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THE INDIAN ECONOMIC GROWTH STORY

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ABSTRACT

This paper mainly revolves around the monetary policy of the RBI and studies the evolution of India's growth starting from the famous 1991 reforms undertaken by the then finance minister of India **Dr. Manmohan Singh** up until mid 2013 when India recorded its slowest annual GDP growth in a decade. This apologue is described with the help of 8 aggregate demand – inflation adjustment models alongside appropriate graphical data in support of them. Finally, the paper concludes with what the RBI is trying to achieve with the monetary policy and future predictions about the macroeconomic outlook of the Indian economy.

1. INTRODUCTION

The **Economy of India** is the **ninth largest** in the world by nominal GDP and the **fourth largest** by purchasing power parity. The post-independence era Indian economy was inspired by the economy of **Soviet Union** with socialist practices, large public sectors, high import duties and lesser private participation characterizing it, leading to massive inefficiencies and widespread corruption. However, in 1991, India adopted **free market principles and liberalized** its economy to international trade. Following these strong economic reforms, the country's economic growth progressed at a rapid pace with very high rates of growth and large increases in the incomes of people.

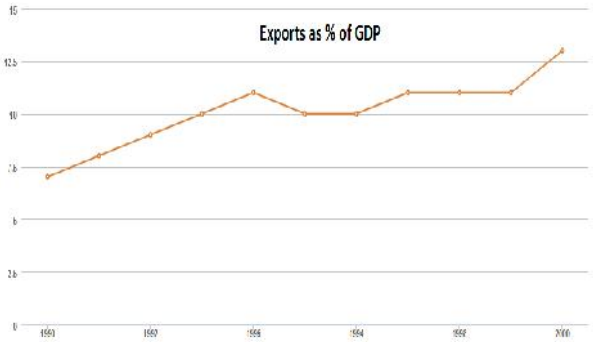
1.1 Features of Indian Economy

1. The Indian economy is a **developing economy**. It's a **mixed economy** in the sense that both private sector and public sector coexist and participate in the production process.
2. It is characterized by **high population** density and population growth.
3. About one-third of the population live below **poverty line**. 'Vicious cycle of poverty' operates in many sectors of the economy.
4. There is high level of **unemployment** and underemployment.
5. The **level of technology** used in production process is low in many sectors. Modern technology has not been adopted in all sectors of the economy.
6. There is a shortage of **physical and economic infrastructure**.

1.2 1990-2000: Deregulation & Liberalization

Graph 1: Indian Annual GDP Growth Rate (1990-1999)

Opening its doors to **globalization** in the nineties led to the miraculous growth story that India is experiencing today. During the 1990s, India was one of the fastest growing economies in the world and has since seen a long and unprecedented period of welfare enhancement. India's **exports** as a **proportion of GDP** rose from **7** per cent in 1990 to **13** per cent in 2000.



Graph 2: Exports as Percentage of GDP (1990-2000)

1.2.1 Reforms Undertaken by the Government

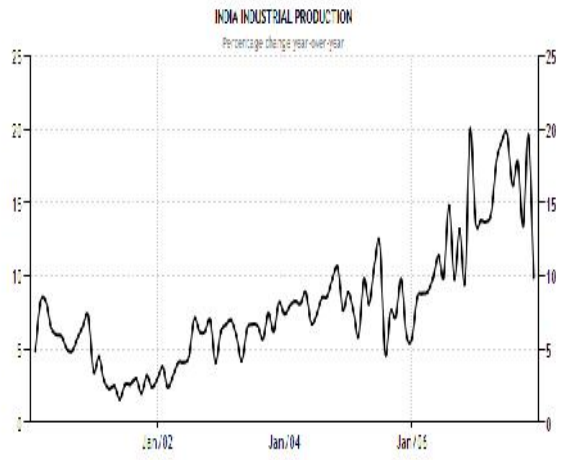
The government of India introduced a scheme called the **State's Fiscal Reforms Facility** (2000-2005). Under the Facility, the central government set up a **five-year incentive fund** to encourage states to implement **fiscal reforms** that could be monitored. These measures included:

- Measures to improve quality of life through improvement in **basic public services** such as primary health, primary education, and rural infrastructural services such as electricity, water, and roads.
- Clustering high-tech industries and services (for example, in software parks).
- Setting up **Special Economic Zones** and **Agriculture-Economic Zones** to promote exports.
- Formulating state-level industrial policies to attract investments.
- **Power-sector reforms** that restructure state electricity boards by separating generation, transmission and distribution activities.

1.3 2000-2007: Global Liquidity Flows to India

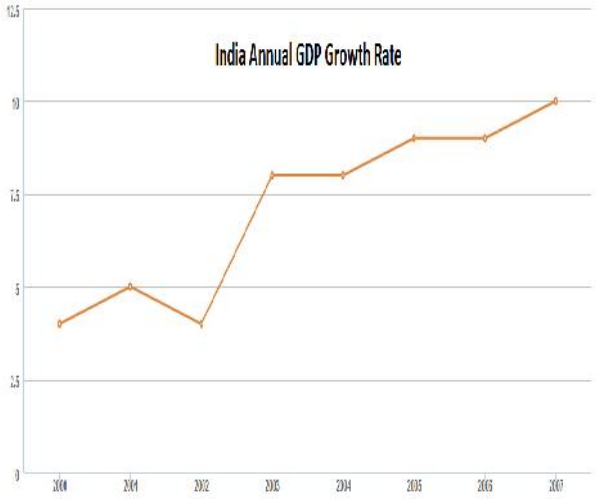
Economic reforms picked up pace in 2000-04 and **fiscal deficits** trended down after 2002. There was an upswing in Indian industrial output and investment from the second half of 2002.

Graph 3: Budget Deficits as a Percentage of GDP (2000-2007)



Graph 4: Indian Industrial Production (2000-2008)

India's **Tenth Five-Year Plan** (2002-07) targeted an annual **growth rate** of **8 per cent**. Along with this growth target, the government also laid down targets for human and social development. A reduction of the poverty rate by five percentage points by 2007, providing gainful employment to at least those who join the labor force during 2002-07, education for all children in schools by 2003 and an increase in the literacy rate to 75 percent by March 2007.

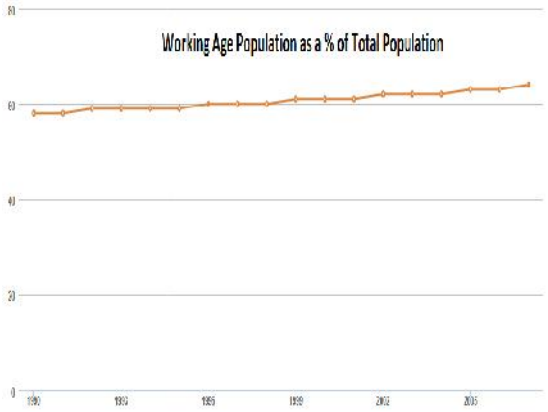


Graph 5: India Annual GDP Growth Rate (2000-2007)

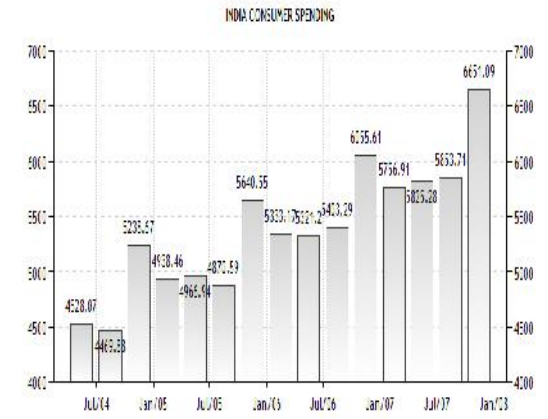
1.3.1 Reasons for the Highest Growth Rates in the Mid-2000s

The growth was led primarily due to:

- Increase in the size of the middle class working population (average working age being 25) and middle class consumer spending.

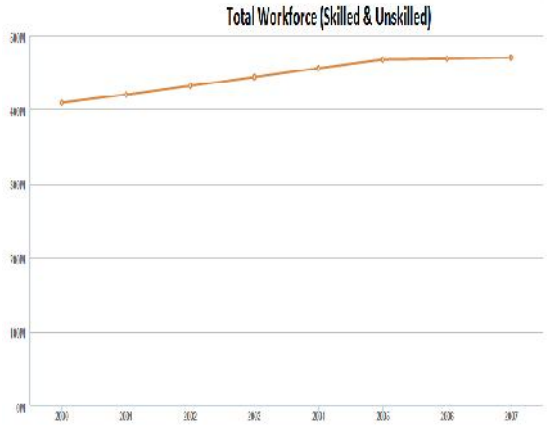


Graph 6: Working Age Population (1990-2008)



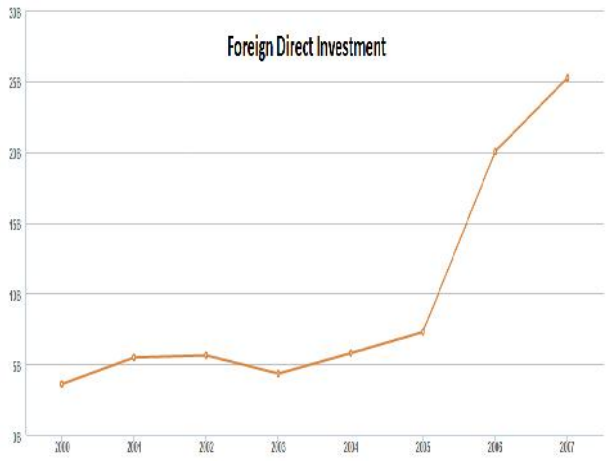
Graph 7: India Consumer Spending (2004-2008)

- A large workforce comprising skilled and non-skilled workers.



Graph 8: Total Workforce (2000-2007)

- Improvement in education standards and huge increase in foreign investments (FDIs and FIIs).

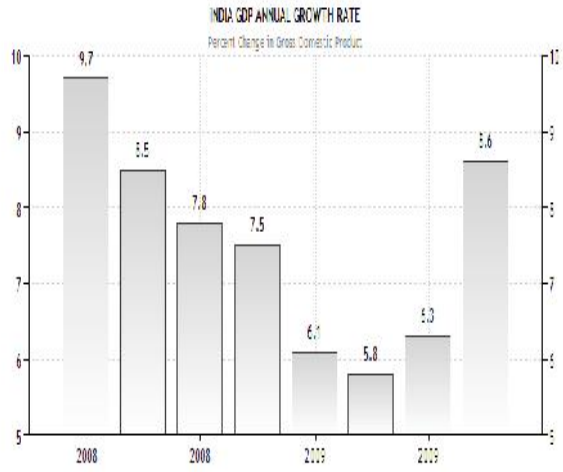


Graph 9: Foreign Direct Investment (2000-2007)

2. POST GLOBAL FINANCIAL CRISIS

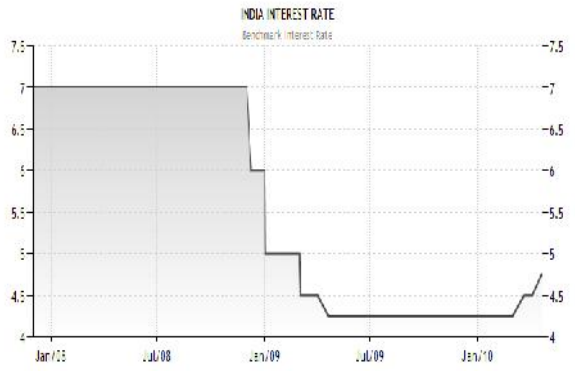
2.1 2008-2009: The Slump

On 5 September 2008, **Dr**. **Duvvuri Subbarao** was appointed the twenty-second Governor of the Reserve Bank of India. An assortment of different bubbles had popped in different parts of the world, which led to decline in economic activity all around the world. India was no exception and the economy fell off a cliff in 2008. With Indian economy nose-diving, Subbarao could not have taken office at a much worse time.



Graph 10: Indian Annual GDP growth rate (2008-2009)

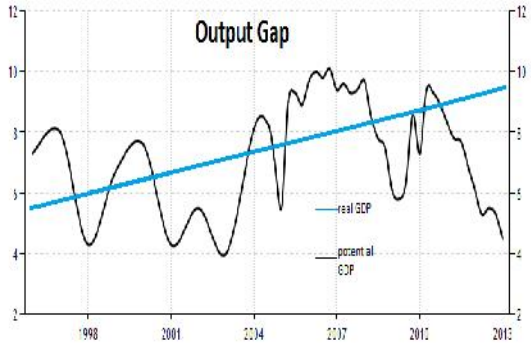
Nevertheless, he quickly assessed the economic situation and knew what needed to be done. As soon as he took office, benchmark interest rates were cut in large chunks of 100 bps taking them from 7% in late 2008 to 4.25% in April 2009.



Graph 11: Indian Interest Rate (2008-2009)

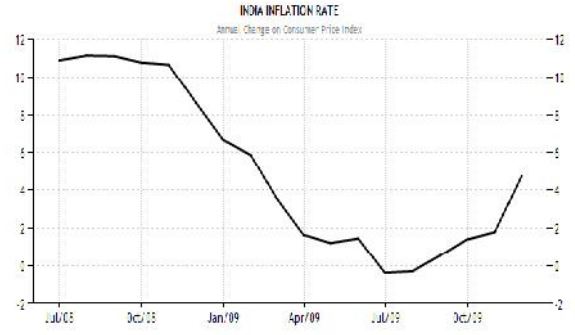
A working paper titled **Indian Economic Outlook** presented by Rajiv Kumar, Mathew Joseph, Dony Alex, Pankaj Vashisht and Debosree Banerjee in 2008 analyzed that India's potential GDP was around **8%** before the onset of the 2008 crisis.

Another paper titled **Estimation of Potential Output in India** presented by Sanjib Bordoloi, Abhiman Das and Ramesh Jangili in 2009 estimated that India's growth potential was near to **9%**.



Graph 12: Output Gap (1997-2012)

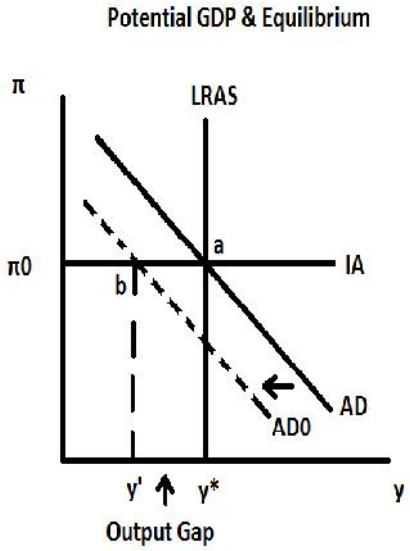
Hence, we can easily conclude that India was growing below its potential between 2008 to mid 2009. Subsequently, the fall in inflation warranted for a dovish policy response by the RBI.



Graph 13: Indian Inflation Rate (2008-2009)

2.2 2009-2010: The Recovery (Demand Shock)

Potential GDP refers to the highest level of output that can be sustained over the long term. It is assumed that the existence of a limit of output is due to natural and institutional constraints. If actual GDP rises and stays above potential GDP, then inflation tends to increase as demand exceeds supply. Likewise, if real GDP is below potential level, inflation will decelerate as suppliers lower prices to fill their excess production capacity.

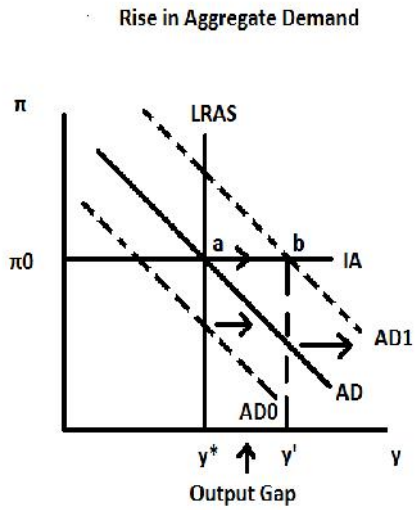


Model 1: Potential GDP & Equilibrium

As can be observed from the above figure, the economy's equilibrium is at point a in the long and short run represented by the intersection of aggregate demand (AD), short run aggregate supply (IA0) and long run aggregate supply (LRAS) curves.. Hypothetically speaking, if the aggregate demand curve was at AD then economy would be in equilibrium and real GDP y' would be at its potential level y*. However things are far from perfect in practice and aggregate demand curve is lower due to the 2008 crises and represented by AD0. Hence, only in short run equilibrium is achieved at the point b. Moreover, India's real GDP y' (6%) was below its potential GDP y* (8%), as is evident from the graphical data on the previous page, forming a contractionary output gap.

Fortunately, for India there was no structural damage to the economy through a fall in its potential GDP as was the case with many of the advanced western economies. The dovish stance of the RBI helped revive the cyclical downturn in the economy by boosting aggregate demand through an increase in planned investment and domestic consumption expenditure. Thus in 2009, real

GDP recovered back to its potential. Later in 2010, real GDP rallied above its potential leading to the formation of an expansionary output gap.

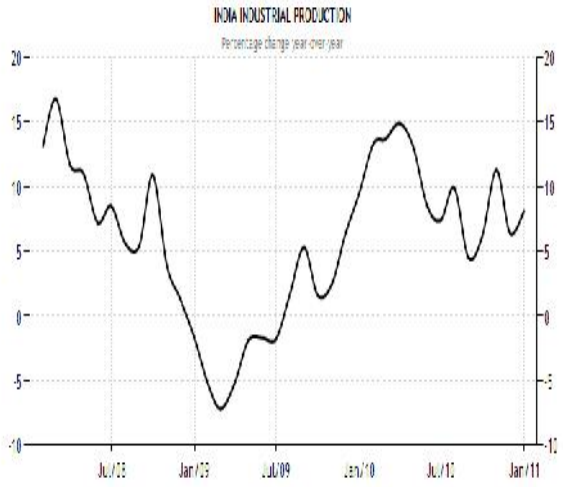


Model 2: Rise in Aggregate Demand

The expansionary output gap was formed due to a shift in aggregate demand from AD0 to AD1 via AD. Thus, real GDP y' rose above the potential GDP y* and caused disequilibrium in the long run whereas the short run equilibrium is at point b.

Graph 14: Indian Annual GDP Growth Rate (2009-2010)

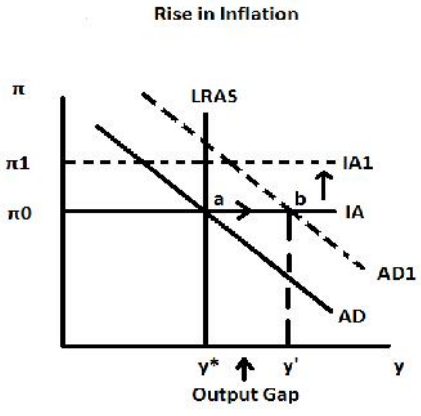
There is clear evidence from the graphical data that the Indian economy was recovering from the 2008 global financial crisis with the help of revival in capital expenditure and consumption cycle. The following graphical data essentially prove that the primary drivers of growth were industrial production and consumer spending.



Graph 15: Indian Industrial Production (2008-2010)

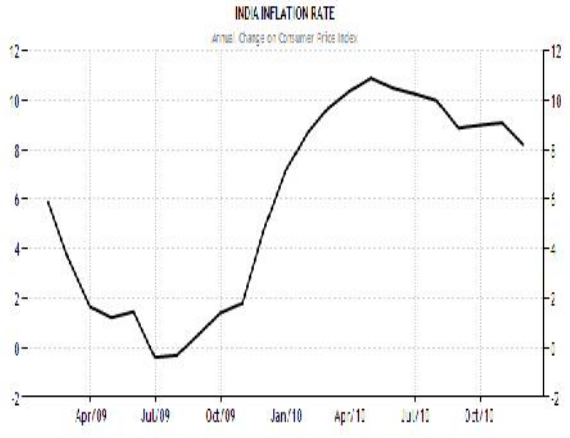
Graph 16: Indian Consumer Spending (2008-2010)

This expansionary output gap put upward pressure on inflation. There was huge demand for resources and as a result firms increased their production thus pushing the output above its potential. Hence the cost of the resources was bided up as they started becoming scarce. This led to higher inflation due to demand pressures.



Model 3: Rise in Inflation

The above figure represents the upward pressure in the inflation through a shift in the short run aggregate supply from IA to IA1.

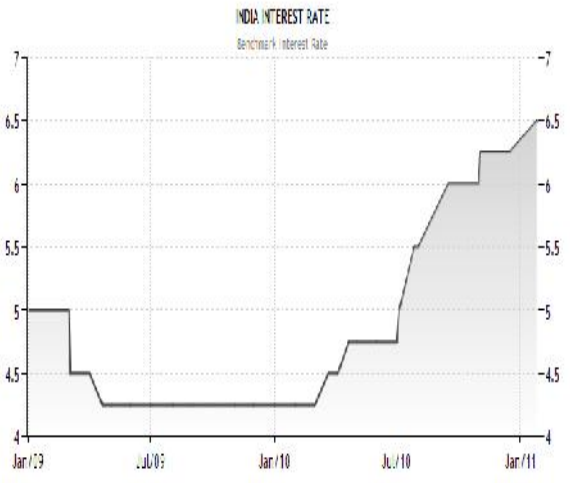


Graph 17: Indian Inflation Rate (2009-2010)

The inflation gathered momentum from mid 2009 and this was precisely the time when industrial activity had turned round the corner for a better future.

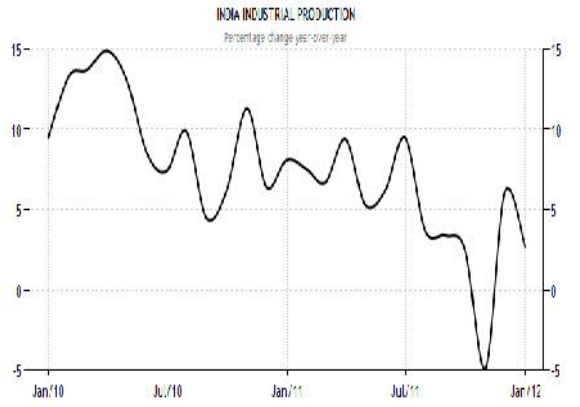
2.3 2010-2011: Cooling Off (Inflation Shock)

This time around **Dr**. **Duvvuri Subbarao** showed his hawkish trait. He quickly realized that the economy was overheating by growing above its potential level. An instinctive policy response was to increase the policy interest rates by the RBI to counter the spike in inflation.



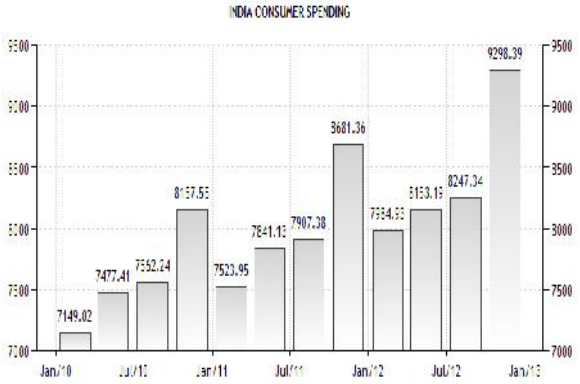
Graph 18: Indian Interest Rate (2009-2010)

This resulted in the higher cost of borrowing and discouraged the planned investment expenditure by firms during the same period.



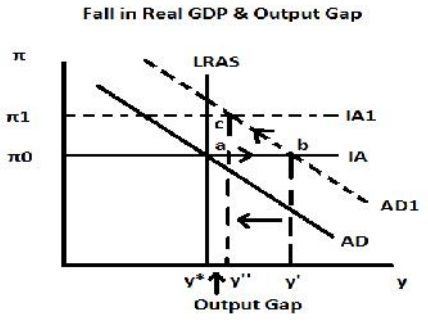
Graph 19: Indian Industrial Production (2010-2011)

Despite the rise in cost of borrowing, the consumption story was intact and consumers kept their purse strings loose.



Graph 20: Indian Consumer Spending (2010-2012)

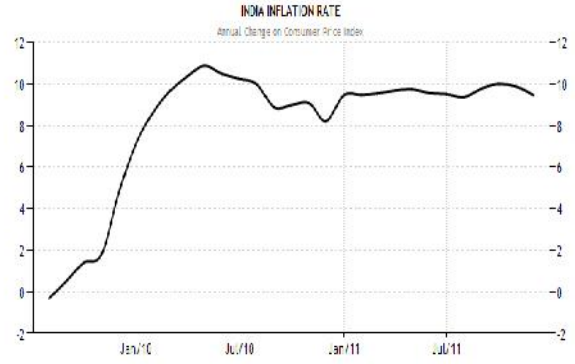
Nonetheless, the downturn in the capital expenditure cycle was more than enough to cool off the overheated economy. Observing the below figure, impact of this rise in the interest was fall in the real GDP from y' to y''. This is represented as movement along the AD1 line and resulted in reduction of the expansionary output gap. Also, c became the new short run equilibrium point.



Model 4: Fall in Real GDP and Output Gap

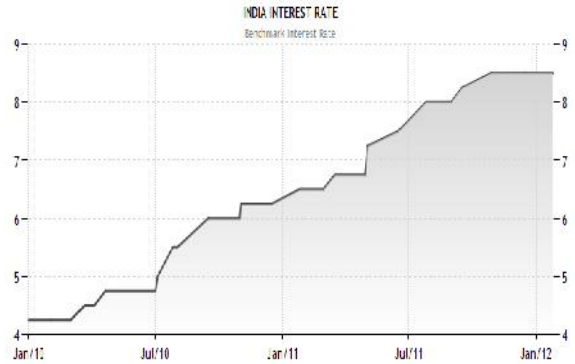
Graph 21: Indian Annual GDP Growth Rate (2010-2011)

Even on contraction of the expansionary output gap, inflation remained sticky at elevated levels due to **demand pressures** exerted by strong consumption expenditure. Incrementally, the **supply side** of the economy was adding salt to the injury due to the slump in business confidence and investment in the economy.



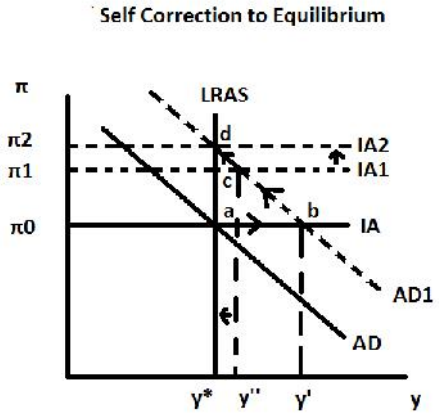
Graph 22: Indian Inflation Rate (2010-2011)

This forced the already hawkish RBI to further increase the policy interest rates. Furthermore, firms cut back their investment expenditure and the entire process will reiterate until a point of both long run and short run equilibrium is reached.



Graph 23: Indian Interest Rate (2010-2011)

As observed from the following figure, a shift in the inflation is represented as a shift in the short run aggregate supply line from IA1 to IA2. The output gap is eliminated and the real GDP is brought back to its potential level at y* by movement along the AD1 line. Subsequently, point d acts as the new short and long run equilibrium point.



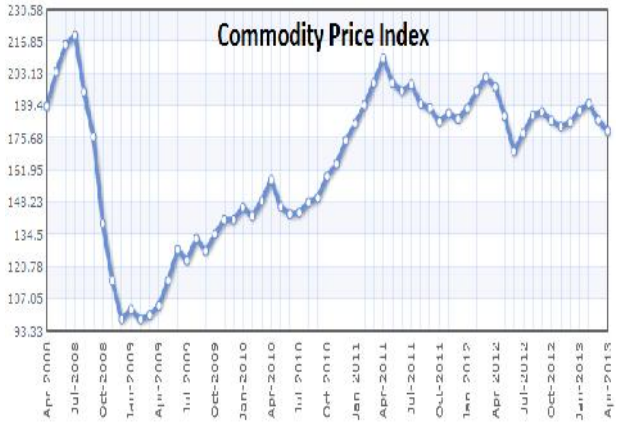
Model 5: Self Correction to Equilibrium

The above process of reversing real GDP back to its potential level is called **self correction**. An interesting observation that can be noted is that self correction does not lead the inflation to return to its original level even after the elimination of the expansionary output gap. Thus, the inflation remains sticky.

The high inflation accompanied by fall in the real GDP was a common phenomenon in the economy since the turn of the decade. This led to development of **inflation inertia**; which is the tendency for current period's inflation rate to be equivalent to the last period's inflation rate.

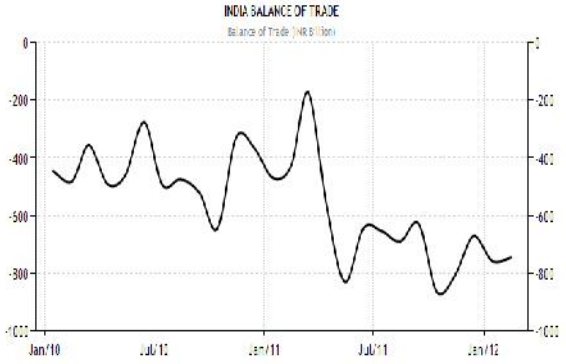
- Expected inflation played an important role in price setting. For example, firms expecting their costs to increase by 5% this year had to raise their prices by 5% this year to preserve profit margins.
- Most recent inflation experience also influenced expectations. For example, firms observing their costs increasing by 5% last year expected their costs to increase by 5% this year.

Thus, the higher inflation got built into expectations of the current inflation and led to emergence of an **inflation shock**. Inflation shock relates to exogenous reasons such as a spike in the commodity prices. Take for example, a surge in crude oil prices fed through to current inflation.



Graph 24: Commodity Price Index (2008-2013)

The rise in commodity prices of India's largest imports, such as gold and oil, widened India's trade deficit.



Graph 25: Indian Balance of Trade (2010-2012)

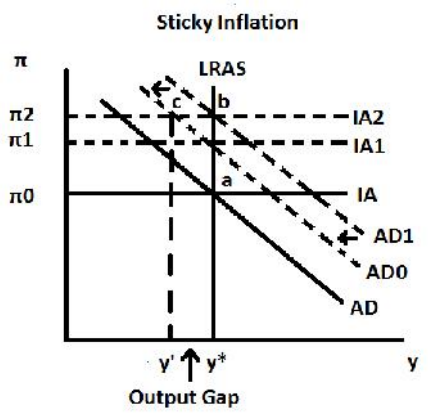
In order to finance these imports Indian government had to borrow money by selling its bonds. Suddenly, there was a huge supply of government debt in the market but not enough demand to match it. This led to rise in yield on government debt followed by a higher borrowing cost for the private sector from early 2010 to late 2011. This is known as **crowding out effect**.

Graph 26: Indian Government Bond Yield (2010-2013)

Hence, the RBI began to accumulate this excess supply of government bonds under a program **Open Market Operations**. As a result the government's borrowing cost ceased to surge higher but this was an indirect attempt at **deficit financing** of the government by the RBI. The cost of these actions was putting upward pressure on the inflation.

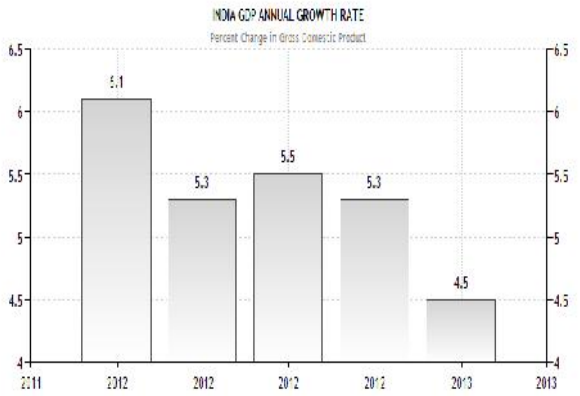
3. CURRENT SCENARIO

3.1 2012-present: Soft Landing



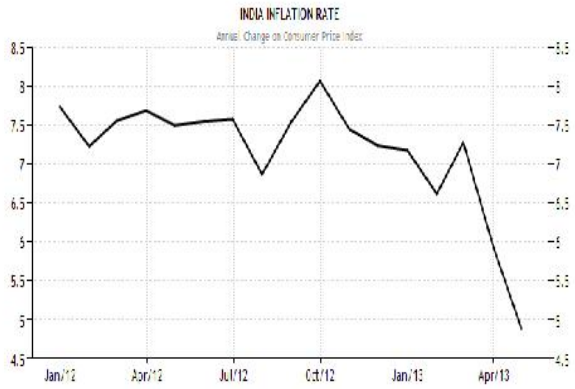
Model 6: Sticky Inflation

With the onset of 2012, the economy was suffering from slowing real GDP due to stagnant capital expenditure. As seen from the above figure, real GDP y' fell below its potential GDP y* forming a contractionary output gap. This was due to the fall in aggregate demand curve from AD1 to AD0. The economy moved away from equilibrium at point b to disequilibrium at point c. However, this did not precipitate into lowering of prices and inflation remained at IA2.



Graph 27: Indian Annual GDP Growth Rate (2012-2013)

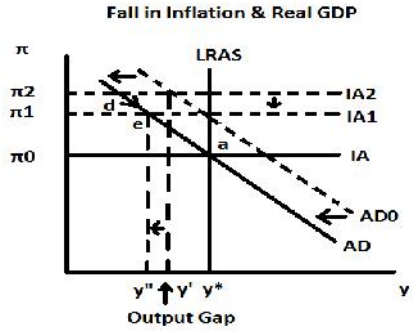
Inflation was under incremental demand pressure from the unprecedented surge in consumer demand. As a consequence, the RBI Governor set an **inflation target** of 5% above which he would not loosen the monetary policy unless there is a sustainable decline in inflation. This anchored the inflation expectations of business firms and consumers to 5% and prevented any further rise in inflation.



Graph 28: Indian Inflation Rate (2012-2013)

Despite the clamor for interest rate cuts from India Inc., the Mint Street was very adamant against easing the monetary policy in early 2012.

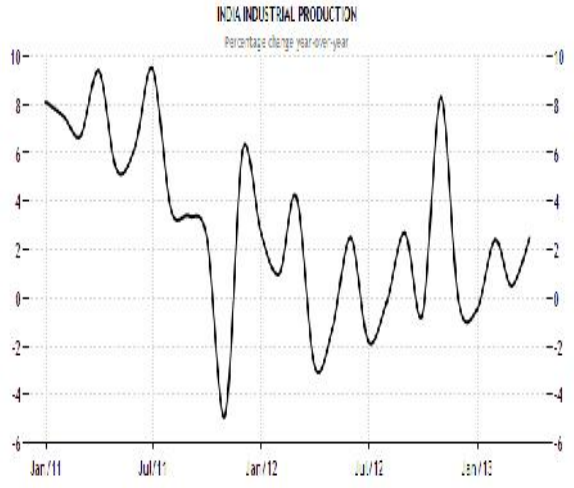
Graph 29: Indian Interest Rate (2012-2013)



Model 7: Fall in Inflation and Real GDP

In the above model, first the aggregate demand shifts from AD0 to AD due to exogenous reasons such as fall in investment. Subsequently, there is also a fall in inflation from IA2 to IA1. This causes movement along the AD and short run equilibrium is established at point b. Further, there is a fall in real GDP from y' to y" resulting in increase in contractionary output gap.

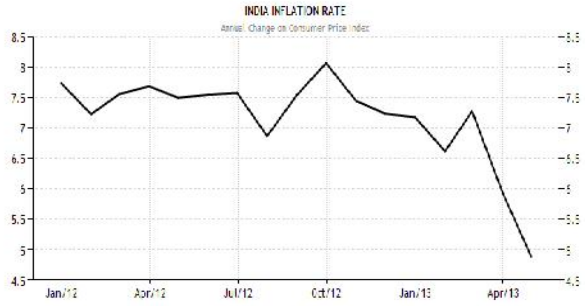
Due to subdued investment climate, the capital expenditure cycle did not recover substantially from its 2011 lows.



Graph 30: Indian Industrial Production (2011-2013)

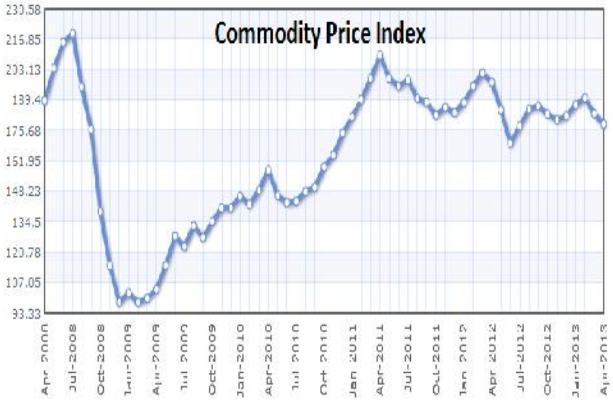
Graph 31: Indian Interest Rate (2012-2013)

We can clearly observe that high interest rates were deferring firms from undertaking any new capital expenditure. With inflation stabilized between 7-8% in first half of 2012, RBI cautiously began cutting interest rates in small steps from March 2012. This helped the capital expenditure to at least bottom out but is yet to recover from the lows.



Graph 32: Indian Inflation (2012-2013)

However, there was some relief on the inflation front with prices continuously trending down from late 2012. The primary driver behind this fall in inflation was softening in global commodity prices starting from April 2011.

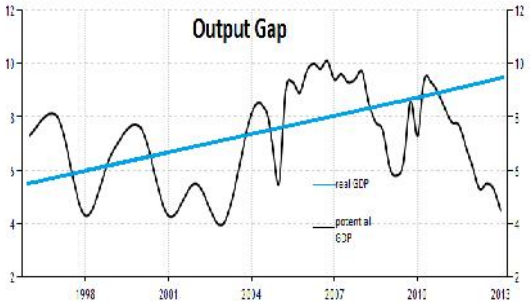


Graph 33: Commodity Price Index (2008-2013)

4. MACROECONOMIC OUTLOOK

4.1 Is the India Growth Story Over?

At this juncture, it would be far too early to assume that Indian economy has undergone a significant structural change in its potential GDP level. Yes the potential GDP may have topped out at 8.5% but we have not yet seen a substantial fall in it.



Graph 34: Output Gap (1998-2013)

What we are observing could only be a cyclical downturn in the real GDP level. However, there are some risks to this assessment and if these get mitigated then we could see Indian economy turning the corner for a better future.

4.2 What the RBI is trying to achieve?

With strict inflation targeting approach to monetary policy, RBI wanted to reduce the inflation to their target by intentionally creating a slowdown in real GDP. Hence, RBI had to manufacture a fall in real GDP equivalent to the difference between actual inflation and targeted inflation.
The following is the **Taylor's equation**.

$$i_t = \pi_t + r_i^* + \alpha_\pi (\pi_t - \pi_T) + \alpha_y ((y_t - y^*) / y^*)$$

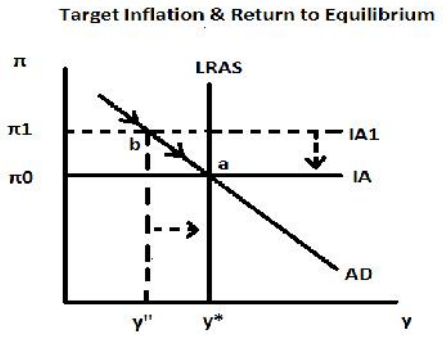
Inflation Gap Output Gap

where, i_t = nominal interest rate
π_t = actual inflation rate
r_i^* = equilibrium real interest rate
π_T = inflation target rate
y_t = real GDP
y^* = potential GDP
α_π, α_y = constants used to adjust difference in inflation and output gap respectively.

A relatively **high value** for α_π reflect RBI is more responsive in controlling **inflation**, whilst a relatively **low value** for α_y reflects RBI is relatively less responsive to **output gaps**.

The RBI was targeting the inflation gap by not only increasing value of α_π, but also by decreasing the value of α_y. Hence, this has incrementally widened the contractionary output gap by severely affecting the real GDP.

The RBI will gradually try to eliminate the output gap primarily by increasing real GDP with the assistance of reduction in policy interest rates in accordance with fall in inflation their target of 5%.



Model 8: Target Inflation and Return to Equilibrium

As we can see in Model 8, with inflation falling from IA1 to IA the RBI should respond with policy interest rate cuts. This is what we call a **rules based approach to monetary policy**. Gradually, as interest rate cuts get transmitted in the economy, the economy will move back to long run equilibrium from point **b** to point **a** along the AD curve. This will bring the real GDP y' back to its potential y".

4.3 Risks to the Assessment

- *Widening Fiscal Deficit*: The biggest risks would be overshooting on the budgeted fiscal deficit of 4.8%. Government going into elections in 2014 could lead to doling out of subsidies to garner votes. In the process, it could exceed its budgeted expenditure supporting high inflation.
- *Pre-mature Monetary Easing*: The RBI needs to confirm the falling trend in inflation on a quarterly basis. RBI has to also confirm this trend by observing multiple price indices such as wholesale price index and consumer price index. Pre-mature monetary easing could act against the RBI tactic resulting in a change in the trend of the inflation for the worse.
- *Below Average Monsoon*: The Indian MET department has forecasted a normal monsoon for 2013. However, lack of average monsoon will reduce the **kharif harvest** resulting in food shortage and spike in inflation. This is because 60% of agriculture depends upon monsoon showers for water. Hence the RBI should take a final call on inflation only after the September harvest.
- *Reversal of Global Liquidity Flows*: A tapering in the liquidity injection programs by the Federal Reserve, Bank of England, Bank of Japan and European Central Bank could lead knee jerk reversal in the global liquidity flows to India. This will reduce the capital account surplus which acts as a counter balance to the current account deficit. An already weak rupee would further depreciate making imports even more expensive. RBI would have to inevitably defend the rupee volatility with the help of their limited foreign exchange reserves. This would not only deplete the reserves but could also aggravate growth and inflation outlook.
- *Commodity Prices & Current Account Deficit*: Currently, a slowdown in the global economic growth has led to softening in commodity prices. India imports 60-70% of its crude oil and gold demand. The cost of our imports has been drastically above the cost of our exports. This has led to widening of the trade deficit and current account deficit breaking to historical levels of 6.7% of the GDP in the December quarter of 2012. Any upward bias in commodity prices will widen the current account deficit further. This could be followed by huge capital outflows and depreciation of the Indian rupee which will only aggravate the problem of expensive imports.
- *Slowing Global Economy*: A continued slowdown in the global economy will reduce the demand for India's exports which will lower the aggregate demand of the economy. An already undervalued currency (making exports cheap) may not offset the impact of slow growth.

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