shift. The 1991 balance of payment crisis was a significant economic jolt, but it set in motion significant reforms, and the average annual growth rate rose from about 4.3% to 6%[6]. Recent global crises — the 1997 Asian crisis, the Great Recession of 2008–09, and the MERS and SARS pandemics — had a limited impact on India. The country was well on its way towards solid economic growth, nearing the US$3tn GDP mark, before COVID-19 struck[7].

The COVID-19 pandemic has put the country's resilience to its severest test, requiring a collective national response with few parallels in world history. The US Great Depression of the 1930s could be one, but the population of the US at that time, 123mn, was relatively small[8]. Two examples come closer to the response and behaviour needed today. The first is the Marshall Plan to revive Europe after World War II. The second is the Quit India movement. In the first case, more than US$130bn[b] of investments were made in new infrastructure that created the Europe we all know today[9]. The second was a movement to evict a colonial power led by a frail-looking man, Mahatma Gandhi, the father of the nation, using the republican energies of millions of Indians.

Both examples point towards two complementary strategies for the country's revival and growth. First, targeted large-scale investment in policy, digital infrastructure and physical infrastructure — what this report loosely calls enabling platforms. Second, the involvement of as many Indians as possible in the revival process. By mobilising the republican energies of its citizens who are enabled by these platforms, India can revive and grow the economy rapidly. When these twin strategies are employed, this crisis can become another turning point for the Indian economy, and for history.

[a] Based on GDP data for 1950–51 at current prices
[b] In 2019 US$ terms

**We're a USD 2.9 tn economy perched on a pinhead; to achieve a USD 5 tn economy we need to broad-base our economic structure through widespread enterprise creation.**

**Ravi Venkatesan**
Founder, Global Alliance for Mass Entrepreneurship and former Chairman of Microsoft India and Bank of Baroda

### Implementation approach

Over the medium term, the approach to execution in a future that remains volatile, have to be principle based.

- In such situations those on the front line matter most, and decentralising decision making, allowing local leaders to deal with local problem solving.
    - A global multinational in India realised that its devolved structure of execution would have to be further deepened, given that the crisis requires local decision making locally in a fluid and changing environment.
- Involving employees, stakeholders and customers in creating solutions may seem a long-drawn-out process when rapid action is needed. But in the 'rethink' and 'reconfigure' phase, more people have to be involved in the decision making process.
    - An Indian conglomerate looking at cost reduction opened the decision-making process to a larger number of employees and was surprised at the level of buy-in it produced.

### Leadership

Leadership will be both tested and built over the next two to three years. PwC India's '*Reimagining Leadership 2030*' explored leadership trends over a 15-year horizon. These emerging trends may get accelerated due to the COVID-19 crisis. Three types of leaders and leadership attributes described in the report are needed:

- **Disruptive envisioning**: the status quo is being challenged and leaders will be required to stimulate disruption and connect the dots to create multiple possible future scenarios. This is linked to the fact that the leader will have to consider a number of pathways for renewal and growth.
- **Multidimensional sensemaking**: leaders will have to tackle multiple dimensions, making sense of everything that is happening around their business and ecosystem in the revival and growth phase.
- **Institution-building mindset**: perhaps the most important attribute of leaders will be their ability to rise above their personal aspirations and place the organisation's purpose and well-being at the top of the priority list.

### Reinventing the future

Pursuing committed execution, increasing volume and productivity, taking a whole-of-society approach, and using technology will be accelerated in the medium term. A key theme that was echoed by leaders was summed up by Tom Seymour, Territory Senior Partner of PwC Australia:

*"Humankind will see one of the biggest entrepreneurial surges in history. Innovation will be required to come out of this crisis, and thereafter it will be driven by changed approaches and attitudes learnt during revival."*

Even if recovery is delayed as the pandemic takes more time to get under control, or if there are further geopolitical tensions, we are confident that revival and subsequent growth will take place in the medium term. Keeping our sights high, collaborating within and across organisations using digital technology and a changed attitude, we have an opportunity to not only come out of this crisis but realise our hidden, full potential.

This report, compiled on 15 August 2020 and launched in our Independence Day week, is a small contribution to that mission.

# End Notes

## Chapter 1


1. World Bank data
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# Appendix I
## List of Interviews

### Contributing Leaders

**Venu Srinivasan**, Chairman, TVS Group
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**Suresh Narayanan**, Chairman and Managing Director, Nestle India
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# Appendix III
# Research Methodology

## The making of this report

This report aimed at exploring India's economy as a whole: outlining demand and supply and understanding frictions by speaking to a cross-section of leaders, thinkers and doers, doing a country-wide analysis at a time when a national crisis was unfolding. This was both challenging and energising. As we conducted interviews, researched and wrote, we watched India enter its first recession since 1979. The project soon turned into a mission that encompassed both macro driver and analysis of sectors through virtual workshops. We involved ten different teams and spent ten elapsed days in front of our computer screens till our eyes hurt.

Slowly the core team, shed its own fear of the unknown as the country moved from lockdown into opening up gradually. Framing the problem from the 'now' to the 'medium term' was critical. That framing made us go past the short term 'fog of war' that the country felt it was in. Silver linings of revival and growth began to emerge, and the report started to explore how India could filter out opportunities from the crisis. As we interviewed experts across all areas of society, whether leading CEOs and industrialists or public-sector leaders, retired supreme court judges or members of civil society, the 'house of revival and growth' emerged as a concept. This image guided our thinking of a revival journey over a three-year period. Taking whole-of-society and whole-of-organisation approaches with enabling technology platforms was the starting thesis, and this thesis was strengthened as it was soft-tested by India in the initial weeks and months. We arrived at the understanding that in this situation all segments had to work together, because demand, supply, resources and institutions were interlinked, and a holistic approach was the need of the hour. As they say, the whole is greater than the sum of its parts.

'Full potential ambition' evolved both through our research and through a shift in the core team's mindset. We realised that while we were confined mostly in our homes, our efficiency and effectiveness had been enhanced by other means of collaboration. Personally, many of us were transforming — some took to regular exercise they had not gotten even when the gym was open; others were inspired to take on the 5:00am workday as they changed their lifestyle. Technology enabled the team to speak to leaders from across the country and around the world from their home offices and dining room tables. The possibilities our external research uncovered also played out in our personal lives. Our individual full potential and that of the team surfaced. Full potential ambition became a state of mind that triggered a realisation that at this critical juncture, we all need to stretch to bring out the best in ourselves.

As we spoke to the nation through our computers and did virtual interviews, the voice of the nation came to the fore, resonating with our survey findings. From boardrooms (or online meeting rooms) to 1,500 citizens across the metro areas (such as Delhi, Kolkata, Mumbai), urban areas (such as Cochin and Nagpur), semi-urban areas (such as Kota and Erode), and rural areas (such as Sambalpur and Kamrup), comprising women entrepreneurs, private businessmen, representatives of agriculture businesses, and youth, we heard a sentiment that India can emerge from this crisis better and stronger. This report as a summary of that sentiment laying out a road map is only a starting point for further conversations.

Those full potential conversations are what this report and we as a firm seek to catalyse and support.

## Steering committee

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Sanjay Tolia, Markets Leader, PwC India
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# About PwC

At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 157 countries with over 276,000 people who are committed to delivering quality in advisory, assurance and tax services. PwC refers to the PwC network and/or one or more of its member firms, each of which is a separate legal entity. Please see www.pwc.com/structure for further details. For more information about PwC India visit us at www.pwc.in

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