Economic survey

Economic Survey

The Economic Survey was prepared by the Ec**onomic Division of the Department of Economic Affairs in the Finance Ministry** under the overall guidance of the **Cheif Economic Adviser**.

It is nowhere mentioned in the constitution.

However, it is now part of the Government Practice to present Economic Survey every year before the budget.

Significance of economic survey:

> Bringing citizens close to economic policy making by providing data and analysis in a comprehensible manner is one of the services and the challenges of the Economic Survey. Citizen awareness and participation are key to democratize policies and economic decision making.

Highlights

GDP:

Gross Domestic Product (GDP): The Central Statistics Office (CSO) has estimated the GDP growth to be 6.5% in 2017-18 as compared to 7% in 2016-17.

CSO is under Ministry of Statistics and programme implementation

GVA

Gross Value Added (GVA): The GVA (at constant prices) is estimated at 6.1% in 2017-18 as compared to 6.6% in 2016-17.

The agriculture and industry sectors are expected to grow at 2.1% and 4.4% respectively, while the service sector is estimated to grow at 8.3%.

Inflation

Inflation: The Consumer Price Index (CPI) based inflation was 3.3% in 2017-18 (April- December). The average food inflation was 1.2% for the same period.

CAD and FD

Current Account Deficit (CAD):

India's CAD increased from 0.4% of GDP in 2016-17 to 1.8% of GDP in the first half of 2017-18. This has been attributed to an increase in merchandise imports relative to exports.

Fiscal Deficit FD:

the fiscal deficit stood at 112% of the budget estimate.

The fiscal deficit is 3.2% (budget estimate) of GDP in 2017-18 as compared to 3.5% of GDP in 2016-17.

GST

The GST Council offers a model "technology" of cooperative federalism to apply to many other policy reforms

Increase in taxpayers: Under GST,

1. the number of unique indirect taxpayers increased by over 50% (3.4 million).
2. Voluntary compliance also increased under GST, with 1.7 million voluntary registrants.
3. 13% of the estimated 71 million non-agriculture enterprises were registered under the GST network.

GST and states:

states with high standard of living is their strong exports, both internationally as well as to other Indian states

1. The distribution of GST base among states is linked to their GSDP,
2. with Maharashtra (16%), Tamil Nadu (10%), Karnataka (9%) having the highest share.
3. GST data shows that a state's GSDP (gross state domestic product)per capita has a high correlation with its export share in the GSDP.
4. Five states account for 70% of India's exports - Maharashtra, Gujarat, Karnataka, Tamil Nadu, and Telangana

Employment:

Assessments of the employment challenge are hampered by a lack of timely data**.**

The NSSO's 73rd Survey Round is used to identify firms that are neither part of the tax or social security net

NSSO under Ministry of Statistics and Programme

formal payrolls may be considerably greater than currently believed.

54 percent of the non-agricultural workforce is in the formal sector

Informal economy

1. A firm is considered to be in the formal sector if:
    a. it provides social security to its employees, or
    b. it is registered under the GST
2. 0.6% of firms meet both of the criteria, known as the hard core formal sector.
3. **87% of firms are purely informal**
4. 12% of firms are registered under GST but do not provide social security.

5. Less than 0.1% provide social security but are not registered under GST (usually GST exempted firms).

the size of the formal part of the economy is bigger than earlier believed.

Fiscal Federalism

Fiscal Federalism :In comparison to developed countries, India collects a lower share of direct taxes in total taxes.

For example, in India, states generate 6% of their revenue from direct taxes, as compared to 19% in Brazil.

Rural local governments, in India, raise 6% of their total revenue from direct taxes as compared to 40% in Brazil.

Urban local governments raise 44% of their revenue from their own sources

Reason for less Rural tax income for local bodies and **less development activity**:

local governments collect only a small fraction of their potential tax revenue.

For example, rural local bodies collect around **one third of the potential property tax**.

Therefore, local governments rely heavily on devolved funds from central and state governments.

These devolved funds are largely tied in nature, to either specific sectors or schemes. This constrains the ability of local governments to spend on local public good as per their own priorities.

Ease of Doing Business

India jumped 30 places and was ranked overall 100 in the **World Bank's Ease of Doing Business Report 2018.**

However, on contract enforcement it was ranked at 164. Why?

Although the government has taken steps to improve contract enforcement,

economic activity is getting affected by high pendency and delays across the legal system. The backlog in High Courts by the end of 2017 was around 3.5 million cases.

Delays of economic cases (company cases, arbitration cases and taxation cases) in courts are leading to stalled projects, legal costs, contested tax revenues, and consequently reduced investment.

Delays in in power, roads, and railways projects led to an increase in almost 60% of the project costs

How to improve?

The government and the judiciary must coordinate to introduce reforms to facilitate ease of doing business.

Judicial capacity should be strengthened in the lower courts to reduce the burden on higher courts.

The tax department must limit its appeals, given that their success rate is less than 30% at all three levels of judiciary (Appellate Tribunals, High Courts, and Supreme Courts).

The government must increase its expenditure on the judiciary, improve the courts case management and court automation system, and create subject specific benches.

Investment and Savings

India saw high levels of investment and saving rates in the mid 2000's followed by a pronounced gradual decline, returning back to normal levels.

The ratio of gross fixed capital formation to GDP was 26.5% in 2003, 35.6% in 2007 and 26.4% in 2017.

The ratio of domestic saving to GDP, was 29.2% in 2003, 38.3% in 2007, and 29% in 2016.

A fall in both private investment, and household, and government saving have contributed to such decline between 2007 and 2017.

growth in savings did not bring economic growth but the growth in investments did

How to Fix?

There needs to be a focus on revival of investment.

However, the decline in investment will be difficult to reverse because:

(i) it stems from the balance sheet stress of companies, and
(ii) its large magnitude.

Easing the cost of doing business, creating a transparent, stable tax and regulatory environment, and supporting small and medium industries will help revive private investment

Climate Change

The data on rainfall, temperature, and crop production shows **a long-term trend of rising** Temperature, declining average precipitation, and an increase in extreme precipitation events.

The average decline in rainfall between 1970's and 2000's is 26 mm in Kharif season and 33 mm in Rabi season.

Effect:

This has significant implications on agriculture, especially in unirrigated areas.

Such changes in temperature and precipitation will result in estimated overall farm income losses of 15% to 18%, and further, 20% to 25% for unirrigated areas

Solution:

Given the rising water scarcity, and depleting water resources, there is a need to increase irrigation.

Technologies of drip irrigation, sprinklers, and water management must be employed to meet this challenge.

Agriculture and Food Management

Growth rates of agriculture and allied sectors have been fluctuating: 1.5% in 2012-13, 5.6% in 2013-14, -0.2% in 2014-15, 0.7% in 2015-16, and 4.9% in 2016-17

The uncertainty in growth in agriculture is because 50% of agriculture is dependent on rainfall.

On account of good monsoon rainfall in 2016-17, there was a rise in food grains and other crops production

The agriculture sector has been witnessing a gradual structural change.

The share of livestock in the GVA in agriculture rose from 22% in 2011-12 to 26% in 2015-16. The share of crops in the GVA fell from 65% in 2011-12 to 60% in 2015-16.

The gross capital formation in agriculture declined from 8.3% in 2014-15 to 7.8% in 2015-16.

Industrial Growth

Industrial growth: The overall industrial sector growth was 5.8% in the second quarter of 2017-18 as compared to 1.6% in the first quarter.

As per the estimate of national income 2017-18,

industrial sector grew at 4.4% and the manufacturing sector grew at 4.6%.

The eight core industries (coal, crude oil, natural gas, petroleum refinery products, fertilizers, steel, cement, and electricity) grew by 4.8% in 2016-17 as compared to 3% in 2015-16.

Infrastructure

Infrastructure: India requires around USD 4.5 trillion worth of investments till 2040 to develop infrastructure.

As per the current trend, India can raise around USD 3.9 trillion.

The under investment in the infrastructure sector has been due to:

1. collapse of Public Private Partnerships

2. stressed balance sheets of private companies, and
3. delays in acquisition of land and forest clearances.

Services

The services sector contributed 55.2% to India's GVA in 2017-18.

As per the CSO the growth of the services sector is expected to be 8.3% in 2017-18 as compared to 7.7% in 2016-17.

In 15 states, services contribute to more than half of the gross state value added (GSVA).

With a share of 3.4%, India is the eighth largest exporter of commercial services

The share of real estate sector (including ownership of dwellings) accounted for 7.7% of India's overall GVA in 2015-16.

Real estate and construction together are the second largest providers of employment

Complete Survey:

The inevitable never happens. It's the unexpected always

John Maynard Keynes

Chapter 1-State of economy

Decisive Steps taken:

1. Introduction of GST
2. Resolving issue of Twin balance sheets(TBS)
    i. by Bank recapitalization of PSB's
    ii. by sending stressed companies to IBC

Predictions:

Prudent policy and vigilance will be necessary in the coming year, especially

if high international oil prices persist or elevated stock prices correct sharply, provoking a "sudden stall" in capital flows.

Agenda Next Year

1. Stabilizing GST.
2. Complete the TBS actions
    i. Improvements on TBS
    ii. Recapitalization of PSB
    iii. PSB reforms
        1. Shrink unviable one's

2. Greater private sector participation

3. Privatizing Air India

Mid term Targets(3 year)

1. Employment: finding good jobs for the young and burgeoning workforce, especially for women.
2. Education: creating an educated and healthy labor force.
3. Agriculture: raising farm productivity while strengthening agricultural resilience.

Engine of rapid Growth

Private investment,
Exports.

Short term Overview

GST and Impacts:

Impacted informal sectors
Great example of cooperative federalism. Further GST council model can be used for various issues and schemes like water disputes, integration of agriculture market and electricity market, implementing DBT schemes etc.

Demonetization and GST helped in Increase in Tax filers. But revenue increase not visible as maximum added tax filers reported income close to tax threshold. It will increase with growth.

TBS

4 R's
Recognize, Resolve, Recapitalize and Reforms

Resolve

provided by IBC→Now exiting market is possible
Similar Financial resolution an deposit resolution(FRDI) bill will do to banks i.e making exit possible.
Help in reducing debts and cleaning up of balance sheets in corporate sector

Recapitalize

Govt announced large recapitalization package of 1.2% of GDP

Benefits:

1. It will help firms to resume spending
2. Help Banks to lend to critical sectors of Manufacturing and Infrastructure

FDI liberalized

Increase in FDI 20%

Fiscal Deficit and CAD

Inflation, FD, CAD remained high

Reason Rising oil prices→India's historic macroeconomic vulnerability

The current account deficit can be split into a manufacturing trade deficit, an oil and gold deficit, a services deficit, and a remittances deficit

How to overcome FD:

One option is increasing Tax to GDP ratio which have been remained same from 1980's to least recent times even when growth rate is around 6.5%.

Gst can help in increasing it.

Increase in tax payers post demonetization.

Another is halting conversion of contingent liabilities into actual ones (typically through the assumption of state discom debts and public sector bank recapitalization)

How to overcome CAD:

Rise in exports

Price competitiveness

Reviving manufacturing and making it competitive to international standards

India's Sovereign rating upgrade

Moody's rating

Exports

Manufacturing exports declined in recent years

Export to GDP ratio is declining and manufacturing trade balance is -ve.

Competitive exchange rates important for export led growth

IT exports under threat from rapid technological changes(crony socialism to stigmatized capitalism)

Role of education and women

In the headwinds of technological revolution education reforms should be the top priority.

Healthy and educated individuals, with the ability to adapt and learn on an ongoing basis, need to be the core of the future labor force.

Those individuals must include high numbers of women; for this to happen, they will need to have a status and role comparable to men.

Agriculture

The government's laudable objective of addressing agricultural stress and doubling farmers' incomes consequently requires radical follow-up action, including decisive efforts to bring science and technology to farmers, replacing

untargeted subsidies (power and fertiliser) by direct income support, and dramatically extending irrigation but via efficient drip and sprinkler technologies

Agriculture Predictions:

The acreage for kharif and rabi for 2017-18 is estimated to have declined by 6.1 percent and 0.5 percent, respectively.

Pulses and oilseeds have seen an increase in sowing, but this has translated into unusually low farmgate prices (below their minimum support price, MSP), again affecting farm revenues.

The so-called TOP perishables (tomatoes, onions, and potatoes) have meanwhile fluctuated between high and low prices, engendering income uncertainty for farmers

Global outlook

The latest World Economic Outlook (WEO) of the IMF shows global GDP growth accelerated to around 3.6 percent in 2017 from 3.2 percent in 2016, and the forecast for 2018 has been upgraded by 0.2 percentage points to 3.9 percent.

Sign of recovery from 2007 crisis

One reason why the recovery has spread around the globe is that world trade in goods and services has finally emerged from its torpor, registering 4.7 percent real volume growth in 2017 compared with 2.5 percent in 2016.

Increase in demand of commodities

Inflation below 2% in developed nations

Rising high bond prices and stock market valuation

Risks:

there are the usual geo-political and geo-economic risks:

war in the Korean peninsula;

political upheaval in the Middle East;

aggressive output cuts by Saudi Arabia (and Russia) in advance of the planned listing of the Saudi Arabian oil company, Aramco, which could force oil prices even higher;

a final reckoning from China's unprecedented credit surge in the form of capital controls, slowdown in growth, and a sharply depreciating currency with consequences for the global economy.

Financial risks:

Rising equity and price valuations reverting to their mean values

Faster they rise specially in later half of economic cycle more will be the fall

Interest rate increase by central bank can have adverse effect on bond pricing.

Decoupling of Indian Economy

Until early 2016, India's growth had been accelerating when growth in other countries was decelerating.

But then the converse happened. The world economy embarked on a synchronous recovery, but India's GDP growth—and indeed a number of other indicators such as industrial production, credit, and investment—decelerated.

Any explanation would need to explain this change in fortunes, this "decoupling" of Indian growth from global growth, identifying the factors that caused India to forge its unique path. Five explanations suggest themselves.

Increase in real interest rates by 2.5% while around the world they were decreasing.

This tightening of monetary conditions contributed to the divergence in economic activity in two ways.

First, it depressed consumption and investment compared to that in other countries.

Second, it attracted capital inflows especially into debt instruments, which caused the rupee to strengthen, dampening both net services exports and the manufacturing trade balance. Rupee appreciated around 9% in real terms

Demonetization

GST introduction

Both above factors led to reduced demand and hampered production, especially in the informal sector, which transacts mainly in cash

TBS challenge

its effects have cumulated as the non-performing assets have increased

profits of the PSBs have plunged into negative territory as provisioning against the bad loans increased substantially

Oil Prices

In the last three fiscal years, India experienced a positive terms of trade shock.

But in the first three quarters of 2017-18, oil prices have been about 16 percent greater in dollar terms than in the previous year

It is estimated that a $10 increase in crude oil reduces growth by 0.2-0.3 %, Increase WPI by 1.7% and CAD by $9 billion

****Note when real interest rates increase Capital inflows(FDI) can decelerate the growth if they are mostly in debt instruments. and it also causes rupee to strengthen and loss of exports**

Growth is recovering signals from increase exports less imports, more demand, stabilization of cash to GDP ratio post demonetization .

Macroeconomic indicators

Head line Inflation was about 5.2 %

rising global oil prices (not all of which has been passed on to consumers), unseasonal increases in the prices of fruits and vegetables, and the 7th Pay Commission housing rent allowances, which mechanically increase inflation

Core Inflation about 4.3%

Various schemes related data

Jan dhan: No. of jandhan accounts increased and about 5% are now zero balance.so financial inclusion schemes is making positive steps.75% accounts Aadhaar linked helping in DBT

Ujjawala: increased percentage of gas connection specially to SC,ST's

PMAY: about 16 lac homes constructed

Reinforcement of textile sector in exports by incentives like rebates on state levies(ROSL) helped in drastic increase in export of ready made garments

Govt should look to liberalize state levies and watch for **tax inversion(where tax further back the chain are greater than those down the chain)** in GST

Chap 2 GST

As an information repository, the Goods and Services Tax (GST) embodies(gives a visible form)and heralds(gives a sign) a radical alteration and enlargement in the understanding of the Indian economy.

The GST has been widely heralded(acclaimed) for many things, especially its potential to create one Indian market, expand the tax base, and foster cooperative federalism.

Yet almost unnoticed is its one enormous benefit: it will create a vast repository of information, which will enlarge and surely alter our understanding of India's economy.

Findings

There has been a **fifty percent increase in the number of indirect taxpayers**; and

a large increase in voluntary registrations, especially by small enterprises that buy from large enterprises and want to avail themselves of input tax credits.

The distribution of the GST base among the states is closely linked to the size of their economies i.e GSDP, allaying(putting to rest) fears of major producing states that the shift to the new system would undermine their tax collections.

Data on the international exports of states (the first in India's history) suggests a strong **correlation between export performance and states' standard of living**.

India's internal trade is about **60 percent of GDP**, even greater than estimated in last year's Survey and comparing very favorably with other large countries.

Five largest exporting states

Maharashtra, Gujarat, Haryana, Tamil Nadu and Karnataka

Five largest importing states:

Maharashtra, Tamil Nadu, Uttar Pradesh, Karnataka and Gujarat

largest internal trade surpluses are

Gujarat, Haryana, Maharashtra, Odisha and Tamil Nadu.

Formality defined in terms of social security provision yields **an estimate of formal sector payroll of about 31 percent of the non-agricultural work force**

formality defined in terms of being part of the **GST net suggests a formal sector payroll share of 53 percent**.

size of the formal sector (defined here as being either in the social security or GST net) is **13 percent of total firms in the private non-agriculture sector** but 93 percent of their total turnover.

So, as estimated by the RNR committee, the single tax rate that would preserve revenue neutrality is between 15 to 16 percent.

Total GST Tax base

The top states are Maharashtra (16 percent), Tamil Nadu (10 percent), Karnataka (9 percent), Uttar Pradesh(7 percent), and Gujarat (6 percent).

Exports

Five states—Maharashtra, Gujarat, Karnataka, Tamil Nadu, and Telangana—in that order account for 70% of India's exports.

the top 1 percent of firms accounted for 72, 68, 67, and 55 percent of exports in Brazil, Germany, Mexico, and USA respectively but only 38 percent in the case of India

Informality

Formality:

The EPFO contribution is mandatory for industries employing greater than 20 workers, and whose monthly wage/salary is below Rs. 15,000

A second definition of formality is when firms are part of the tax net.

GST threshold of 20 lakh

About 0.6 percent of firms, accounting for 38 percent of total turnover, 87 percent of exports, and 63 percent of GST liability are what might be called in the "hard core" formal sector in the sense of being both in the tax and social security net.

At the other end, **87 percent of firms, representing 21 percent of total turnover, are purely informal,** outside both the tax and social security nets.

nearly 53 percent of the non-agricultural workforce (240 million) is in the formal sector

Chapter 3 Investment and Savings

One finding is that investment slowdowns have an impact on growth but not necessarily saving

Gross fixed capital formation

Gross domestic savings

Should we target investment over savings?

countries experiencing positive saving transitions do not necessarily experience sustained growth increases.

But converse is true, countries that experience growth transitions eventually see sustained higher rates of saving

Based on these findings, Rodrik (2000) proposes that policies should focus on encouraging investment, rather than saving, to boost growth.

Relation between per capita GDP growth and investment the relationship is significantly positive for investment episodes, but insignificant for saving

There are a few episodes across economies in which both investment and saving have slowed simultaneously

Same is true for private investment.

Indian type slowdown?

> India's investment slowdown is unusual in that it is so far relatively moderate in magnitude, long in duration, and started from a relatively high peak rate of 36 percent of GDP.
>
> it has a specific nature, in that it is a balance sheet-related slowdown. In other words, many companies have had to curtail their investments because their finances are stressed, as the investments they undertook during the boom have not generated enough revenues to allow them to service the debts that they have incurred
>
> Investment declines flowing from balance sheet problems are much more difficult to reverse. In these cases, investment remains highly depressed, even 17 years after the peak, whereas in case of non-balance-sheet slowdowns the shortfall is smaller and tends to reverse.
>
> India's investment decline so far (8.5 percentage points) has been unusually large when compared to other balance sheet cases

Conclusions:

> investment slowdowns are more detrimental to growth than saving slowdowns,
>
> > So, policy priorities over the short-run must focus on reviving investment. Mobilizing saving, for example via attempts to unearth black money and encouraging the conversion of gold into financial saving or even courting foreign saving are, to paraphrase John Maynard Keynes, important but perhaps not as urgent as reviving investment

the share of financial saving is already rising in aggregate household saving—with a clear shift visible towards market instruments—a phenomenon that has been helped by demonetization

India's investment slowdown is not yet over although it has unfolded much more gradually than in other countries

how will the investment slowdown reverse, so that India can regain 8-10 percent growth?

There is both a bleak and a hopeful pointer from similar episodes in other countries.

India's investment decline seems particularly difficult to reverse, partly because it stems from balance sheet stress and partly because it has been usually large.

Cross -country evidence indicates a notable absence of automatic bounce-backs from investment slowdowns.

The deeper the slowdown, the slower and shallower the recovery.

At the same time, it remains true that some countries in similar circumstances have had fairly strong recoveries, **suggesting that policy action can decisively improve the outlook.**

Steps:

first with the step-up in public investment since 2015-16; and now, given the constraints on public investment with policies to decisively resolve the TBS challenge.
These steps will have to be followed up, along with complementary measures: easing the costs of doing business further, and creating a clear, transparent, and stable tax and regulatory environment

In addition, creating a conducive environment for small and medium industries to prosper and invest will help revive private investment. The focus of investment-incentivizing policies has to be on the big and small alike.

Chapter 4 Fiscal federalism

Direct Tax:

India is not an outlier: its direct tax share is similar to other countries at a comparable stage of development

India stands out as a country where the second tier (states) generate a very low share of its revenue from direct taxes: about 6 percent in India compared to 19 percent in Brazil in 2016 and a hefty 44 percent in Germany.

India's rural local governments (RLGs) stand out on both counts. RLGs' reliance on own resources is just 6 percent compared to 40 percent for third-tier governments in Brazil and Germany

panchayats raise about 4 percent of their overall resource envelope in the form of direct taxes, compared with about 19 and 26 percent in Brazil and Germany respectively

India's urban local governments (ULGs), meanwhile, are much closer to international norms. Their own revenues as a share of total revenues are actually higher than Brazil and Germany,

This is evidence that ULGs have emerged more fiscally empowered than RLGs so far in India

Rural Fiscal federalism

The famous 73rd amendment to the Constitution (1992) recognized panchayats as institutions of self-government. The simultaneous 74th amendment bestowed the same status on urban local governments.

RLGs or panchayats were mandated to have three tiers (at the district, intermediate and village levels) in states with population of over 20 lakh

the Constitution listed 29 matters which could be the focus of their governance, such as agriculture and land reforms, minor irrigation, small scale industries, rural communication, drinking water, poverty alleviation programmes.

States were also supposed to constitute a quinquennial State Finance Commission (SFC) to determine the share of their financial resources going to the local tiers, analogous to the Finance Commissions at the union level

ULGs seem to be doing much better in terms of own revenue generation. They generate about 44 per cent of their total revenue from own sources .

RLGs, in contrast, rely overwhelmingly (about 95 percent) on devolution

25 years after 72nd amendment we still talk about devolution of powers to panchayat not about pressing questions relating the performance of RLGs in fiscal accountability and delivery of services.

In many states, RLGs and ULGs have not been devolved enough taxation powers

A common answer is that higher levels especially the states have not devolved enough taxation powers to the Panchayats. For example, the permissible taxes for panchayats include property and entertainment taxes but not land taxes or tolls on roads (except local panchayat roads).

Analysis of 20 years of Gram panchayats:

In comparison with their counterparts in some other federal countries,

Under Collection:

they rely much more on devolved resources and much less on their own tax resources, and

they collect less direct taxes. And the reason does not seem to be so much that they don't have enough taxation power.

Rather, the bigger problem is that they are not fully utilizing the taxation powers they already possess.

The status quo can be an equilibrium desired by all actors with higher tiers (both Centre and states) using their devolution powers to control and influence lower levels; and the latter, unable and unwilling to tax their proximate citizens, need outside resources even if they are not always untied. But this is a low-equilibrium, perhaps even a trap.

For unless the underlying problems are identified and solved, local governments could remain stuck in a low equilibrium trap. That is, the fiscal model of the states and third tier institutions could forever be based on outside resources which—like foreign aid and natural resources or other forms of 'redistributive resource transfers'

how to break this equilibrium could well be one of the more pressing issues confronting fiscal federalism going forward.

Chapter 5 Late convergence stall

The first order fact about the developing world today is that this is an era of unprecedented prosperity. And that is true about India too which has been one of the most dynamic economic performers in the world. A major driver of these good times, is "**economic convergence**," whereby poorer countries have grown faster than richer

countries and closed the gap in standards of living. The convergence process has been broadening and accelerating for the last 20-30 years

there has been “convergence with a vengeance”

> Since the mid-1980s, the process of catch-up has broadened, as the number of poor countries growing faster than advanced economies has substantially increased. Furthermore, the rate of catch-up has also accelerated
>
> the convergence process actually accelerating after 2008.
>
> The poorest have been growing faster than lower middle income countries, who have been growing faster than upper middle income countries who in turn have been growing faster than the richest.
>
> No middle income trap

The years from 1980 to 2017 are divided into three periods:

> 1980 to 1997, the era of divergence in which low-income countries fell further behind;
>
> 1998 to 2007, an early period of convergence running from the East Asian financial crisis until the Global Financial Crisis; and
>
> 2008 to 2017, the most recent period of “late convergence.”

could gathering global trends adversely affect countries such as India that joined the convergence club later in the process? In other words, could there be a “late converger stall” in the process of economic development?

> The GFC represented a watershed event, marked by a sharp decline in rates of growth across the world. For example, world growth declined from 4.3 percent in the ten-year period prior to the GFC to 2.9 percent in the decade after the GFC
>
> The possibility of such a “Late Converger Stall” arises because of four possible headwinds in the post-Global Financial Crisis era :
>
> 1. the backlash against globalization which reduces exporting opportunities,
>   a. *Hyperglobalization repudiation*
>
>   Developing countries that came late to convergence now face a very different global trading environment from their predecessors.

Early converger's benefited from the process of rapid globalization or hyper-globalization, reflected in dramatic increases in the world trade-GDP ratio. As a result, Japan, South Korea and China were all able to post average export growth rates of over 15 percent for the thirty years of their convergence periods

the ability to export at double digit rates of growth for three to four decades consistently, may no longer be available.

2. the difficulties of transferring resources from low productivity to higher productivity sectors (structural transformation),
3. the challenge of upgrading human capital to the demands of a technology-intensive workplace, and
4. coping with climate change-induced agricultural stress.

Chapter 6 Agriculture and climate change

Rising temperatures and lowering precipitation

a long-term trend of rising temperatures, declining average precipitation, and increase in extreme precipitation events

A key finding—and

that the impact of temperature and rainfall is felt only in the extreme; that is, when temperatures are much higher, rainfall significantly lower, and the number of "dry days" greater, than normal.

that these impacts are significantly more adverse in unirrigated areas (and hence rainfed crops) compared to irrigated areas (and hence cereals).

Verdict:

climate change could reduce annual agricultural incomes in the range of 15 percent to 18 percent on average, and up to 20 percent to 25 percent for unirrigated areas

Solutions:

drastically extending irrigation via efficient drip and sprinkler technologies (realizing "more crop for every drop"), and

replacing untargeted subsidies in power and fertilizer by direct income support. More broadly,

the cereal-centricity of policy needs to be reviewed.

Explanations:

A bounty of Indian Agriculture increasingly runs up against the contemporary realities of Indian agriculture, and the harsher prospects of its vulnerability to long-term climate change.

Keeping in mind Malthusian principle: that population multiplies geometrically and food arithmetically; therefore, whenever the food supply increases, population will rapidly grow to eliminate the abundance.

Short term trend:

farm revenues declining for a number of crops despite increasing production and market prices falling below the Minimum Support Price (MSP).

Medium and long term:

the ghost of Malthus looms over Indian agriculture.

Productivity will have to be increased, and price and income volatility reduced, against the backdrop of increasing resource constraints, Shortages of water and land, deterioration in soil quality, and of course climate change-induced temperature increases and rainfall variability

Why Agri Matter?

Romanticizing with Agri Historic factors:

The first salvo of satyagraha was fired by Mahatma Gandhi on behalf of farmers, the indigo farmers exploited by colonial rule. Bollywood (and Kollywood and Tollywood) has also played a key role in creating and reinforcing the mythology of the Indian farmer

Economic terms:

Agriculture also matters for economic reasons because it still accounts for a substantial part of GDP (16 percent) and employment(49 percent)

Why we need to take people away from agri into services and manufacturing?

It cannot be the dominant, permanent source of livelihood is its productivity level, and hence the living standards it sustains

Dr. Ambedkars warning:

Dr. Ambedkar warned about the dangers of romanticizing rural India.

He famously derided the village as “a sink of localism, a den of ignorance, narrow mindedness and communalism,”

thereby expressing a deeper truth—that in the long run people need to move and be moved out of agriculture for non-economic reasons.

What's the Irony?

So the irony is that the concern about farmers and agriculture today is to ensure that tomorrow there are fewer farmers and farms but more productive ones

Vulnerabilities and Growth of Indian Agriculture:

Agriculture in India even today continues to be vulnerable to the vagaries(unexpected) of weather because close to 52 percent (73.2 million hectares area of 141.4 million hectares net sown area) of it is still un-irrigated and rainfed

52 percent of net sown area is still un-irrigated and rainfed

Temporal aspects:

Two Seasons per year

Kharif and Rabi

Temperature:

Average temperature in Kharif and Rabi seasons have increased gradually from 1970.

Rainfall:

Between the 1970s and the last decade, kharif rainfall has declined on average by 26 millimeters and rabi rainfall by 33 millimeters

Average is 86mm between 1970 and 2015

Extremities:

Hot days — Number of extreme hot days increased

Cold days — Number of days with low temp decreased

Dry days, Wet days — Both have increased steadily over time

Increase in Extremities is evidence of climate change

Spatial Aspects:

Temperature increases have been particularly felt in the North-East, Kerala, Tamil Nadu, Kerala, Rajasthan and Gujarat

Parts of India, for example, Punjab, Odisha and Uttar Pradesh have been the least affected.

Rainfall decreases are particular in UP, North east and J&K

Gujrat,Andhra,Odisha increased rainfall

No relation between Rise in temp and rainfall decrease

Analysis of weather patterns on crop production,prices and yields;

two key findings.

that the impact of temperature and rainfall is highly non-linear and felt almost **only when temperature increases and rainfall shortfalls are extreme**. (1 unit rise and 1 unit fall in rainfall had an insignificant or zero effect on farm yields)

that these extreme shocks have highly divergent effects between unirrigated and irrigated areas (and consequently between crops that are dependent on rainfall), **almost twice as high in the former compared with the latter**.

Impact Based on seasons:

For Kharif→avg 4% decline in temperature shock and 12.8% decline in rainfall shock

For Rabi→avg 4.7% decline in temperature shock and 6.7% decline in rainfall shock

Unirrigated area→defined as districts where less than 50 percent of cropped area is irrigated -- bear the brunt of the vagaries of weather.

Dry days→defined as days during the monsoon with rainfall less than 0.1 millimetres.

Impact on individual crops:

crops grown in rainfed areas—**pulses** in both kharif and rabi—are vulnerable to **weather shocks**

the **cereals—both rice and wheat**—are relatively more immune.

Impact on Revenue:

Extreme temperature shocks reduce avg farmer incomes by 4.3 percent and 4.1 percent during kharif and rabi

extreme rainfall shocks reduce avg incomes by 13.7 percent and 5.5 percent

Large effect in Unirrigated areas

But reduced yields should lead to increase in revenue?

the "**supply shock**" dominates – reductions in yields lead to reduced revenues

Conclusion:

Climate change models, such as the ones developed by the Inter-governmental Panel on Climate Change (IPCC), predict that temperatures in India are likely to rise by 3-4 degree Celsius by the end of the 21st century

Due to temp. increase farm incomes will be lower by around **12 percent on an average** in the coming years

Unirrigated areas will be the most severely affected, with potential losses amounting to **18 percent of annual revenue**

Due to precipitation, farm incomes will decline by 12 percent for kharif crops, and 5.4 percent for rabi crops

Due to increase in number of dry days, a decrease in farm incomes by 1.2 percent.

Conclusion

three main channels through which climate change would impact farm incomes

1. an increase in average temperatures,
2. a decline in average rainfall and
3. an increase in the number of dry-days

key findings

1. that the impact of temperature and rainfall is felt only in the extreme
2. that these impacts are significantly more adverse in unirrigated areas (and hence rainfed crops such as pulses) compared to irrigated areas (and hence crops such as cereals).
3. farm income losses of 15 percent to 18 percent on average, rising to 20 percent-25 percent for unirrigated areas

Solutions

India needs to spread irrigation – and do so against a backdrop of rising water scarcity and depleting groundwater resources

Extreme ground water depletion in north India

India pumps more than twice as much groundwater as China or United States

Technologies of drip irrigation, sprinklers, and water management—captured in the "more crop for every drop" campaign—may well hold the key to future Indian agriculture

Agricultural research will be vital in increasing yields.

Building on the current crop insurance program (Pradhan Mantri Fasal Bima Yojana), weather-based models and technology (drones for example) need to be used to determine losses and compensate farmers within weeks(Kenya does it in few days)

Looking forward Policy wise

greater priority in resource allocation for drip irrigation,

power subsidy should be replaced with DBT

The cooperative federalism "technology" of the GST Council that brings together the Center and States could be promisingly deployed to further agricultural reforms and durably raise farmers' incomes

Challenges

it is vital to make a clear distinction between two agricultures in India.

There is an agriculture—the well-irrigated, input-addled, and price-and-procurement-supported cereals grown in Northern India—where the challenge is for policy to change the form of the very generous support from prices and subsidies to less damaging support in the form of direct benefit transfers

Then there is another agriculture (broadly, non-cereals in central, western and southern India) where the problems are very different:

inadequate irrigation, continued rain dependence,

ineffective procurement, and

insufficient investments in research and technology (non-cereals such as pulses, soyabeans, and cotton),

high market barriers and weak post-harvest infrastructure (fruits and vegetables), and

challenging non-economic policy (livestock).