ECONOMICS OF MAKE IN INDIA

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GLOSSARY OF ABBREVIATIONS

ASEAN	:	Association of South East and Asian Nations
BC	:	Before Christ
BEL	:	Bharat Electricals Ltd
BHEL	:	Bharat Heavy Electrical Ltd.
CII	:	Confederation of Indian Industries
CPI	:	Consumer Price Index
CSO	:	Central Statistical Organization
DIPP	:	Department of Industrial Policy and Promotion
DPP	:	Defence procurement Policy
DRDO	:	Defence Research and Development Organization
EPW	:	Economic and Political Weekly
ERV	:	Exchange Rate Variation
FDI	:	Foreign Direct Investment
GDP	:	Gross Domestic Product
GoI	:	Government of India
GST	:	Goods and Service Taxes
ICMR	:	Indian Council of Medical Research
IHD	:	Institute of Human Development
IMF	:	International Monetary Fund
INR	:	Indian Rupee
MoD	:	Ministry of Defence
MRO	:	Maintenance, Repairs and Overhaul
NSSO	:	National Sample Survey Organization
PSU	:	Public Sector Undertakings
R & D	:	Research and Development
SAARC	:	South Asian Association for Research and Cooperation
SIPRI	:	Stockholm International Peace Research Institute
SME	:	Small and Medium Enterprises
TT	:	Transfer of Technology
UN	:	United Nations
USD	:	United States dollar
WEF	:	World Economic Forum
WPI	:	Wholesale Price Index
WTO	:	World Trade Organization

ECONOMICS OF MAKE IN INDIA

1 Preamble

On August 15, 2014, the Prime Minister of India Shri Narendra Modi announced from the rampart of Red Ford in New Delhi to the nation a new mission of 'Make in India'(www.pmindia.gov.in). The program was launched on 25th September 2014 with the creation of a separate department within the Ministry of Industry as Department of Industrial Policy and Promotion (DIPP, 2015). He further declared that India should have a *'Zero Defect Zero Effect'* production mechanisms wherein products have no defects and the process through which they are made has zero adverse environmental and ecological effects. The program also aims to prevent products developed in India from being rejected by the global market. While broadcasting all these new twists on boosting the process of industrialization, he was perhaps quite aware of many challenges as well [2]. But, it was also quire widely known by then that industrial development in the past 65 years of planned development in India was never a free rider either.

The major objective behind this initiative is to focus on 25 production sectors of the economy to promote productions to meet both domestic demands and export windows on a path truly of Inclusive growth with ample scope for job creation and skill enhancement. Some of the sectors identified are : automobiles and components, chemicals, Information Technology (IT), pharmaceuticals, textiles and garments, ports, aviation, roads and highway electronic systems, space, leather, tourism and hospitality, health care and wellness, railways, construction, electrical machinery, defense manufacturing, thermal power, renewable energy, mining, bio-technology, food processing, media and entertainment, and electronics (DIPP, 2015).

[2] The very next day in Mumbai, he dedicated to the nation Stealth destroyer INS Kolkata, the country's largest indigenously built warship, which took 12 years to complete, but still not equipped with the main Long range Surface to Air Missile (fabricated under the joint venture with Israel), and Towed Array Sonar System, (still being developed by DRDO)!

Subsequently, several additional programs were also announced on the same lines from time to time. Notable ones are: Skill India, Digital India and Startup India. Meanwhile, an academic and policy debate started on the difference between 'Make in India' and 'Made in India' or 'Make for India' (Rajan, 2014).

Interpreted in economic terms, 'Make in India' is an invitation to foreign and Indian manufacturing firms to invest and produce in India, with or without foreign but modern technologies and capital investment flows, using domestic labour force. The policy stress is on manufacturing in India using domestic labour after training and retraining on skills, with enhanced flow of foreign direct investments (FDI) with hand held transfer of technology (TT) and improved governance in making business. The production targets may be for the Indian domestic consumption or for exports. Several variants of this mission are: 'Buy and Make', or 'Make within India only' as against 'Total Buy' option. The 'Buy and Make' option stands for buying some intermediary equipments and materials, and make further processing and assembly within India by Indian firms. Equally important to note is the fact that there are increasing national security issues on Indian borders, making heavy demands on our defence forces, for which 'Make or Made' in India can also be targeted, making the defence sector free from 'Buy' options in the long run.

The program will require several major shifts in policies and strategies at public and private sector levels, and government administrative structures. In brief, some of them are: emphasis on drastic shift to high level of productivity, pushing programs on job skill developments, promoting labour intensive production systems, creating an atmosphere for boosting exports purely on a competitive basis, creating opportunities for infrastructural development, and providing congenial financial and credit facilities.

‘Make for India' on the other hand, stands for a marginally different notion of boosting industrial productions. It is for 'making to meet largely the domestic demands first, and foreign demands next'. If opted, this latter option however, should not depend upon tax and various other export subsidies, but rather purely on an international competitive basis. Rather it should be designed basically to meet domestic demands, by internalizing its captive labour force and skill development.

The 'Made in India', is another variant of Make for India, with some more stress put on its export compatibility.

These two programs namely, Make, or Made in India, can be compared on the basis of supply and demand options. From the demand side, while 'Made in India' is more focused on capturing domestic demand and making exports more competitive, the 'Make in India' is less specific on this. From the supply side, 'Make in India' as well as 'Made in India' emphasize on improving productive efficiencies, improving labour market conditions with skill development and job absorption. On FDI and governance matters both of them speak with the same tone. 'Made in India' also requires several fiscal and monetary policy reforms additionally, such as gradual withdrawal of subsidies, or reducing lending interest rates.

This monograph concentrates only on the economic aspects of Make in India mission. Section 2 is an attempt to explain the economic logic and reasons for this mission. An appendix at the end of the monograph provides some glimpses of the economic theory of production and trade, through which Make in India mission can be visualized. Section 3 highlights the major challenges to operationalize the mission. Section 4 is specifically devoted to the issues in implementing the mission specifically for the defense sector. The last section provides some policy guidelines towards implementation.

2 Reasons for Make in India Mission

The economic logic behind both these development strategies can be tracked historically. One may remember that a policy of 'Made in India' type, was introduced during the early planning era in India (i.e., from 1951 till recently) with the country adopting import substitution and self reliance as major macro policies. On the latter front, both the green and white revolutions in agriculture and food sufficiency were the successful outcomes in India.

2.1 Economic rationale

The economic rationale for planned development then was based on Arthur Lewis' (1954) theory of shifting surplus labour from agriculture to basic industry, and industry to follow a 'take-off' stage of structural shift from agriculture (Rostow,1962; Mahalanobis, 1955); emphasis on heavy industrial development as well as modernizing agriculture by focusing on both land and labour productivity with green technology were the major targets. With emphasis on heavy industrial development the country was expected to reach its full potentials in industrial development, subsequently shifting the focus from industry to service sectors over a long time period (Figure 1).

Prior to the planning era, India was substantially an agricultural country with its contribution to the GDP of over 50%, with over 80% of labour force engaged on it. Though the then planning strategy worked substantially for food sufficiency, industrial development was not of any significant magnitude. Total food grain production went up from 75 million tonnes in 1950's to over 265 million tonnes per year by 2013-14 (Economic Survey, 2015). Per capita food (cereals plus pulses) availability went up from 394.9 gms per day in 1951 to over 510 gms in 2014 (which is much above the ICMR's recommended dietary requirements for an average adult Indian).

Since the second Five Year Plan (1956-61) public investment in heavy manufacturing sector was emphasized with scope for shifting labour from agriculture to industry related production activities. It may be recalled that heavy industries such as steel plants (Bokaro and Bhilai), gigantic river dams and hydroelectric projects (Bhakra and Hirakud), major expansions of railway networks (Perambur coach factory in 1953, expansion electrification of rail links, laying of new rail links etc.), establishment of heavy engineering works (such as BHEL, BEL) and many other heavy industrial establishments were undertaken during the first 15 years of the planning era.

Though the Manufacturing sector grew from its contribution of about 15% of GDP in 1950-51, to about 28% by 2014-15, it did not absorb all the surplus labour from agriculture to manufacturing (Economic Survey, 2015, Statistical

tables-A7-8, 55). The total factor productivity of formal and informal manufacturing sectors were growing at about 8.6% per year during 1990-2000, but dropped to a negative of (-)1. 54% during the subsequent period (Kathuria,2013). The growth rate of Industrial production has been stagnant since 2011-12 (Economic Survey, 2015). One did not see much of import substitution in India's growth during the forty years of development either. Industrial production continued to remain dependent on imported technology, materials and equipments as can be seen from Figure 2. Imported material inputs as a ratio of total material inputs in fact increased during the last twenty five years from about 11% in 1985 to nearly 30% in 2011 (Golder, 2015)[3].

Among the many reasons, some thing about project monitoring and implementations needs to be mentioned. Attributes such as ill designed projects, delays in project implementations, and subsequent cost over runs can be mentioned. As can be seen from Table 1 a large number of transport, power, Oil & Gas, or railway projects were lagging quite behind their planned target dates. Apart from its impact on other production and delivery systems, the cost over runs add up to the overall costs and hence inflation.

While, industry was not productive enough, there was a major shift in focus to service sector from 1990's. GDP contribution from service sector grew very rapidly from a low rate of 3% growth during 1950-51 to 10-14% per year since 1990's. It touched the highest of 14% during 2006-07 with a 60% share in GDP. (Economic Survey, 2015; and also Figures 4 and 5 below).

The message and also the lessons are clear. India did not go through the desired growth path of moving from agriculture to industry to service, but jumped from agriculture directly to service sectors in the long run. This economic lesson prompted now to reverse the growth process by 'Make in India' mission, backtracking to go through industrialization in a big way.

[3] Indian Current Account Trade Balance has been negative all through the last 50 years, negatively declining in recent periods at the rate of about Rs. 135 billion annually The trade deficits currently are of the order of US$ 22 billion, and multi-lateral, bilateral and IMF debt outstanding is of the order of US$ 84 billion in 2014-15.

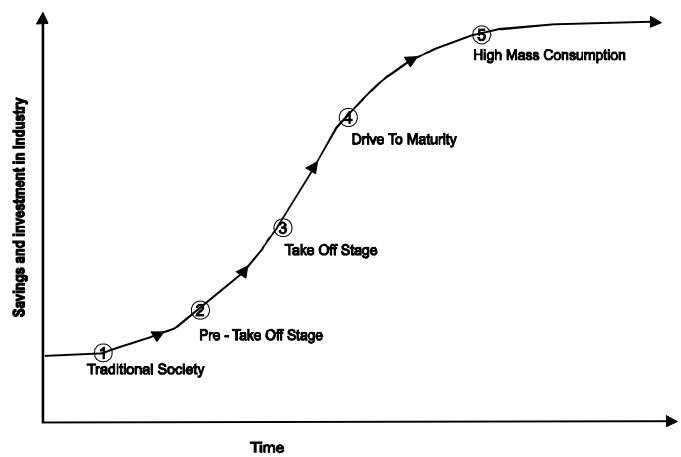
Table 1: State of Infrastructure Implementation in India

Sector	No. of projects delayed	Delay period (in months)	Cost overrun in INR billion (% escalation)
Transport	78	2-101	22 (8)
Power	47	1-83	146 (12)
Oil & Gas	31	4-120	83 (10)
Railways	27	2-204	302 (137)
Urban	1	24	52 (82)
Coal	17	9-48	31 (27)
Shipping & Ports	10	2-93	8(10)

Source: Ernst and Young (2012), quoted in Agrawal (2014)

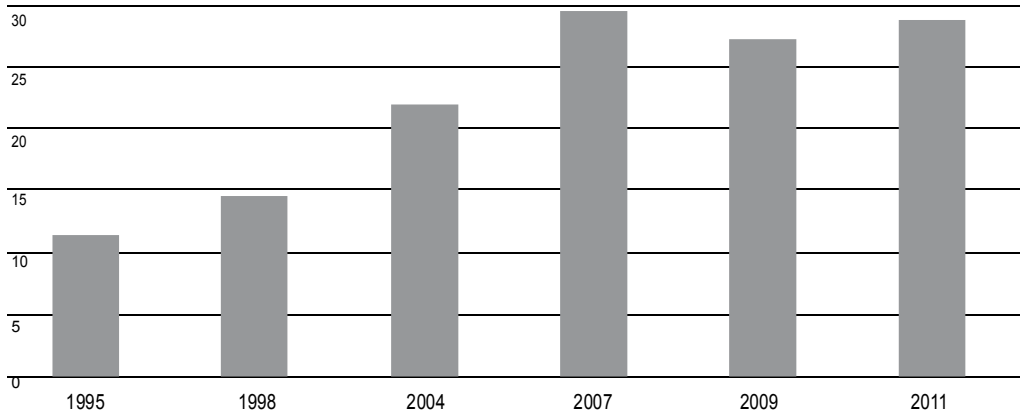
There are more specific reasons for launching 'Make in India' mission. First is from the recent globalization experience. The world experienced a global financial crisis during 2009 to 2013, and now again with another financial crisis in Greece, Brazil, Japan and China recently. Many of these countries will have to look for more and more of their internal consumption dependency than on external trade dependency. China has already announced its downward growth rate to around 7%.

Figure 1: Rostow's Stage theory of Economic Development



The net result was low growth and projected export pessimism in most of the European US, Japan and other developed countries (who cut down imports substantially). Figure 3, taken from UN, depicts the gloomy projected growth scenario at the global level.

Figure 2: Imported Materials as % of Total Materials in Manufacturing (Source: Golder, 2015)



2.2 Setback on Inclusive growth

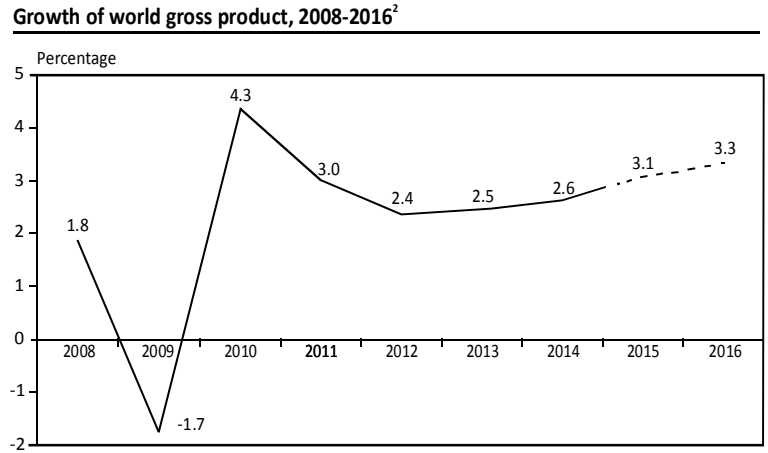
In the mid 2000's, India initiated an Inclusive Growth strategy, in which both labour absorption and skill development were emphasized (GoI, Planning Commission, 2008). However, between 1990 till date, employment growth rate has never been more than about 2% annually (Economic Survey, Vol.1, p.11). Since the global financial crisis of 2009, the FDI flows have never been above US17 billion dollars annually (op cit, vol.2, p 61). The FDI flows into India initially went up from 2009, but started dropping due to various difficulties in doing business in India. By 2015 however, it was noted that the Inclusive Growth strategy requires significant shift in the FDI policy and thrust, and preparedness on labour front. To quote from the 2015 Economic Survey of GoI: "…offer an alternative way of thinking about transformational sectors beyond the traditional distinction based on manufacturing versus services. …the shortcoming that these sectors are highly skill intensive in their resource requirements, which is out of kilter with the skill

profile of the Indian labor force. Their potential to generate widely shared or inclusive growth is thus likely to be limited" (Economic Survey, 2105, vol.1; p. 114). The Economic Survey goes on to say:"… should it (government) try to rehabilitate unskilled manufacturing or should it accept that that is difficult to achieve, and create the groundwork for sustaining the skill intensive pattern of growth?" (op cit, p.115).

2.3: Recent Export Pessimism

Third is about overcoming export pessimism ever since the 2009 global financial crisis. Given the current international continued recession and deflation situation, prospects on external demand growth is likely to be muted for at least the next several years (Figure 3 at the global level).

Figure 3 : Recent Trends in Growth in Global Gross Products



Source :UN/DESA.
a Growth rate for 2014 is partially estimated; rates for 2015-2016 are forecast

United Nations, "World economic situation and prospects as of mid-2014 (E/2014/70)", available from http ://www.un.org/en/development/desa/policy/publications/ecosoc/e_2014-70_wesp_mid.pdf

Figure 4 : Sectoral Contributions to Indian GDP

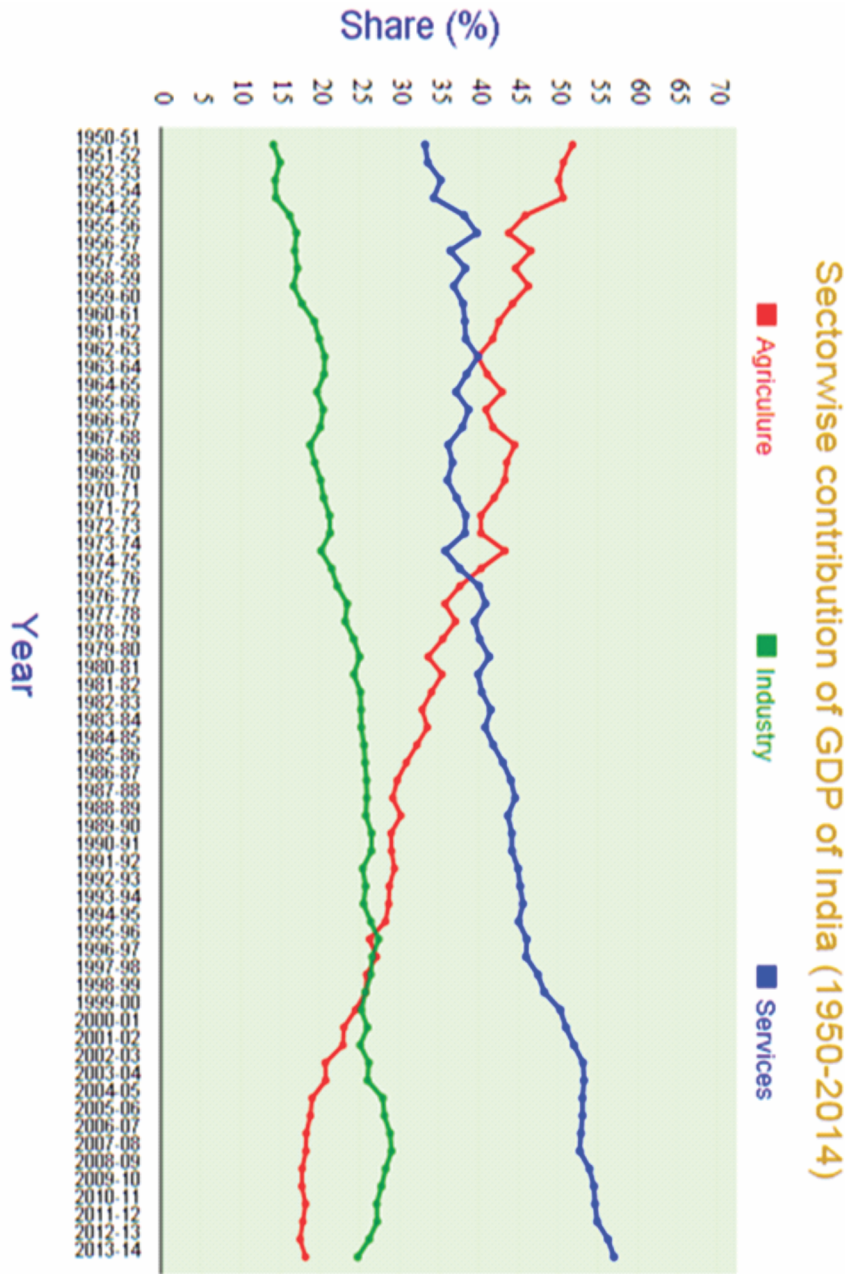
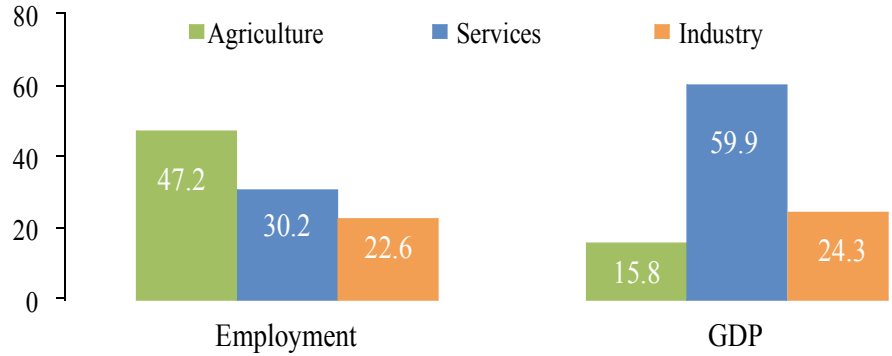


Figure 5 : GDP and Employment Shares of Agriculture-Industry-Service Sectors (2011-12, in percentages)



Source : 68th Round of the National Sample Survey and National Accounts, Ministry of Statistics

According to the World Bank data, most European countries like UK, Sweden, France, Germany, or USA are experiencing from negative to less than 1% growth in GDP during 2012 onwards. In the same period, India had registered about 5.1% on average, while, China also slowed down to 7.8% from its two digit growth rates (World Bank Indicators-2015). The projections are also pointing at India to be neck to neck with China, at 6.3% and 6.8% growth rates, respectively for 2016 (UN, 2015). Global merchandise trade has never crossed 5% growth rate, but more often negative from 2006 onwards http://unctadstat.unctad.org /wds/TableViewer/ table View.aspx). Such a grave global situation needed to be kept in mind for either of the 'Make or Made in India' policy options.

In the year 2013-14, Indian export to Gross National Income ratio was 17.0%, indicating the rest of the productions were domestically used up (GoI-2015).It is worth noting that even in the midst of global recession, China however has been retaining over 25% of its GDP as exports (UN,2015). Apart from meeting basically its domestic consumption demands, for reasons of strategy and security from external threat, India needs to be prepared with enhanced domestic productions for its short and long term warfare activities.

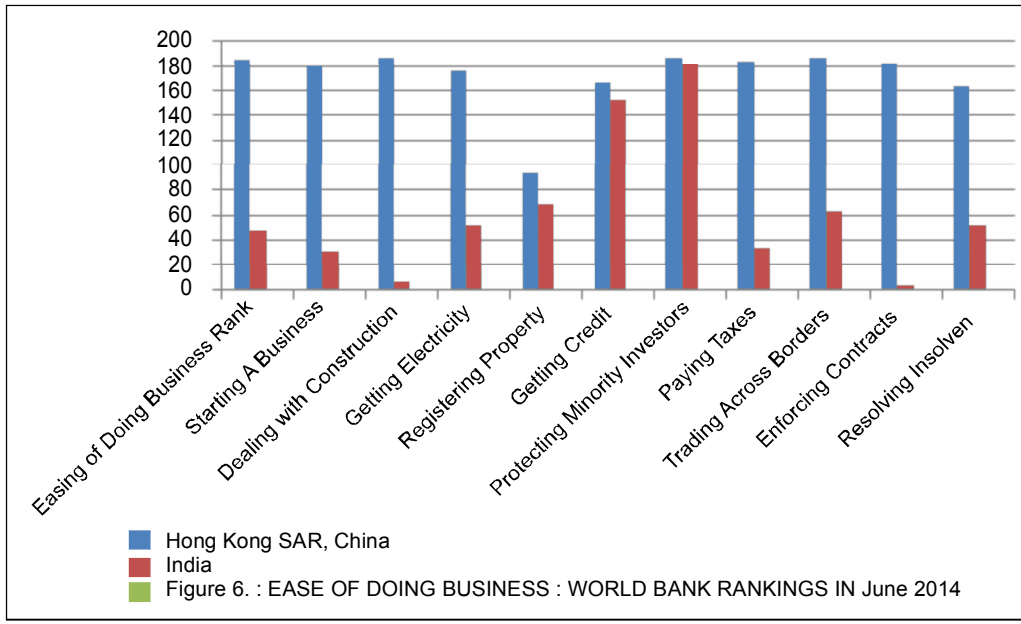
2.4: New Strategy Required

Therefore, by 2014-15, it was clear that India has to take a reverse turn in the development phase of the country. The first lesson is that it is not just enough to seeing labour force shifting from rural to urban for industrial jobs. It requires a major thrust on skill development to absorb them without compromising productivity. Second, on investment front, though India depended upon foreign investments substantially, the flow of Foreign Direct Investment which went up from 4 billion US dollars in 2000-01 to 29 billion in 2010-11, started going down to 27 billion by 2014-15 (Economic Survey, 2015). Moreover, India was always lagging behind China in bidding FDI flows. The share of FDI in GDP in India was 1.29 per cent in 2012, as against a significantly higher 3.08 per cent in China. So, the lesson is to create an environment to attract FDI on a large scale.

Thirdly, it was realized by 2010 the necessity to ease the climate on doing business on investment and trade front. As can be seen from Figure 6, compared to China, India is far behind in attracting business to India. Furthermore, except for protecting minority investors in getting credit, in most other business related governance parameters, India is far behind China. Particularly India has to create good business climate in areas such as construction, enforcing contracts properly, in paying taxes or in starting business itself. Transparency and wide publicity, and creating infrastructures ahead of investment and business interests are a must. Therefore, though in many ways as compared to China, India is quite ahead in infrastructural development, there is an urgent need to improve the implementation and project delivery systems.

Delivering such a shift in growth process calls for several new strategies and adjustments. There is a need to create a strong sustainable production market by reducing the transaction costs of buying and selling, improving the internal transportation network, enabling more efficient and competitive intermediaries in the supply chain from producer to the consumer, and improving labour productivity by specific job and skill training. The strategy should also be addressed to meeting domestic aggregate demands without inflation. Moreover, Make or Made in India

Figure 6: Ease of Doing Business: India and China (2014)



mission should also scope for developing indigenous technology, as a long term sustainable strategy.

3 Challenges on Make in India

The process of this new mission requires building the growth blocks from what exists now. Broadly speaking the urge for such policy changes is from both domestic and external front. For this, the relevant recent economic scenario from late 2000 and the lessons there from provide some good footprints.

3.1 Domestic production scenario

Let the domestic scenario be examined first. According to the Global Competitiveness Report for the year 2014-15, in terms of the domestic market driven production potential, India ranks third. That is a healthy sign for designing any developmental activities. But, the production performance has not stood by its potentials.

There are four ways of assessing the domestic economic scene:

First, by the overall growth rate;

Second, by the sectoral growth rates;

Third, by looking at the changes in the shares of the major production sectors;

Fourth, by looking at our domestic performance in comparison with the world economy.

India liberalized its trade and manufacturing sectors since 1991 with a globalized reforms policy. It is a sad story to tell that on all the four counts, Indian manufacturing sector has not come up to the expectations. The overall GDP growth rate itself has come down from 9.3% in 2007-8 to 4.7% per year in 2013-14 (GoI, CSO, 2014). Ever since the 2009 global financial crisis, Indian growth rates have been consistently coming down as can be seen from Figure 7. However, during the same period China continued to manage double digit growth rates over a long time.

Second, between 2007-8 and 2013-14, the annual industrial growth rates have come down heavily from 9.7% to 0.4% (GoI, CSO, 2014). Between 2004 and 2014 the manufacturing sector has registering annual growth of around 7.25 per cent, which came down to 2.4% in 2012[4]. Third, in recent periods the GDP contribution from agricultural sector has been coming down, from what it used to be 17% in 2007-8 to about 14% in 2013-14; that of manufacturing sector also have dropped from 29% to 26%, and Service sector has jumped up from 54% to 60% now, perhaps for the wrong reason (GoI, CSO, 2014). As a contrast, following a take-off strategy for the industrial sector, China has consistently followed Rostow's growth model (1960). It maintained its industrial share of GDP at 47% continuously till date (Mehrotra et al., 2015); created scope for the share of the service sector to rise,

[4] On comparison, China's industrial growth rate, which touched 12.7% in 2010, but dropped to 7.9% by 2014, all due to global financial crisis of 2009 onwards.

but slowly from 24% in 1978 to 43% in 2011. Fourth, while Indian share in global manufacturing rose merely from 0.9% to 2.0% in the last two decades, that of China rose from 17.3% to 24.1% (CII, 2014,p.4). Keeping all these four dimensions of growth, it is time to set up policies to boost the industry sector first, to be followed by service and agriculture.

3.1.1 Raising growth rates

The major challenge for industrial sector under Make in India is about raising its growth rate. From the point of growth stimulants, there are indications that Indian savings rates also have come down (as a ratio of GDP from 33.7% in 2009-10 to 30.6% in 2013-14; Economic Survey, 2015)[5]. Therefore, policy drivers to raise the savings rate as well control of inflation need to be put in place (Rajan, 2015). On the production and demand side, there are two avenues. First is to widen and raise the investment and production base. Second is to raise the productivity rates. The latter requires a major thrust on skill development among the workforce, be they the migrant from rural areas or fresh entrée into labour force due to 'demographic dividend'.

India's organised manufacturing during the period 1999–2000 to 2011–12 is found to be growing at about 8% per annum (Golder, 2015). As per the target set by the National Manufacturing Policy of 2012, manufacturing growth rates have to be raised to over 15% by 2022. This seems to be a gigantic task at this stage, unless Make in India program makes major policy changes. In the first quarter of 2015-16, in fact the overall growth rate dropped drastically to 3% (Picture 1). Given the preparedness, in the coming one decade, India can set at best a growth rate for the manufacturing sector at about 10%. For this, production sectors like Textile and leather apparel, furniture, automobiles and its components, electronics, chemicals and chemical products, defense and aerospace sectors could be the drivers (CII, 2014).

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[5] In contrast, China has consistently maintained around 45% as the savings rate.

Picutre 1: News about Growth Rate in the First Quarter of 2015-16.

CORE SECTOR

ELECTRICITY SECTOR IS STILL A CAUSE FOR CONCERN, AS GROWTH HAS BEEN CONSISTENTLY SLOWING

Growth slows to three per cent in June

TCA Sharad Raghavan

The Hindu: Aug. 12, 2015

Growth in the index of eight core industries slowed to three per cent in June compared to 4.4 per cent in May, underscoring the poor growth in economy as shown by the Index of Industrial Production data for May. The IIP in May had slowed to 2.7 per cent from 3.4 per cent in April.

The eight core industries — Coal, crude oil, natural gas, refinery products, fertilisers, steel, cement, and electricity — comprise nearly 38 per cent of the weight of items included in the Index of Industrial Production (IIP).

Coal production increased by a robust 6.3 per cent in June 2015 over June 2014. But this was slower than the growth of 7.8 per cent seen in May. "The coal auctions earlier in the year appear to have a positive effect on the output as production grew by 6.3 per cent year-on-year despite a high base from last year," said Rishi Shah, an economist with Deloitte.

Growth in steel and cement accelerated in June to 4.9 per cent and 2.6 per cent respectively. Growth rates for these two sectors stood at 2.6 per cent and 2.5 per cent in May. "Steel and cement continue to show positive levels of growth and this trend can be expected to be reinforced if the investment activity also picks up momentum in the coming months," said Mr. Shah.

However, the electricity sector is still a cause for concern, as growth has been consistently slowing for several months. Growth in electricity production shrank drastically to just 0.2 per cent in June from 5.5 per cent in May. "Electricity growth has been slowing down over the past six months and indicates that power supply continues to be a constraining factor. Unless this and other supply side constraints are not tackled systematically, monetary policy interventions will not have the desired impact," Mr. Shah said.

CORE SECTOR

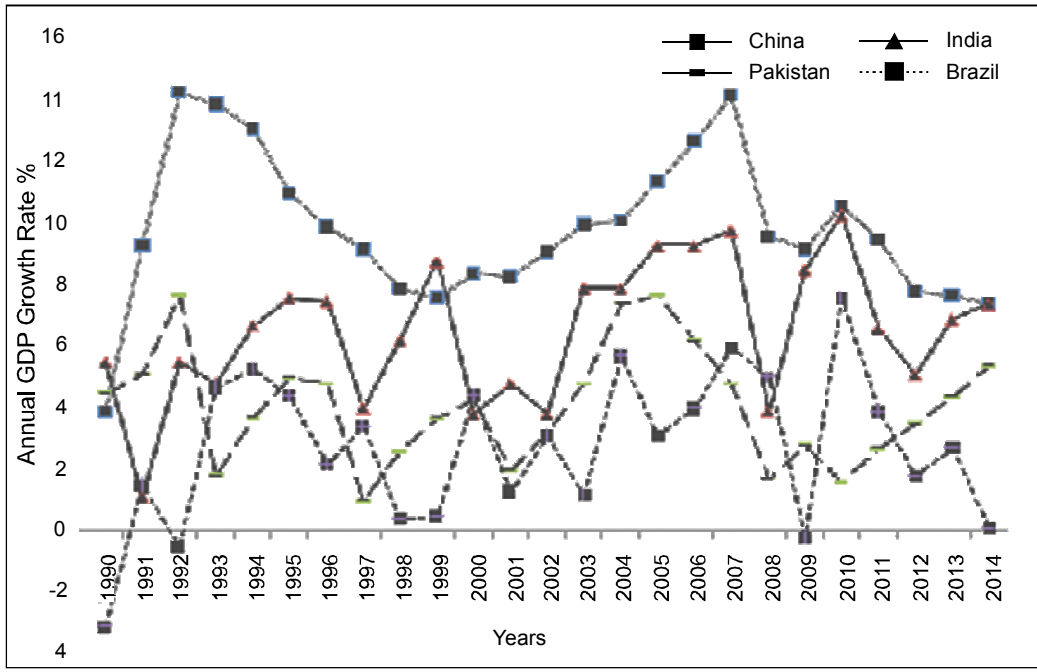
1. Coal production increases by 6.3 per cent year-on-year in June
2. Crude oil production contracts by -0.6 per cent in June following poor growth of 0.8 per cent in May
3. Refinery products continue to see robust growth
4. Contraction in production of natural gas accelerates to -5.9 per cent in June
5. Fertiliser sector sees strong growth in June

Crude oil production contracted by -0.6 per cent in June following poor growth in May of 0.8 per cent. However, data tabled by the Ministry of Petroleum and Natural Gas in Parliament shows that oil production in country for the period April-June 2015 has exceeded the target set for the period by 2.6 per cent. Contraction in production of natural gas in the country accelerated to -5.9 per cent in June, from -3 per cent in May. The sector has been contracting every month since November 2010. Natural gas production missed targets in 2012, 2013 and 2014, and continued to fall short even in April-June 2015.

In contrast, refinery products continued to see robust growth, of 7.5 per cent in June, marginally lower than the 7.8 per cent seen in May. Similarly, the fertiliser sector saw strong growth in June — accelerating to 5.8 per cent from 1.9 per cent in May.

STEEL AND CEMENT CONTINUE TO SHOW POSITIVE LEVELS OF GROWTH AND THIS TREND CAN BE EXPECTED TO BE REINFORCED IF THE INVESTMENT ACTIVITY ALSO PICKS UP MOMENTUM IN THE COMING MONTHS - RISHI SHAH, ECONOMIST, DELOITTE

Figure 7 : India-China- Pakistan and Brazil: GDP Growth Rates



3.1.2 Widen the base for industrialization

Under Make in India, there are alternatives. It is time to increase the scope for small and medium enterprises (SMEs) as well. About two decades back, SME's were undeniably been a vital part of Indian economy employing close to 40% of our workforce and contributing to nearly 45% of India's manufacturing. The share of SMEs in the National GDP was almost 9%. But, to raise finance has always remained still uncannily difficult for them. Our innovations are not necessarily product-centric and favorable to SMEs. SMEs should key in for creating higher value and consumer driven expectations.

With Make in India in the horizon now, things should not be just about manufacturing but also about designing, developing and selling various hardware and software products within India and to the world. In addition, we should

emphasise on building products and global brands through component and device system, and software level innovations. The country is yet to produce a strong global technology brands like Samsung or Xiaomi or IBM.

3.1.3 On agriculture-Diversification

It is also necessary to look at agriculture once again focusing on raising its productivity. The GDP growth rate in agriculture was less than 1%,till about 1990's but rose marginally to 1.3% by 2014-15. This is very strange for India, being predominantly a land, forest and water based country. There are still enormous opportunities to make the agricultural sectors to grow.

More specifically product diversification is the required policy now, taking crop agriculture to poultry and meat industry, to food processing, horticulture, floriculture, plantation and commercial agriculture. All these activities require introducing alternative irrigation systems (drip and lift irrigation etc.); development of cold storages; infrastructure for quick transport up to the ports; use of solar energy in food preservation, processing, packaging; establishment of consumer friendly food parks and so on. Agricultural policy changes such as removing restrictions on inter-state mobility in marketing agricultural products, introducing GST regimes, and easing land acquisition are some of the policy drives. Many FDI investors like Kellogg, Nesle, Kraft, Tetrapak and others have tried their hands in India, and found that the processing standards in India are not upto the international marks. According to the Global Competitive Report, on 'local supply of quality and quantity of materials', India stand around 72-78 in rank out of 189 countries, indicating not too attractive business environment for bidding FDIs competitively (WEF, 2015). If only improvement in doing business in India, processing quality standards are established, packaging, and fast transporting infrastructure are developed, India can capture the world market with considerable value additions and employment growth in agriculture. Skill development in processing, and FDI flows and transport infrastructure development are the major avenues on this front.

3.1.4 Raising investment rates

On the investment front, Indian industries have been lagging far behind other competing countries like China and S Korea. For instance China has consistently maintained 45-46% of GDP as the rate of gross capital formation, where as for India it has dropped from 36% in 2011 to 31% in 2014 in India. It is therefore, a major challenge for India to boost investments as part of Make in India package. Even after introducing a globalization and privatization process since 1991, the private corporate sector in India has not picked up their responsibility to raise industrial growth in India. The gross fixed capital formation by private corporate sectors was of the order of Rs. 6450 billion in 2009-10, but dropped to Rs. 6017 billion by 2012-13 (www. Indiastat.com). The GDP share of gross fixed capital formation by private sectors in India stood at about 22%, as against the total share of 33% (World Bank, 2015).

There are some reasons for this. Because of major focus on controlling the inflation rates, the RBI raised its repo rates gradually from 5.5% in July 2010 to 7.25% in 2015. Correspondingly the Bank rates also increased from 6.0% in 2009 to 8.25% in 2015. Things have changed since then. The year-on-year WPI inflation rate now however, remained negative for the 10th consecutive month and dipped to -4.95% in August 2015, from 3.9% in August 2014. The CPI inflation rate eased to 3.7% in August 2015, compared to 7% a year ago (EPW, September 19, 2015, p.77). Now that both the wholesale and retail prices have been brought under control, it is time for the RBI to raise the incentives for the investors, by reducing the Bank rates. In September 2015, however, the RBI reduced the Repo rate by 50 % points, which is a healthy sign for the investors.

3.1.5 Foreign Direct Investments

Next to raising the industrial base and targets, the major issue is about changing the input structures. Two major input streams are FDIs and labour. With recession the world over, topping up by enhancing FDI flows into India is an opportunity now. So far, India has been very poor in attracting FDI flows; could attract FDI to the tune of

about 1.7% of GDP only, where as China has consistently been receiving about 3.7% (World Bank, 2015). Between 2000 and 2014 Indian FDI inflows went up from 18 to 29 US$ billion. Taking clues from the Chinese experience, this rate needs to be doubled, taking the annual flows to about 60 US $ billion for the next ten years.

Several major policies on this front have been announced recently in the budget of 2015-16. Enhanced FDI approvals upto 49% of investment have been permitted in the sectors like Defense, petrochemicals, cable networks, air transport sector, private security agency; 74% as the cap in air transport services, satellite establishment and operation, credit information;100% in construction, railways, telecom, single-brand retail, insurance, pharmaceuticals, petroleum refining by PSUs, courier services and so on (DIPP, 2015). Apart from creating opportunities for FDI inflows, a fair business climate has to be created. India's business rankings are as low as 142, with its rank going down, and that of China at 3 (World Bank Group, 2015; see also Figure 6 for various factors affecting this rank for India and China). It is high time to make the business climate transparent, accountable to efficiency and fairness.

3.1.6 Employment creation

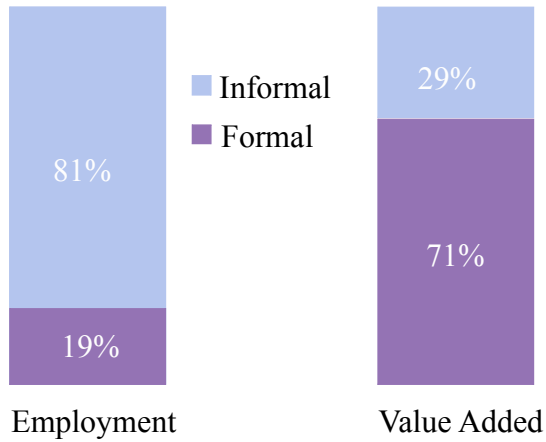
Talking about employment, India has been labeled as having a Jobless growth (Raveendran and Kannan, 2009). While labour force growth rate is about 2.5%, the employment growth rate in the recent period has been less than 1.5%. India's labor force will grow by almost 10 million workers per year for the next 10 years. Industrial off take has been about 7.5 million per year. But, the agricultural employment has been falling at a rate of about 5 million workers per year in the last decade (NSSO, 68th Round). The latest survey information can be viewed from Figure 5.

With the proportion of workers engaged in agriculture going down to about 47 per cent, (from 80% during 1960's then contributing about 50% to GDP) the sector is now contributing 16% to GDP. The migration of labour force to urban areas in search of jobs has added many new problems, apart from the rate of unemployment. Currently, the share of employment in manufacturing is about 13%, with its

contribution to GDP at 26%(IHD, 2014). The employment elasticity of GDP growth rate has been coming down from a range of 0.35 to 0.44 in the 1990s to close to 0.2 in the 2000s (Economic Survey, 2015,vol.1, p 11). The role of labour force is inversely related to its contribution to the growth rates in India, as can be seen from Figure 8.

The overall labour force work participation rate is just about 40% in India, indicating a grave situation on employment front. Of the 474 million Indians who are gainfully employed, only 100 million do manufacturing jobs compared to 232 million who work on farms and 142 million employed in the services and businesses. On comparison, the employment share of Industry in Korea and China were of the order of 30%, whereas it is much less than 23% in India, in manufacturing still much less (World Bank, 2015).

Figure 8 : Manufacturing Contribution to the Economy, 2012 (percentages)

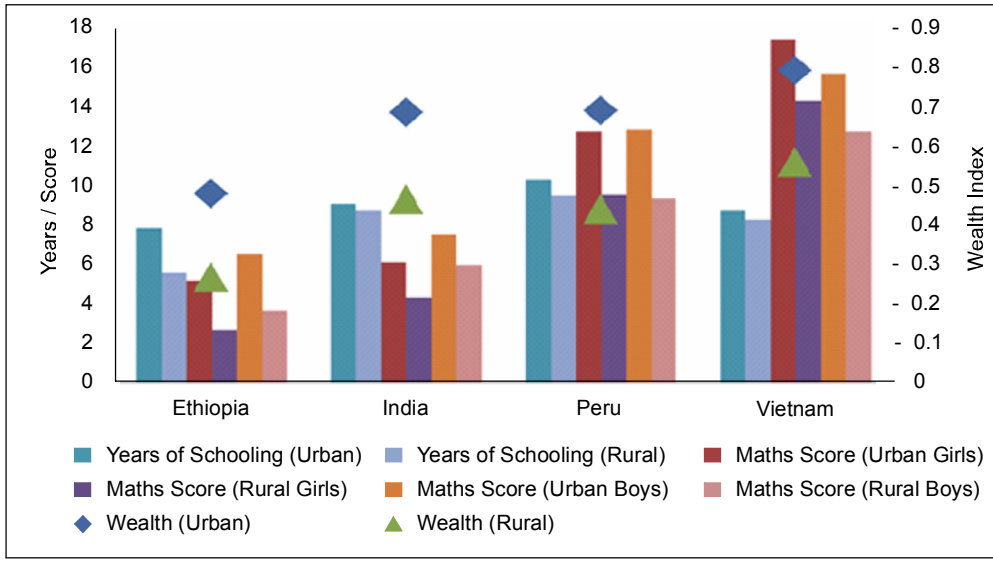


Source: 68th Round of the National Sample Survey and National Accounts, Ministry of Statistics.

What should be done about this pathetic employment situation under Make in India? Some lessons from China are important here. China, ever since her reforms since 1978 brought in flexibility to its labour markets and handed in much freedom to the management at the local and decentralized level. Secondly, way back in 1980's China realised the potential benefits from skill development reforms with technical, vocational education and training system. China has a strong program on vocational, educational and training at the secondary level in higher education institutes; vocational training in training centres, adult training and retraining, training of vocational trainers, and financing as well as industry participation. 'At the end of junior-secondary level, students have to take the senior high school entrance examination called the "*Zhongkao*." This score determines the entry into general or vocational streams' (Mehrotra et al., 2015). Moreover, the involvement of enterprises is mandated by the 1996 Vocational Education Law. In China, between 1980 and 2001, the proportion of secondary vocational school students among total secondary students increased from 19% to 45% (Mehrotra et al, 2015).

Employment and labour policy in India, should therefore, aim at three job market reforms. The first is to accommodate the continued shift of workers out of agriculture. Second, Indian labour laws are very rigid on closure, or laying off, and about restrictions on female labour employment etc. Industries are therefore, opting for down sizing the employments, and going for temporary and contract labour instead of permanent labour, also to overcome labour union problems. Outsourcing rates have increased over the years. A move has been initiated recently to consolidate as many as 44 labour laws in to just five, so as to bring more ease, flexibility in hiring and firing, and transparency in employment creation. A major reform in this direction is necessary now. The third most important reform required about employment creation is on skill development among the labour force in India. As per the Economic Survey of 2015 (vol.1, p.110), the share of labour with average skill levels (i.e., with a minimum of secondary education) has been only 24.8% in manufacturing and 47.8% in Service sector. According to a recent report from UNESCO, India is lagging behind on many attributes of skill levels (such as years of schooling, Scores in mathematics; Figure 9).

Figure 9 : Comparative picture of India, Ethiopia, Peru and Vietnam in Schooling and Cognitive skills



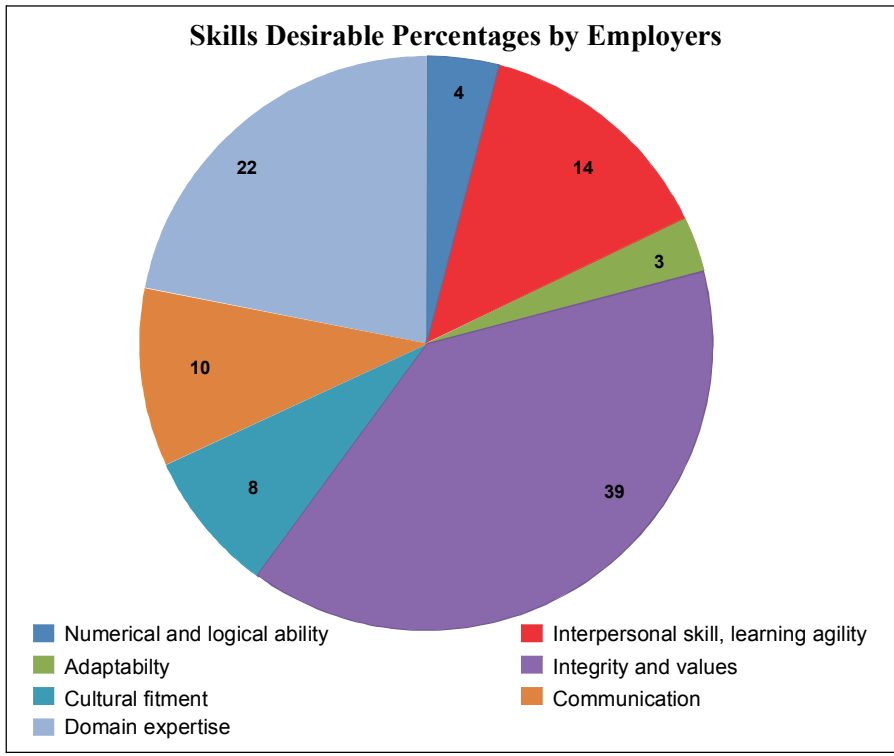
A recent survey by PeopleStrong (2015) indicates the preferences of potential employers being most for Integrity and values (39%), followed by Domain expertise (22%), as can be seen from Figure 10. Some of these employment quality aspects be kept in mind in redesigning the education system.

'Skilling India' has the potential to make India a Lewisian economy with more skilled labor to raise the productivity along with labour absorption (Economic Survey, vol.1., p.115). Before shifting them from agricultural sectors to the industrial job markets, incentives be created on some job training, and certification should be introduced (Rusell, 2014). Reforms in educational curriculum with involvement of the industries in school education, training and retraining and timely guidance to parents and guardians are the major steps in this direction.

On employment front, the lessons for India are clear :

- First, to reap the benefits of the demographic dividend, available to India. It is crucial that a skill development program for the workforce is introduced.
- Second, it is not sufficient to make education free for all till the age of 14. But, it is also necessary to introduce a vocational, educational and training, as a component in secondary education through an Act, as done in China.
- Third, industry should be compulsorily involved in vocational training and retraining.
- Fourth, as recommended in the twelfth Five Year Plan, fellowships and stipends should be reserved mainly for such vocational trainees.
- Finally, a National Training Fund be created out of professional taxes being collected by the state and central governments (see, Twelfth Five Year Plan, Chapter 22: Employment and Skill Development, which talks about this).

Figure 10 : Skills Desirables (Source: PeopleStrong, 2015)



Summarily, on the domestic production front, the major challenges for the Industry sector, therefore, are: boosting manufacturing by over 10-15% growth rate and creating additional employment to a tune of 60-78 million over a decade, and raising the share or manufacturing in GDP to over 25% (CII, 2014, p. 6). These according to CII, are achievable targets by 2030. Doubling the FDI flows to a tune of US $ 60 billion for the coming ten years, need to be built in to take advantage of global recession for investments in India.

3.2 Take-off on export front

Next to taking major steps on domestic production front, one should look at the external trade for the success of Make in India mission. For this the trade portfolio needs to be examined. Indian has been, by and large a current account trade deficit country over the last 60 years, where as China was always in surplus. Such a trade pattern is a continuous threat for the stability of Indian currency against world leading currencies such as US$ or European Euros. According to the Global Competitive Report of 2014-15, India ranks fourth in terms of its export market opportunities. But Indian actual exports have been performing quite poorly with her exports as a %of GDP rank at 113 out of 148 countries. Clearly, India has not been able encash her full export potentials.

History of export trade is worth examining. During the early phase of planning in India, as a policy, it was 'import substitution' that dominated, and not export promotion. China on the other hand, right from the beginning of their planning era in the 1950s', focused mainly on capturing exports as an avenue for development. As can be seen from Figure 11, China was always much ahead of India on exports (as a % of GDP). In a way, China used the economic logic of 'Take-off' by using its export potentials, during the periods when India was concentrating on boosting domestic manufacturing (as part of Import substitution policy).

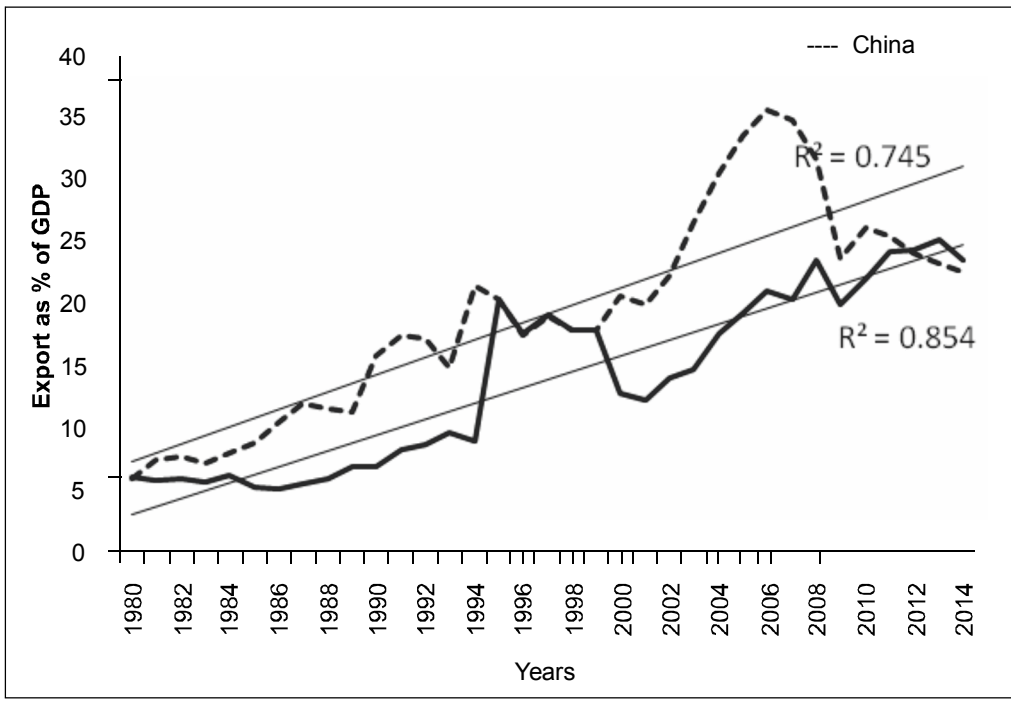
The second major lesson for India from her trade patterns is missing a grand opportunity to boost exports when the world was going through major recession during 2009 onwards. In terms of Terms of Trade, India had an edge over most of the

exporting countries then. But after picking some additional export trade in the year 2009-10, India's terms of trade deteriorated subsequently, with no major shifts in annual exports (See Figure 12).

Thirdly, over the years since 1990s', Indian basket of exports has changed, with its manufacturing share coming down from 81% to 61% in recent years (see Table 2).

According to the Global Competitiveness Report for the year 2014-15, clearly India is losing its competitiveness (with her rank in 'Export as % of GDP' at 113 out of 189 countries in 2014-15) vis-a-vis major export led growth countries such as China and S Korea. It is reported that 'prevalence of trade barriers' has been a major hindrance (India ranking at 100 out of 189 countries).

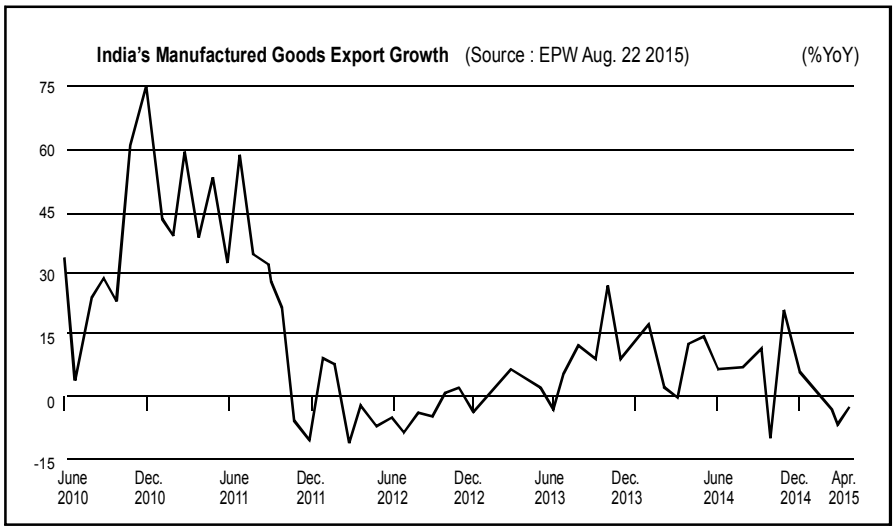
Figure 11 : Export as percentage of GDP of India and China from 1980 to 2014



Source: World Development Indicators, 2105

Within manufactured export products, the composition has undergone a significant change from traditional labour-intensive products like textiles and readymade garments, leather, and gems and jewellery to more modernised, mechanized engineering goods like automobiles, auto parts, capital goods and polyester yarn. The share of traditional exports like textiles (including ready-made garments and leather products has come down from 33% and 5% in 1999–2000 to 17% and 3% in 2014–15, respectively (Dasgupta, and Kumar, 2015).

Figure 12 : Indian Manufacturing Exports: 2010-2015



Given its long standing experience, and also the labour potentials, it is high time India returns back to the labour intensive exports listed above. Labour-intensive segments like garments and leather also require significant job skill trainings. Skill development is also most needed in export packaging, shipping trade services. Though a member of WTO, India remains isolated as a trading partner, with little prospect of a free trade deal with ASEAN and SAARC countries, and the European Union.

Table 2: Product Composition of Export Goods (% Share)

	1999–2000	2004–05	2008–09	2011–12	2013–14	2014–15
Total exports	100	100	100	100	100	100
Petroleum	0	8	15	18	20	18
Agricultural and allied	15	10	10	12	14	13
Ores and Minerals	2	6	4	3	1	1
Manufactured Goods	81	73	67	61	63	67
Other commodities	1	3	4	6	2	1

Source: CMIE Data and CPR And EPW Aug. 22, 2015, p.24

4. Make in India for Defence Sector

There is a specific reason to talk about defense sector in the context of Make in India. Next to agriculture, defence is perhaps the largest homogeneous sector in terms of its capital investments and manpower deployments. That apart, economics of defence preparedness is not to be driven merely by pure economic motives such as profitability, or static considerations such as utility during peace time versus war time. For this, the purpose of defence activity are to be recollected as: (1) public good in character providing national security (2) a repository of state power, and (3) Strategic and operational services in international relations. Because of these, one does not actually know how to measure the output of this important sector.

Adam Smith, the founding father of Development Economics, in his celebrated book : *An Enquiry in the Nature and Causes of Wealth of Nations* (1776, Book 5, chapter 1, part 1), has a chapter on 'Of the expenses of Defence', where he argued:

"The first duty of the sovereign, that of protecting the society from the violence and invasion of other independent societies, can be performed only by means of a military force. But the expenses both of preparing this military force in time of peace, and of employing it in time of war, is very different in the different states of society, in the different periods of improvement" (Smith, Adam, 1776, Vol. II, Book 5, p. 182).

Later, in the same book he wrote on the need of 'military personnel and establishment as a separate entity from citizenry and other civilian activities' (as a distinct societal arrangement from the ancient system of 'hunters and gathers also

being warriors'; or as in the mythologies of Mahabharata and Ramayana- all citizen also being nothing but army). He goes on to say to treat this sector exclusively with 'specialization and division of labour' as the economic drives. According to him, 'Evolution of army as a separate from civilians, and delegating responsibility for civilians to pay taxes and soldiers to protect the citizen' are the institutional frameworks for promoting the wealth of nationals. That certainly is an economic argument of paying for national security and integrity.

Therefore, Make in India Mission has rightly included this sector as a target sector. India spends about 2.06% of GDP on defence, whereas it is 3.1% in Pakistan, and it is 2.5% in China (SIPRI, 2015). During 2014-15 as a share of central government expenditure, defence expenditures in India stands at 12.8%, as against 19.5% in Pakistan. It should also to be noted that Indian defence expenditures as a share of total central government expenditures have declined from 16% during 1980's (Economic Survey, Statistical Tables, 2015).

Much before the 2014 Make in India Mission, as back as in 2006 Ministry of Defence had introduced a 'Make' policy for defence purposes (Cowshish, 2015). Subsequently, in 2011 a Defence Production Policy was introduced to bring about substantive self reliance in design, development and production of equipment/ weapon systems/ platforms required for defence in a timed frame, and also creating conditions conducive for the private industry to play an active role in this Endeavour, to enhance potential of SMEs in indigenization and to broaden the defence R&D base of the country.

Again, in 2013, a Defence Procurement Procedure (DPP) 2013 was established, with preference being given to indigenous design, development and manufacture of defence equipment. By now, Indian defence sector has several options under 'Make in India' on defence procurement requirements, namely,

- Buy : This can include both buy Indian (with atleast 30% indigeneous contents) or outright foreign : Not available locally, small requirements, production through transfer of technology is not financially viable ;
- Buy and Make : Not available in the country, but required in sufficient numbers, the route of transfer of technology financially and technically viable, followed by indigeneous manufacturing ;
- Make (Available in the country or could be manufactured in the Country, technology known ; more applicable to critical components.

Some of the major reasons to adopt Make in India more specifically for defence sectors can be listed (DIPP, 2015, p. 141).

First, India's current requirements on defence are largely met by imports. Being a strategic sector, it is time that India pursues more planned and faster Import substitution policy. Indian defence manufacturing establishments should take on the 'Buy and make' option with foreign original equipment manufacturers to enter into strategic partnerships. This strategy will also push the domestic markets (including SMEs), raises domestic capabilities, and boosting exports in the long term.

According to *Stockholm International Peace Research Institute (*SIPRI), India is currently the world's largest arms importer, accounting for 14 per cent of global arms imports during 2009-13. India spent a whopping Rs. 83,458.31 crores on arms imports in a matter of three years ending 2013-14, amounting to about 0.30% of the GDP of India during those three years, or 1.93% of Central government expenditures (development and non-development expenditures) (Behera, 2015b).

Second, promoting self-reliance, indigenization, technology upgradation, achieving economies of scale and developing capabilities for exports in defence sector were on the cards for a long time (e.g., Kelkar Committee of 2005). Though in terms of market size, India ranks third highest, in terms of technological readiness the rank is 121 (WEF, 2015). The degree of self-reliance in defence production sector has been coming down from about 48% in 2006 to 38% by 2011 (Behera, 2015d).

Third, global arms trade is increasingly becoming a two-way process. Instead of the traditional off-the-shelf procurement involving goods/ services being exchanged for money, more and more arms buyers are now demanding that some form of work should also directly flow from the contracts they sign with foreign agencies. The flow back arrangement in the contract is widely known as offsets. Even countries like USA have been entering upto 80% on offset contracts. Offsets include co-production, investment, and technology transfer (Behera, 2015c). Opportunities to avail defence offset obligations to the tune of approximately US$ 4000 million during the next 7-8 years exist. The Indian offset policy (which stipulates the mandatory offset requirement of a minimum 30% for the procurement of defence equipment in excess of US$ 48 millions) will enable domestic manufacturers an opportunity to grow on competitive basis.

There is a lot for the defence sector to learn to be well up in productions and procurements. Application of 'Learning by doing' theory also makes one to learn to reduce delays and cost over-runs in defence projects. The delays and slippages are not to be tolerated when it comes to defence preparedness.

Keeping all these, the Make in India program has made very specific provisions for boosting investment and productions in this vital sector. The notable ones are (DIPP, 2015,p.5):

> FDI up to 49% allowed with certain conditions (such as offsets, which is a global practice now), for an Indian company owned and controlled by resident Indian citizens. Provision also exists for 'Above 49%' routed through the Cabinet Committee on Security on a case-to- case basis, Portfolio investments have been permitted in the Defence sector for up to 24% on automatic route. A number of conditions have been relaxed or removed, making the sector more investor-friendly.
>
> The provision for technology transfer which would help in increasing the production base and providing impetus to the manufacturing sector and job creation in India. The measure is expected not only to reduce the heavy

burden of imports and conserve foreign exchange reserves but also make domestic manufacturing competitive.

Yet, there are some special issues to be addressed and resolved in applying Make in India for defence. The notable ones are:

There is a big question mark about the role of DRDO. Has the country lost its trust with premier institutions like DRDO (established way back in 1968) and eight other defence public sector undertakings ? The 'Buy and Make' option may become an impediment on this front.

Should Make in India throw open the door for investment opportunity to all starving global companies? How to search for efficient suppliers?

Does this program conflict with domestic indigenization program?

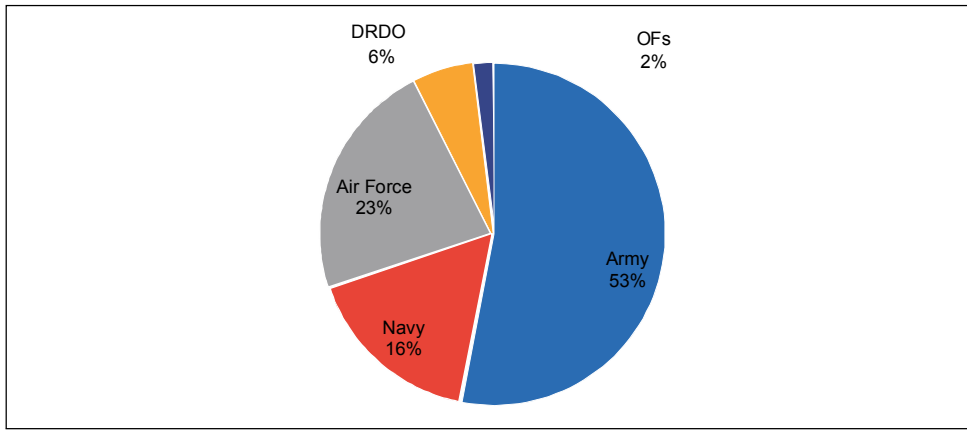
Given the fact that India has a very low rating of 142 for 'Ease of doing business', what is the guarantee that global vendors will turn to India, vis-à-vis Pakistan or China (SIPRI, 2015)?

What are the answers? On several matters the house needs to be put to order.

First. Several evaluation reports on DRDO and defence public sector undertakings suggested measures to improve the offtake for this vital sector (Behera, 2009). Delay in completion of the project (e.g., Light Combat Aircraft, LCA), continued dependence on external inputs, low R & D base, cost over runs, incompetent skilled technicians, lack of business compliances and governances are cited to be the continuing ills (see Picture 2 for a delayed warship launching).

Second, DRDO's own budget share in total defence budget is around 5-6%, as can be seen from the Figure 13. This needs to be raised substantially to about 10% to maintain both long term and short defence researches.

Figure 13 : Share of Defence Services in Defence Budget 2015-16
(Source: Behera, 2015)



Picture 2 : Dedicating INS Kolkata to the Nation on 16th August 2014.

Notes for the picture: It is just one day after the Prime Minister announced the Make in India Mission in New Delhi, that at Mumbai, he commissioned this incomplete project on warship, with its missing main Long range Surface to Air Missile (fabricated under the joint venture with Israel), and Towed Array Sonar System,. It took 14 years to reach this stage of completion.

- Third, while the armed forces are interested in acquiring equipment in the shortest possible timeframe without being too concerned about where it is acquired from, the DRDO, the premier R&D agency of the Ministry of Defence (MoD), seems to be content with endless design and development efforts, with scant respect to timelines and the sanctioned budget. DRDO should adopt a two tier policy of long term Research and research for turn-key development projects.

- Fourth, there are serious concerned about skilled and trained scientific manpower in defence research and production. According to Behera (2015a) the number of scientists in DRDO has not increased since 2001, although the number of projects has increased exponentially, with the organisation currently pursing 44 major projects (each costing over Rs 100 crore) worth Rs. 39,560 crores. Only 10 per cent of the scientific manpower had higher qualification of Ph.D. According to one estimate, the aerospace industry in its three verticals– manufacturing, and maintenance, repair and overhaul (MRO) – alone will require an additional manpower of over 185,500 by 2022, justifying the necessity to set up a dedicated defence technology university (Behera, 2015a).

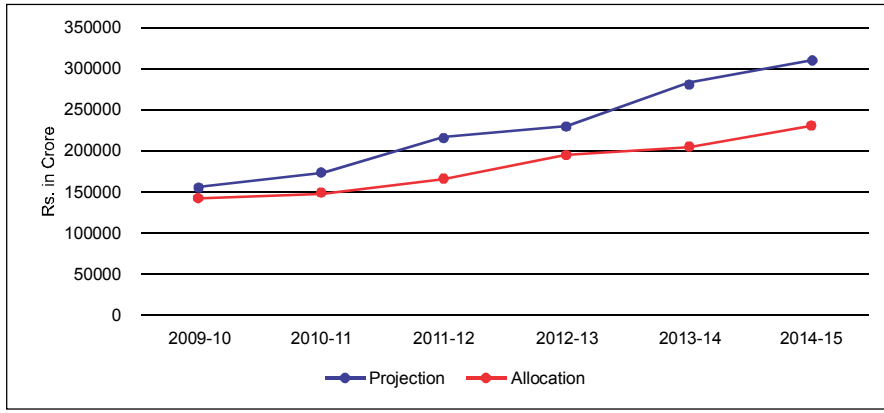
- Fifth, there is a need to change the mind-set and treat the private sector as an equal partner.

- Sixth, there are some unequal risk bearing attitudes on the part of defence procurements. As per Defence Procurement Procedures (DPP), local private companies winning contracts under the 'Buy (Indian)' category are required to bear all the risks associated with exchange rate variation (ERV). As per several estimates, taxes and duties can raise the cost of local products by as much as 20 to 25 per cent (Behera, 2015a).

Finally, and this is important, that the Indian defence sector operates in a hostile financial framework. While the defence budget allocations hover around 12-13% of central government budget, the total subsidy budget at the central government level

is about 16-17%. As noted earlier, Indian ratings on ' access to financing' has been extremely bad (WEF, 2015). Considering defence economic and national security aspects, the budgetary provisions should meet atleast the anticipated rates of escalations (see Figure 14). Make in India defence budget should take note of already committed capital expenditures, and make additional allocations for newer projects.

Figure 14 : Gaps between Project and Actual Budget Allocations to Defence



While re-emphasizing the need to take on reforms in the defence sectors, one may recall what a Chinese thinker, Sun Tzu wrote in the book: Art of War (written in 544-496 BC, in 512 BC) : 'All warfare is based on deception; The highest form of generalship is to balk the enemy's plans; Do not repeat the tactics which have gained you one victory'.

Therefore, defence sector require continuous monitoring within Make in India Mission.

5. A Macro Policy on Make in India

Operationalising Make in India requires very committed long run policies drives :

Consider the lessons from China. Decentralisation helped China grow rapidly in many ways. Regional governments are best informed on local issues; regional governments can process information on local issues more and better than the centre; and decentralisation allows institutional changes on an experimental scale, thus sparing disruption to the rest of the economy. Though, India has adopted *Panchayat Raj* institutions at the district, taluka and village levels, their limited success and failures are due lack of vigilance and monitoring (Dutta et al., 2014). Identifying the skills at the grass root level and designing production and development activities should be made flexible, to be monitored by village *panchayats* and *gram sabhas.* A cluster approach can be tried out to fix the responsibilities to different villages from a *gram panchayat* on production, processing and marketing of the products. Once again the lessons from China and Japan on this model are very important.

Many major committed policy reforms are required at the macro level, some of which are summarily listed below (substantially reproduced from Rajan, 2014, 2015).

> At the infrastructural level, physically linking every corner of the country to domestic and international markets through roads, railways, ports and airports is the first and foremost step. The FDI as well private sectors should be fully explored on this front. A cluster approach can be deployed to identify the mega, major, minor and nucleus cities, towns, villages, and linking them with good transport networks.
>
> Furthermore on infrastructure, ensuring the availability of inputs such as power, minerals, and water at competitive prices is the second most important step. Decentralised material supply centres be created. Successful Chinese experience on these are to be looked into.
>
> Financially linking everyone, be they householders, business persons, traders or managers to the broader macro system through mobiles, broadband, and intermediaries such as business correspondents. Some major steps on this have already been initiated, by linking the entire population of India through *Jan Dhan Yojana*.

Development of public institutions such as markets, warehouses, regulators, information aggregators and disseminators, etc., more and more at decentalised levels should be expedited. Once again, FDIs may be invited to share their knowledge and experience on this.

On human capital front: skill development should be given the priority, at the very early stage of school education. Industries should be involved in identifying and vocational training for employment directly in the enterprises. The scope of the National Skill Development Corporation should be expanded fast, to cover village and town level studentships.

Make for India requires a reduction in the transactions costs of buying and selling throughout the country. Tax reforms such as GST and computerized tax collection, refund of export subsidies etc., should be implemented as a priority.

The best form of financing is long term equity, that is, Foreign Direct Investment (FDI), which has the additional benefit of bringing in new technologies and methods. More flexibility can be added.

World is growing more slowly, and is more inward looking, than in the past. But India has a large domestic market to be tapped first for our growth – to make in India primarily for India.

In the end, it is time to use Make in India as an avenue for reintroducing a 'take off' with industrialization as a priority. In a recent interview, Dr. Kaushik Basu of the World Bank stated: "It is expected that India will top the world's growth rates table of major economies this year. This has not happened before. It is possible for India today to consolidate its position in a way that it never could before. A 10% growth seems unlikely, but a sustained 8% per annum growth is possible. And that will transform the nation in twenty years, with per capita income breeching the $10,000 mark…. I would tell the Prime Minister – and in fact I did tell him, during a very good meeting I had with him on the Indian economy – that India is on the cusp of a major take-off and we must not miss this opportunity".- Interview to the Hindu on 8th September 2015.

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Appendix

AN ECONOMIC MODEL OF MAKE IN INDIA

A simple economic model is formulated here, just to demonstrate the development gains from Make in India program. Some of the basic assumptions made here are :

1. There is surplus labour in the economy, with wage rigidities in the agricultural sector; labour productivity in agriculture is very poor and below subsistence wage. There is a modern sector outside of the agriculture sector, consisting of two production activities- Manufacturing (M) and Tertiary Service (S).

2. Labor is quite willing to migrate to the modern sector-be it for the manufacturing or Service sector. Examples of such labour movements to service sector are - transport sectors, packaging, labeling, head load transporting, security services, courier services; likewise to manufacturing sector are- for mechanical works, handling and loading, polishing, scrubbing, painting, washing, some assembly line works, weaving, ginning and so on.

3. Surplus Labour migration to the urban modern sector will not reduce the output in the agricultural sector, but rather would improve its productivity (these follow from Lewis, 1954 model).

4. The economy is an open economy with external trade prospects. Being a small country (in terms of outputs, as compared to global players) the economy's production decisions are based on the given international terms of trade (price line; ToT). If P_S and P_M stand for the prices of service and manufactured goods, their ratio stands for the terms of trade between the two.

6. All the resources such as capital, labour, infrastructure etc., are tradable elastically between these two production activities.

In brief the economics is described as follows: Given the resources to be used fully, the economy has a profile of possible production possibilities on these two sectoral outputs, M and S.

Given the international price structure for these two sectors the level of productions are determined by the price efficiency, optimally; likewise the best attainable welfare/utility level determines the combination of the two goods and services in consumption. The domestic productions are determined optimally by the condition that 'marginal rate of transformation (MRT^S_M) in production is equal to the international terms of trade'. What follows from these optimal decision on production and consumption are the possible trades on the two products.

Decision rule for optimal productions: $MRT^S_M = \partial M/\partial S$ (on the production frontier) $= P_S/P_M$:

The economy also has a well defined utility or welfare preference ordering expressing the trade-off in consumption between these two goods and services. The economy being an open economy, has the option of producing domestically or importing/exporting the combination of the two production lines. The maximum utility is reached when the 'marginal rate of substitution (MRS^S_M) in consumption is equal to the price term of trade.

Decision rule on consumption: $MRS^S_M = \partial M/\partial S$ (on the Utility frontier UU) = P_S/P_M

Introduction of Make in India program enables both the modern sectors to grow in a number of ways. Flow of FDIs, skill development of the labour force, creating an environment of 'Ease of making business', and transfer of technology are some of the major ones. Accordingly, the changed market and production structure, change the resource endowments both quantitatively and qualitatively. Then, both the sectors would take advantage of the changed production environments.

Accordingly the production profiles and levels of consumptions and trade would also change.

The economics of this model is demonstrated diagrammatically in Figure 15.

Production and consumption of the Manufactured goods are read on the X axis along the line OM, in terms of value added or GDP contribution and/or consumption. Likewise, line OS on the Y axis stands for production and consumption of Service sectors, measured in terms of their value added or GDP contribution. Under the assumptions of full utilization of all the resources, the production transformation curve between Manufacturing (M) and Services (S) is depicted by the curve PP. The law of diminishing returns or increasing costs is assumed, implying a convex shaped PP production possibility curve, with the assumptions that: $\partial M/\partial S<0$; $\partial^2 M/\partial^2 S<0$

UU stands for the economy's utility preference curve (assumed to be concave; with the assumptions: $\partial M/\partial S<0$; $\partial^2 M/\partial^2 S>0$).

Being an open economy, the internationally given terms of trade ToT between manufacturing (M) and service(S) determines both production and extent of trade between the two commodities/services. Line AA depicts the price line or terms of trade; The equilibrium production point is Q_P and Consumption point is T_P. Accordingly, The production and consumption of manufactured goods are read as OM_P of production, and OM_T as the level of domestic consumption. Since the level of consumption is higher, the difference between consumption and production (M_T - M_P) is the level of imported manufactured goods. Likewise, the levels of production and consumption of services sector outputs are OS_P and OS_T respectively. Under the open economy assumptions, this sector exports to a tune of (S_P - S_T).

At this stage, without any loss of generality, it is assumed that Make in India favours only the manufacturing sector. Also assumed is that the ToT does not change.

With the introduction of Make in India, the production possibility frontier shifts

up, for the better of the manufacturing sector. Accordingly, PR stands for the new production possibility frontier. Correspondingly, given the same international prices ToT, once again, the equilibrium conditions suggest that the 'marginal rate of product transformation be equated to the price line BB, which happens at the point W_M . Likewise, equilibrium condition that the marginal rate of consumption substitution be equal to the ToT, which occurs at the point Z_M with the new welfare unction $U_M U_M$.

New equilibrium productions and consumptions are established under Make in India now. Corresponding these, the points M_{PW} and M_{CZ} stand for the levels of production and consumption of manufactured goods; likewise, S_{PM} and S_{CM} stand for the service sector.

Imports of manufactured goods continue to be a tune of (M_{CM} - M_{PM}) ; and exports of service sector is (S_{PM} - S_{CM}). As can be seen from the Figure, the levels of production and consumption of manufactured goods are higher, equally compensating for the decline in production and consumption from service sector.

Likewise, the cases of Make in India favouring Service sector can also be analysed.

Lemma 1: With the terms of trade remaining the same even after Make in India, the ratio of imports of manufactured goods to export of service goods would remain the same.

Import of M/ Export of S = P_S/P_M

Lemma 2: If the terms of trade shifts in favour of manufactured goods, i.e., the ratio of prices of manufactured goods to that of Service goods decline, with the respect to Make in India, then the ratio of imports of manufactured goods to export of Service goods increases.

If P_M/P_S(New) < P_M/P_S (Original), then,

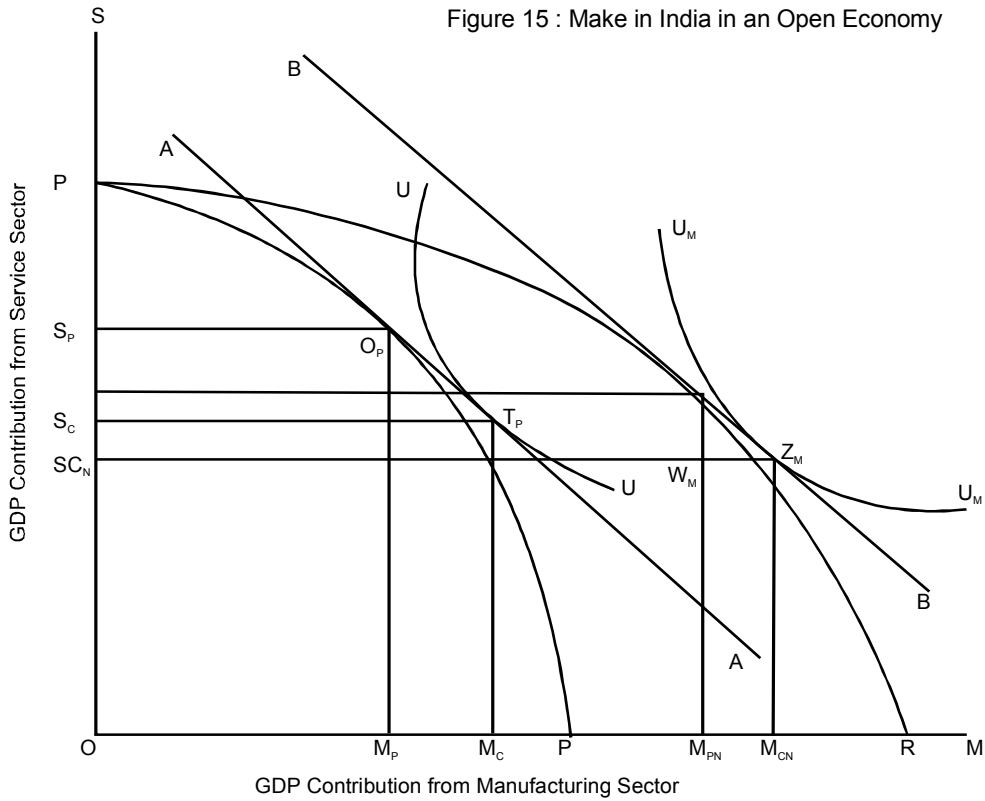
{Import of M/ Export of S} (New)> {Import of M/ Export of S} (Original)

Lemma 3: If the terms of trade shifts in favour of service sector, i.e., the ratio of prices of manufactured goods to that of service sector goods increase, with the respect to Make in India, and the ratio of imports of manufactured goods to export of Service goods decreases.

If $P_M / P_S (New) > P_M / P_S (Original)$, then,

{Import of M/ Export of S} (New)< {Import of M/ Export of S} (Original)

Figure 15 : Make in India in an Open Economy



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