Growth, Structural Transformation and Poverty Reduction: Issues and Challenges with special reference to India*

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Abstract

The present study analyses the growth-structural change-poverty linkages within the framework of the New Structural Economics using Indian data for the period since 1951-52. It finds that the relationship between growth, structural transformation and poverty reduction is complex and is characterized by various issues and challenges. It is influenced by country-specific idiosyncratic attributes as shaped by the broader growth strategy adopted by the government, its implementation, and its developmental outcomes. Failure to anticipate challenges in the development path adopted by the government is a chief cause of failure in reducing poverty. The study calls for informed state interventions to steer the economy to a sustained and inclusive development path.

*The paper is prepared for presentation at the Inter-Agency Expert Group Meeting on "Employment and Decent Work for Poverty Eradication, in Support of the Second UN Decade for the Eradication of Poverty (2008-2017)" Bangkok: 4-6 May 2016

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1. Introduction

There is overwhelming evidence that rapid and sustained economic growth is crucial for reduction in poverty. But, there are substantial differences among countries with respect to the rate at which poverty declines with economic growth (Chen and Ravallion, 2010; Fosu, 2011; Islam and Kucera , 2014 among many others). Evidence indicates that the type of processes that drive growth matters, and that the differences in these processes may explain the differential impact of economic growth on poverty reduction. The literature on growth-poverty nexus has therefore increasingly come to focus on particular growth processes and their linkages with growth and poverty.

One of the most striking developments in this literature is the revival of the structuralist economics of the Post War period that places structural change at the heart of the development process. The first generation structural theorists (Rosenstein-Rodan, 1943; Chang, 1949; Nurkse, 1953; Lewis, 1954; Myrdal, 1957; Hirschman, 1958) highlight the centrality of capital in the growth process and place the shift of resources from labour to capital intensive modern sectors at the core of the growth process. However, the 'New Structural Economics', as it has come to be known as, emphasises that growth has poverty reducing impact if it ensures that a country's productive resources, including its labor force, are directed to increasingly high productivity activities. An expansion of more productive and dynamic sectors can push the economy into a virtuous circle in which the growth of productive employment, productive capacities and earnings mutually reinforce each other to accelerate growth and reduce poverty. Following the emergence of this thinking, there has been renewed interest in the impact of structural change on growth (Pasinetti, 1981; Kendrick, 1984; Maddison, 1987; Notarangelo, 1999; Fagerberg, 2000; Montobbio, 2000; Verspagen, 2000; Echevarria 1997, Stamer 1998; Dietrich 2009; Cortuk and Singh 2010; Macmillan and Rodrik, 2011) as well as poverty (Sundaram and Tendulkar 2006; Zapenda et al., 2007; Essama-Nssah and Bassole, 2010; Teal 2011 among several others). However, the relationship between growth, structural transformation and poverty reduction is complex and is characterised by issues and serious challenges. Its success varies across countries which the existing literature attributes to country centric factors including the business climate (Hasan et al 2013); pro poor policies of the government (Cook, 2006); International aid (Page and Shimeles, 2015); investment in high productivity sectors(Teal, 2011); education or capital market imperfections.

For deeper insights, the present study provides an empirical analysis of the relationship between growth, structural transformation and poverty with special reference to India. Of late, there is a proliferation of inter-country analyses. But, they do not fully capture idiosyncratic attributes of individual countries. With emphasis on an understanding of the issues and challenges that a country can face in the process of growth structural change and poverty reduction, this study conducts a country specific analysis. It

reveals that broader growth strategies and their implementation policies shape the relationship between growth, structural change and poverty reduction.

The term 'structural change' has been used in economic research with different meanings and interpretations. Following the standard approach adopted in development economics, it is defined here as changes in the distribution of economic activity and productive factors among various sectors of the economy.

2. Structural Change, Growth and Poverty Reduction: Issues and Challenges

Economic growth in developing countries is intrinsically tied to dynamics of its production structures, which bring about growth through the expansion of value-added and employment in higher productivity sectors at the cost of lower (See, Kucera and Roncolato, 2012; Aggarwal and Kumar , 2012; Islam and Kucera, 2014 for literature review). When labour and other resources move from less productive to more productive activities, the economy grows even if there is no productivity growth within sectors (Mcmillan and Rodrik 2011). Structural change thus removes constraints from productivity growth. Typically, in a developing economy labour productivity in primary sectors is relatively much lower than in non-primary sectors. It means that a shift of resources from the primary to non-primary sectors is growth enhancing. This type of structural change can contribute significantly to poverty reduction by raising income levels of both, those get absorbed in the more productive sectors and those remaining in agriculture. A large number of studies have appeared worldwide analysing structural change in employment as a mechanism of sustained growth (see for example, Islam 2004; Melamed et al. 2011; Mcmillan and Rodrik 2011; Naudé et al. 2014; Roncolato and Kucera, 2014). Economic growth accompanied by structural change in income and employment should in turn have positive effects on poverty reduction (Page and Shimeles, 2015; Hasan et al, 2012; Cook, 2006). Thus, economic growth that is accompanied with structural change generates productive employment, improves earnings and contributes to poverty reduction. However, the relationship is not simple.

There are three important underlying mechanisms of this process. The first mechanism is a rapid rise in agricultural productivity that not only releases labour from agriculture but also keeps the prices of food products under control for the process of industrialization to proceed without constraints. A dynamic agriculture raises labor productivity in the rural economy, pulls up earnings, and gradually reduces absolute poverty. This process may be reinforced by the migration of work force from agriculture to more productive sectors which may release some of the pressure put on agricultural productivity and have some direct poverty reducing effect through raising agricultural incomes. Thus, a decline in the relative importance of agriculture to the overall economy does not mean that the sector requires no support and that it may be neglected as a low productivity sector. Rather, it means that the sector needs earnest attention to initiate and sustain the process of industrialization. In the process, due to much higher productivity in non-primary sectors, its relative importance declines. Over time, productivity of the primary sector converges with that of other sectors with a relatively small workforce remaining in

the sector.

A second underlying mechanism of this process is that the structural transformation of employment accompanies that of GDP. Due to rapidly rising high-productivity non-primary sector incomes, agriculture may be rapidly losing its shares in the GDP when its share in labour force may be declining relatively slowly. But an expansion in the more productive sectors at the cost of the less productive sectors (in terms of value added) may result in a net reduction in employment. Where the displaced workers go can have an important impact on poverty outcomes. If it generates unemployment and informality (McMillan and Rodrik, 2011 for Africa and Latin America), it can put downward pressure on wages. This in turn can have poverty enhancing effect in terms of both absolute and relative poverty. There is thus a tendency of sectoral income distribution to worsen during the early stages of the structural transformation and unless growth triggers transformation in employment structures, poverty will worsen. Thus productive employment represents a crucial channel through which income derived from growth can be widely shared.

The final underlying mechanism of this growth process is a mutually reinforcing relationship between growth and poverty reduction. While growth is a necessary condition for poverty reduction, it itself will not be sustainable unless it is accompanied by poverty reduction. Lower poverty levels can actually improve growth prospects by a variety of channels. Rising income levels among people living in poverty will stimulate demand for domestic products and increase employment and production. Better health, nutrition, and education outcomes will enhance human capital formation and increase overall labour productivity, causing higher economic growth. In a similar vein, more equitable distribution of income may act as a material and psychological incentive to widespread public participation in the development process (Todaro, 1994). It is therefore well recognized that rapid elimination of absolute poverty, under all forms, is essential for a sustainable growth process.

The challenge for the developing countries is to address these challenges to successfully achieve the target of poverty reduction with economic growth. The process of globalization has complicated this process further by posing new challenges. First, the tendency of GDP to shift from primary to non-primary sectors without being accompanied by commensurate changes in the employment structure is now extending much later into the development process due to weakening of the agriculture-industry linkages. The possibility of importing agricultural items to sustain the urban population and increasing capital intensity of production processes has adversely affected the linkages between agriculture and non agricultural sectors. Thus agriculture is neglected and in the absence of demand for labour in non-primary sectors, labour tends to be absorbed into low-value activities in the urban informal sector where prospects for improving productivity and incomes are limited. One body of empirical evidence maintains that urban migrants have been able to escape poverty even when they could not graduate to the formal sector (Banerjee, 1986; Mitra, 1994; Papola, 1981). But, another body of literature suggests that poverty reduction is more apparent when people move into the rural non-farm economy after they

leave agriculture (Christiaensen and Todo, 2014). Evidence from 51 countries during 1980-2004 indicates that the development of the rural economy and development of small town might be more poverty reducing than employment generation in industries in larger cities (Christiaensen et al. 2013; and Christiaensen and Todo 2013). The third body of literature highlights the role of the government sponsored direct distributional packages in reducing poverty. Behrendt (2014) finds that well-designed and sustainably funded social protection measures reduce poverty, enhance capabilities and improve employability of the poor which may sustain the growth process. Overall, the extended time gap between the structural change in GDP and structural change in employment needs to be addressed by appropriate strategic interventions. A second challenge posed by globalization is that services are growing unprecedentedly faster than manufacturing and industry in most countries in the initial stages of growth itself, defying the conventional thinking. It is often argued that the resource reallocation of productive manufacturing industries towards services might eventually dampen productivity, increase costs and prices, and slow down economic growth (Baumol's cost disease hypothesis). However, of late, many argue that there are high productivity market service sectors such as the financial sector, software services, transport and logistics and retail sales and distribution where there are major productivity improvements, often based on ICTs. The argument is that globalisation of these services provides many opportunities for late-developing countries to find niches where they can be successful along global value chains. Countering this argument some voice concerns over the weak linkages of export oriented high skill services with the rest of the economy and their potential in driving the growth process (UNCTAD, 2004 for discussion). Others argue that much depends on how the potential created by the explosion of services is exploited by policy makers (Ghani and Kharas, 2010).

The upshot is that there is no simple relationship between structural change, growth and poverty. There are significant issues and challenges that need to be addressed while explaining this relationship. The success of a country in poverty reduction depends on how these issues and challenges are addressed. In what follows I focus on the Indian experience. The theme of this research is that the challenges and issues that arise in the growth-structural change-poverty reduction paradigm are conditional upon the macroeconomic policy regime or broader growth strategy (or development path) adopted by the government. The growth strategy inherent in the policy regime shapes the economic actors and their decisions. These in turn affect the outcomes of the growth process. Countries, where policy makers anticipate the issues that economic actors might face in the development path, and address them with informed policy making are likely to be more successful than others.

3. The Indian Experience

The past 65 years of India's growth history have been marked by two broad policy regimes marking the 'state- led' and 'market led' strategies of growth. Each of these two regimes was associated with a distinct set of economic policies. In each policy regime two to three distinct phases of policy approaches can be discerned. The first thirty years 1951-1980 were associated with the state-led model

of growth with the public sector occupying the commanding heights of the economy. Import substitution and heavy industrialisation constituted the major planks of the growth strategy. During the first 15 odd years of this regime, the focus had been on achieving high rates of growth, but from 1967-68 onwards, the issues of aggregate poverty, income distribution and hunger dominated the agenda of the policy makers.

The turning point occurred in1980-81 when industrial and trade policies were reoriented from growth-with-social justice to growth-with-efficiency with a clear shift in favour of the market-led growth regime. Sweeping reforms which assigned the commanding heights to the private sector have, however, only been introduced since the early 1990s. Economic reforms of the 1990s also marked a distinct shift from an import substituting to export oriented regime. In 2005-06, another major change was introduced in the policy approach when 'inclusive growth' was adopted as a major plank of the market-led growth strategy and the government launched several social protection programmes including a employment guarantee programme called 'MNREGA', national rural health mission (NRHM), national health insurance programme (RSBY in 2008), and more recently a food security programme.

Since these five distinct phases of policy approach are associated with very different growth and distributional policies, roles of the State, and crises and contingencies, they also produced very different growth, structural transformation and distributional outcomes.

Policy Regimes and GDP Growth Patterns

Table 1 shows the growth rates and GDP at factor cost across the two broad policy regimes. There are clear differences in the growth rates and output volatility across different policy-regimes. It may be observed that the policy regime changes of the 1980s and 1990s were associated with significantly higher growth rates and reduced volatility. However, it was in the post 2003-04 period that the economy witnessed unprecedented growth (Aggarwal and Kumar 2014).

Table 1: GDP growth rate: 1950-51 to 2011-12

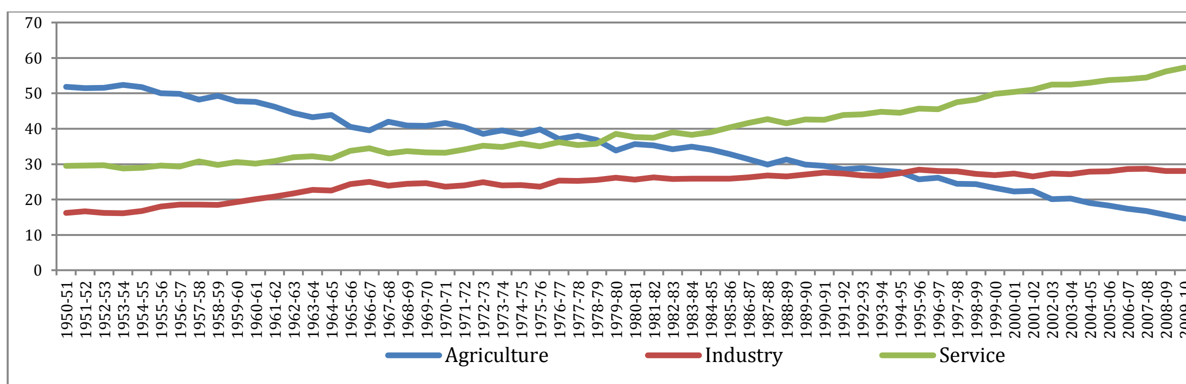
Years	Average annual growth rate (%)	Standard deviation
1950-51 to 1964-65	4.091	2.55
1965-66 to 1979-80	2.93	4.18
1980-81 to 1991-92	5.39	2.22
1992-93 to 2011-12	6.96	1.77
1991-92 to 2003-04	6.2	1.46
2004-05 to 2011-12	8.3	1.40

Source: Own calculations based on Central Statistical Organisation, Ministry of Statistical Planning and Implementation, India database

Structural Transformation in GDP

Economic growth under the two policy regimes has been associated with two distinct patterns of structural change in GDP. Figure 1 depicts GDP shares of the three sectors: agriculture, industry and services for the period from 1951-52 to 2011-12. The economy experienced a massive transformation in the composition of GDP during the state-led policy regime. Consistent with theoretical expectations there was a shift from agriculture to industry and services. But towards the late 1960s the GDP structure started slowly shifting in favour of services. This expansion was led by community services and public administration, usually termed as Baumolian stagnant sectors; industry started slowing down.

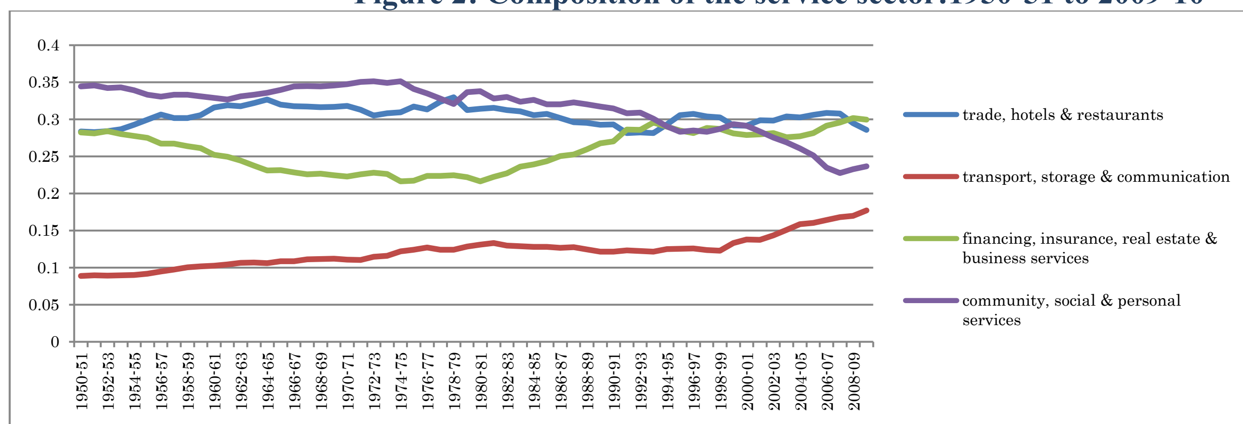
Figure 1: Composition of GDP: 1950-51 to 2011-12 (% share)



Source: Own calculations based on Central Statistical Organisation, Ministry of Statistical Planning and Implementation, India database

The share of agricultural sector continued to erode rapidly during the market led regime with Industry managing to increase its GDP share by a meagre 2-3 % points. The rapid erosion in the share of agriculture was thus matched by acceleration in the service sector share. But, what differentiates this regime from the previous one is not merely the speed with which the service share grew but also the composition of services which exhibited a distinct shift from the Baumolian stagnant sectors to more dynamic sectors such as transport, communication, business services (including ICT) and financial services. Since 2004-05, communication, business services, and financial services have been the drivers of the GDP growth in India. India has been able to move into the new activity drawing on a large pool of skilled labour which was created due to India's education and science and technology policy adopted since the late 1950s (Aggarwal, 2001). On the other hand, the traditional trade, hotels, community, and public administration services shrunk in importance. This is shown in Figure 2.

Figure 2: Composition of the service sector:1950-51 to 2009-10



Source: Own calculations based on Central Statistical Organisation, Ministry of Statistical Planning and Implementation, India

Employment Growth

The differential growth of GDP across different sectors of the economy has had obvious impacts on the rate of growth and structure of employment (Table 2). During the 1970s, total employment almost consistently grew at a compound annual rate of well above 2% per annum. The growth rates had been 2.7% and 2.1% during 1973-78 and 1978-83 respectively (not shown here). As the economy shifted from the state-led to market-led regime, the employment growth rate started declining. What is more worrisome is the fact that in the high economic growth phase of 2004-05 to 2011-12, employment growth rate declined more sharply. Over the period of 2005-2012, only 13 million new jobs could be added at the rate of 0.4% per annum. Per capita income rose at the rate of 6% during this period. Clearly there was delinking of growth and employment ('jobless' growth) in the Indian economy in the market led growth phase.

Table 2. Employment indicators: 1973 to 2012

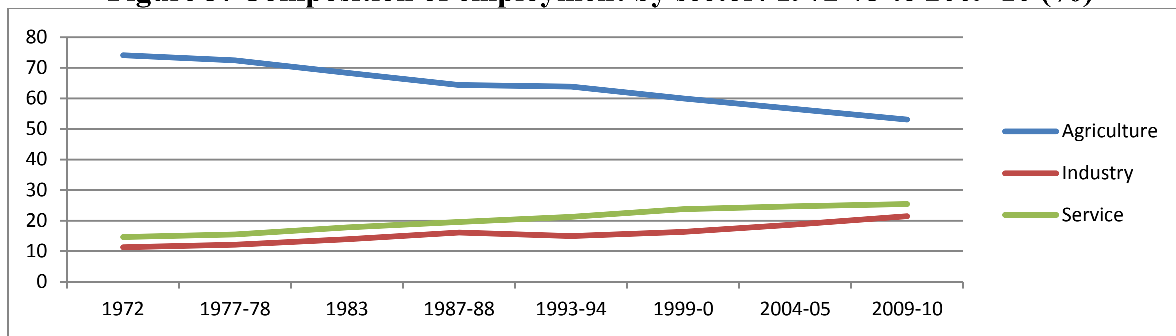
As on 1st March	% of population			Annual Compound growth rates (%)			Elasticity
	Workforce Participation Rate	Labour-force Participation rate	Unemploy ment	Employ ment	labour force	Unempl oyment	
1973	41.3	41.98	1.6	-	-	-	-
1983	42.0	42.8	1.9	2.4	2.4	4	0.52
1994	42.0	42.8	1.9	2.1	2.1	2.2	0.47
2005	42.0	43.0	2.3	1.8	1.9	3.7	0.30
2012	38.6	39.5	2.2	0.4	0.4	0.1	0.05

Source: Authors calculations based on NSS rounds

Structural Transformation in Employment

Figure 3 presents the long-term sectoral composition of the work force starting from 1972-73. It shows that the growth process and a dramatic structural change in the composition of GDP, involving a shift from the primary sectors into services (see, Figure 1), has not entailed an equally dramatic change in the employment structure. Employment shifts did occur with agriculture losing its share in employment as well. However, it lagged considerably behind the structural change in output. As shown in Figure 3, agriculture, which contributes 14% of the GDP remains the largest employer absorbing almost half of the work force (53%). On the other hand, services that contribute almost 58% of the GDP absorb only 26.6% of the workforce.

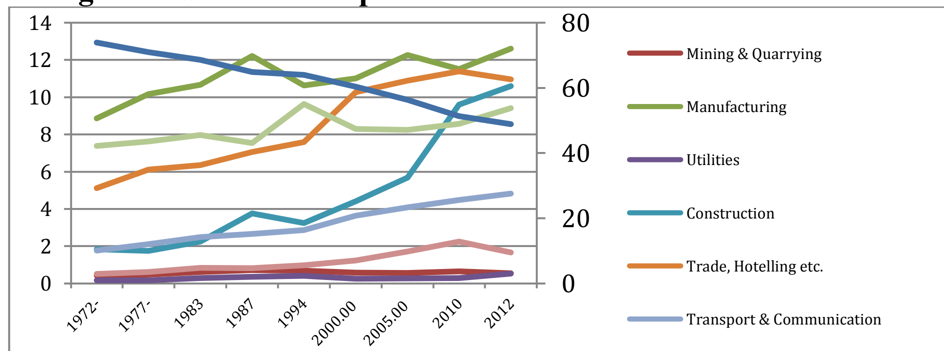
Figure 3: Composition of employment by sector: 1972-73 to 2009-10 (%)



Source: Own calculations based on NSS rounds on Employment and Unemployment and CS

Figure 4 shows that despite the rapidly growing shares of the dynamic services in GDP, most labour force is in Trade and Hotels and Community Services, the Baumolian Stagnant sectors. The share of industry in employment more than doubled from 11.3% in 1972-73 to 24.6% in 2011-12, but essentially, it was due to increasing employment in construction. The share of construction in total employment increased from around 2% in 1972-73 to over 10.5% by 2011-12. Manufacturing managed to maintain its average share at around 12% since the late 1980s.

Figure 4: Sectoral composition of workforce: 1972-73 to 2011-12



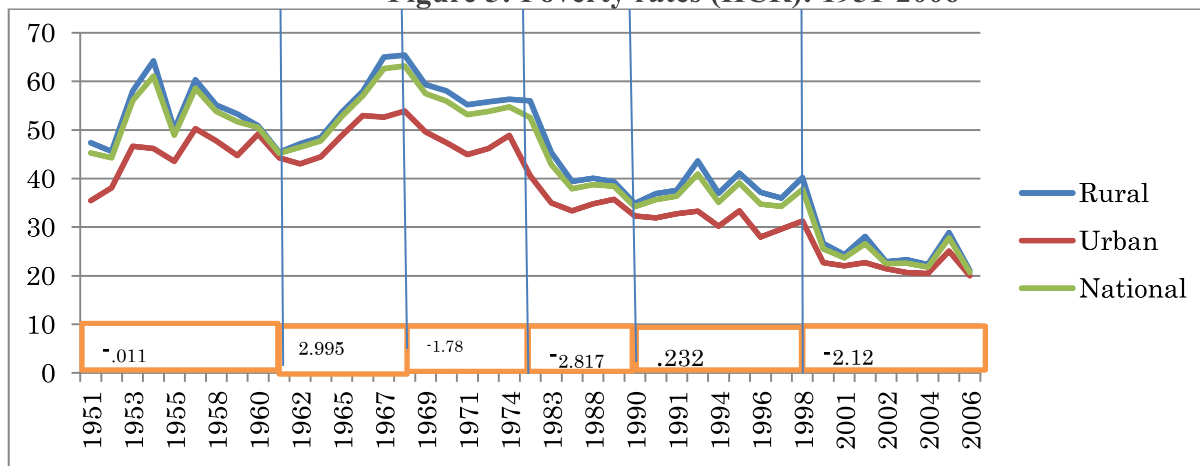
Source: NSS rounds

In sum, the labour market restructuring has not been commensurate with the restructuring of GDP. While GDP has been driven by business services, financial services, and communication, employment was created in construction, trade and hotels, community services, and transport. Apparently, much of the labour released from agriculture has been absorbed in the construction and ‘trade and hotels’ sectors where employment has been expanding rapidly. The employment profile of India remains very similar to that of low-income countries and is characterised by high employment in agriculture and other low productivity sectors such as construction, and trade and hotels. These sectors account for over 70% of the total workforce in India. While the share of dynamic services increased in value addition employment creation remained laggard in these sectors.

Poverty Reduction

A general picture of poverty reduction over the last half-century in India that emerges shows that while the growth phase of the first and a half decade of planning had an adverse effect on poverty despite high growth rates, the welfare phase of the state driven growth model is associated with sharper poverty reduction. This led to a fierce debate on trade-off between growth and poverty in India. However, growth acceleration of the 1980s turned out to be poverty reducing. Poverty reduction trends continued in the 1990s and 2000s. But the poverty reduction rates decelerated, leading once again to concerns about the sustainability of growth with poverty reduction.

Figure 5: Poverty rates (HCR): 1951-2006



Source: Based on Datt and Ravallion (2010)

Table 3 presents poverty rates at selected points using different measures. It supports the observations made above. Poverty reduction rates decelerated in the 1990s and 2000s. It may also be observed that rural poverty aggravated in the post 2007 period in particular rural areas. This is despite the fact that the government had adopted the approach of inclusive growth in 2005.

Table 3: Poverty estimates 1973-74 to 1993-94

	Head count (%)			Poverty gap (%)			Squared Poverty Gap			Gini coefficient	
Year	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
1973-74	56.4	49	54.9	16.56	13.64	15.95	6.81	5.26	6.48	0.27	0.301
1983-84	45.7	40.8	44.5	12.32	10.61	11.96	4.78	4.07	4.61	0.3	0.33
Average annual difference	-1.07	-0.82	-1.04	-0.424	-0.303	-0.399	-0.203	-0.119	-0.19	0.003	0.0029
1993-94	37.3	32.4	36	8.45	7.88	8.3	2.78	2.82	2.79	0.28	0.34
Average annual difference	-0.84	-0.84	-0.85	-0.387	-0.273	-0.366	-0.2	-0.125	-0.18	-0.002	0.001
2004-05	28.3	25.7	27.5	5.8	6.2	5.8	1.76	2.0	1.76	.306	.376
Average annual difference	-0.82	-0.61	-0.773	-0.241	-0.153	-0.227	-0.093	-0.075	-0.09	0.002	0.003
2009-0	33.8	20.9	29.8								
Average annual difference	1.1	-0.96	0.46								

Source: Data Table, Planning Commission http://planningcommission.nic.in/data/datatable/index.php?data=datatab

The upshot is that the growth strategy adopted in the first policy regime did accelerate growth to 4% from almost zero under the British rule. But it was associated with enhanced poverty rates in the country. This created crisis like situation and the government had to change the policy approach to address the issue of poverty by directly focusing on the welfare measures. A shift to the market led growth process in the second policy regime had a large effect on poverty initially, but the effects started dissipating soon as the economy entered an accelerated growth regime. Therefore, a sizeable population continues (30%) to remain below the poverty line. The problem was aggravated further by an upward movement of the "Gini" coefficient, which measures inequality. In what follows, we explain these outcomes under the two policy regimes in India.

4 The structural transformation-growth- poverty paradigm in India: The story untold

The State-led Policy Regime

Keeping in view high poverty rates and an urgent need to push economic growth to get people out of poverty, the country adopted the strategy of heavy industrialization with import substitution and extensive state control on the economic resources as two defining characteristics of the regime. Huge public sector investments were made in the heavy industrial sector in the belief that it would also drive growth in the service and agricultural sectors through backward linkages and generate new jobs. Consequent upon the growth strategy, there was a steep rise in capital formation in the industrial sector

at the cost of both agriculture and service sectors. The strategy paid off and produced an unprecedented spurt in industrial growth during the 1950s and early 1960s as shown in Figure 1. However, the rate of industrial growth started decelerating towards the mid 1960s (Shetty, 1978; Bhagwati, 1993; Nayyar, 1994; Virmani, 2006; Acharya, 2006). The reason was that the state-engineered expansion of industry faced constraints on both demand and supply sides. On the demand side, a high degree of disproportionality in investment patterns favoring the industrial sector resulted in stagnation of the agricultural sector which had an adverse effect on demand for industrial products. Agriculture, which was the source of livelihood for nearly two-thirds of India's working population, constituted a major source of demand that time. Thus, prices moved upwards diverting the demand from industrial to agricultural products. On the supply side, among other factors, stagnation of agriculture affected the pace of industrialization by driving up the prices of inputs to major traditional industries of the time like cotton and jute textiles, sugar, vegetable oils and tobacco which constituted almost two-thirds of the sector.

A core mechanism underpinning the structural change –growth-poverty paradigm is ‘enhancement in agricultural productivity’. Since this mechanism could not be triggered, food and raw material prices increased sharply pulling down the rate of both economic growth and industrialization after a brief period of spurt. The rapid growth rate was indeed accompanied with a structural change in GDP, in line with the theoretical expectations. Yet, the structure of employment remained unaffected. In 1972-73, three fourth of the population was still in agriculture. Industry absorbed only 9.5% of the work force. Apparently, heavy industrialization strategy based on capital-intensive techniques did not generate a sufficient number of jobs to trigger migration of labour from rural to urban areas. Apparently, the second mechanism underpinning the growth-poverty relationship also failed to operationalise, and the outcome was increased impoverishment of both, the rural and urban population. Since growth had negative effects on poverty reduction, it could not be sustained. This marked the failure of the third mechanism (Section 2).

In the late 1960s, Government diverted its attention to agriculture and strengthened the distributional policies to directly address the issue of poverty. Along with the introduction of new (HYV) technology in agriculture, several employment generation and poverty alleviation programmes were launched during 1966-1980. A major success of this phase was the achievement of self reliance in agriculture. However, all this came at the cost of cut back in public investment in industry, which created not only demand side bottleneck but also constrained supply side responses for the industry to grow. While demand for industrial product started rising, there was no incentive structure in place to respond to the stimulus due to heavily regulated private investment. Thus the pace at which the industry was growing slowed down while the service sector, particularly 'public administration and defense (consequent on two wars)' and community services experienced fast growth pushing up the share of the service sector. These are called stagnant services, which are characterized by low productivity. Despite some retrogression in the GDP structure, there were significant productivity enhancing changes in the

structure of employment. Due to improved agricultural productivity, labour tended to migrate from agriculture and was observed in diverse sectors. As a result, intersectoral relocation of labour had a large significant positive contribution to growth (Aggarwal, 2014). However, this expansion in employment across diverse sectors came at the cost of efficiency (mainly in the government sector). Intra-sectoral productivity declined during this period except in agriculture. It appears that the government expanded employment, which was not dictated by the productivity considerations. Thus, poverty declined sharply despite low economic growth rates, due mainly to a sharp increase in agricultural productivity, productivity enhancing structural change in employment, and poverty elimination programmes of the government.

The Market-led Regime

The early 1980s saw recovery in the GDP growth due to both policy changes and external factors, but which crucially featured a pick-up in GDP growth supported by all the three sectors. Industry grew at an average growth rate of 6.1% in contrast to 3.9% growth in during 1965-80 owing to improvements in both the rate of investment and productivity (Kohli, 2006a, 2006b., Trivedi et al. 2011; Rodrik and Subramanian 2004). This period also witnessed very favorable growth rates in the agricultural sector due mainly to the diffusion of private tube-wells, agricultural diversification towards more remunerative commodities and technological breakthroughs (Fujita, 2010; Joshi et al., 2006). Nonetheless, the share of agriculture in GDP decline; the share of industry did not appreciate either. It was because the service sector expansion outpaced its growth. Within services, there had been a noticeable shift away from the low productivity Baumolian sectors namely community services and public administration to high productivity business and financial services followed by trade and hotels. But, all this had an adverse effect on employment structure and its growth. Three relatively low productivity sectors, namely construction, trade and hotels, and community services, and to some extent transport and communications absorbed most labour during this period and the contribution of inter-sectoral relocation of labour to economic growth was lower as compared with the previous period. (Aggarwal, 2014). Poverty rates declined sharply but it was mainly due to intra-sectoral productivity growth, which in turn was due to increased investment in all the sectors (Aggarwal, 2014).

The post 1990 period witnessed an explosion in the service sector, which had already started growing rapidly, especially with the rise of growing exports of software and ICT-enabled services following the success of Indian companies in fixing the Y2K bug. The composition of services has thus continued to change in favour of the modern and dynamic services namely transport, communication, financial and business (including the software and related) services. On the other hand, the traditional trade, hotels, community, and public administration services have shrunk in importance. India appears to have developed competitive advantages in services, due to the presence of a large pool of skilled labour,

which the education and technology policies adopted in the early phases helped create. That India did not enjoy competitive advantages in industry is amply demonstrated by the near stagnant industry share. A poor investment climate, poor infrastructure, unfavourable attitudes towards large-scale industrialisation, rising costs, and scarcity of land have been the major obstacles to the promotion of industry which many believe may have serious implications for the future growth potential of India. The rapid growth in highly dynamic and value added 'services' led to a sharply skewed structure of GDP in favour of services at low levels of income. But growing activity in these sectors was not able to absorb labour released from agriculture. It had to be absorbed in construction and other baumolian stagnant service sectors. Thus the contribution of inter-sectoral relocation of labour continued to decline. Despite the government policies of inclusive growth, it fell further during 2005-12. The quality of employment showed no indication of improvement either. The proportion of regular salaried workers remains stagnant at around 16% (Table 4). Almost 84% of the workforce remains self or casually employed.

Table 4: Distribution of usually employed by category of employment (UPSS) (%)

Years	Self-employed	Regular/wage Salaried	Casual labour
1993-94	50.77	16.03	33.09
1999-00	55.98	16.13	27.88
2004-05	51.89	16.39	31.71
2009-10	53.22	16.76	30.03

Sources: NSS Report No. 537: Employment and Unemployment Situation in India

In addition, most jobs created under the market-led policy regime have been in the informal segment (see, Table 5). In the informal sector productivity and wages both are lower than in the formal segment as discussed in the previous section. The population working in this sector is termed as vulnerable workers by the ILO.

Table 5: percentage share of informal employment by sector 2004-05 and 2009-10

	2004-05				2009-10			
	Rural		Urban		rural		Urban	
	Male	female	Male	female	Male	female	male	female
Agriculture	90.4	97.2	86.8	94.9	90.6	95.0	88.3	97.7
non-agriculture	78.1	77.1	73.7	63.5	73.0	64.1	68.3	60.1
Overall	79.2	86.4	73.9	65.4	74.2	74.4	68.5	61.6
Total	81.6		72.2		74.2		67.3	

Source: NSS report on Informal sector and employment conditions, 2011

Growth has indeed been accompanied by important reductions in poverty levels largely due to increased productivity during the 1990s and 2000s. But a sizable population still remains stuck in poverty. The lack of structural change in the right direction seems to have impeded the poverty reducing effects of growth. In China which has been one of the most successful example of structural change, poverty rates fell sharply from 67% in 1990 to 11% by 2014. In India, the figures have been 45% and 22% respectively (the World Bank database).

Structural change and poverty

To investigate the effects of structural change on aggregate, urban and rural poverty measures, the poverty rates are regressed on the variables representing per capita income, structural change and government transfer payments. While the per capita income captures growth, structural change index reflects the change in the sectoral composition of GDP. Government transfer payments are used as a proxy for the welfare programmes of the government. The poverty ratios are not expected to be stationery at level. We therefore used the first difference in poverty for the analysis after the appropriate tests. The model used is: ‘

POVCH= a1+ a2 *GRTH+ a2*STR_CH+ +a3*WELFARE+a4 PRICEIN+θj+μi

Where, PRICEIN is the GDP deflator used as a proxy for general inflation.

In addition, we used some in interactive variables as well. To capture the effects of other time trended variables, we included four time dummies (θj): 1951-52 to 1959-60; 1960-61 to 1969-70; 1970-71 to 1983-84; 1983-84 to 1993-94; 1993-94 to 2007-08 also. Table 4 summarizes the results in testing the poverty reducing impact of the structural change in GDP. The major findings are as follows. First, the negative relationship between economic growth and poverty is confirmed, in particular for the urban areas. Second, the growth in transfer payments also appears to have poverty dampening effects, but more significantly in the urban areas. Third, the structural change index is insignificant even if it appears with a correct sign. Fourth, industrial growth and in particular manufacturing growth has significant poverty reducing effects in rural areas (Lanjouw and Murgai, 2009;World Bank, 2009; Mallick,2012; Christiaensen and Todo, 2014; Ravallion, Martin & Datt, Gaurav, 1996.). This is an important finding and indicates the necessity of diversifying the rural areas. Finally, after controlling for other variables, a high rate of growth with structural change may exacerbate poverty in India. This is because the structural change in India is not poverty reducing. In a nutshell, growth along with welfare packages are central to urban poverty reduction while industrialisation, in particular manufacturing emerges a key variable affecting rural poverty.

Table 6: Regression results based on OLS: National poverty model

Variables	National Poverty			Urban Poverty			Rural Poverty		
Per capita income growth	-148.8 *(-2.55)*	-142.2 *(-1.67)*	-28.01 *(-1.44)*	-130.22 *(-3.37)*	-91.97 *(-1.63*	-33.78 *(-1.98)*	-153.1 *(-2.2)*	-157.5 *(-1.6)*	-27.0 *(-1.2)*
Manufacturing growth		-217.8 *(-2.32*			-65.26 *(-0.81*			-259.3 *-2.3)*	
Structural change Index (SCI)	-1.55 *(-1.28)*	-0.66 *(-0.65)*		-1.31 *(-2.06)*	-0.61 *(-1.12)*		-1.6 *(-1.1)*	-0.7 *(-0.6)*	
Change in Industry share			-2.48 (-1.87)			-0.96 (-1.19)			-2.9 (-1.9)
Change in Service share			1.05 *(0.8)*			0.41 (0.44)			1.2 (0.8)
Rate of growth of Transfer payment(TP)	-11.76 *(-1.69)*		-13.35 (-1.88)	-12.90 (-2.24)		-12.76 (-2.13)	-11.4 (-1.4)		-13.4 (-1.7)
Per capita Income*SCI	48.42 *(2.18)*	47.56 (2.27)		39.01 (3.04)	34.98 (2.68)		50.4 (1.9)	50.3 (1.9)	
Growth in TP* Growth in income		15.45 (0.06)			-169.61 (-0.89)			37.1 (0.1)	
Growth in TP *SCI		-3.64 (-1.49)			-3.64 (-1.34)			-3.6 (-1.4)	
Industrial price index	-0.64 (-0.64)	-0.57 (-0.56)	-0.75 (-0.8)	-0.48 (-0.96)	-0.53 (-1.02)	-0.52 (-1.11)	-0.7 (-0.6)	-0.6 (-0.5)	-0.8 (-0.8)
Constant	5.87 (1.8)	3.73 (1.31)	2.02 (1.25)	5.87 (2.62)	3.52 (2.05)	2.37 (1.85)	5.9 (1.5)	3.8 (1.1)	1.9 (1.0)
F-test	3.02	3.91	2.80	4.07	2.93	2.39	2.2	3.2	1.7
R2	0.17	0.24	0.16	0.27	0.28	0.19	0.1	0.2	0.2

Source: Aggarwal and Kumar (2014)

5. Conclusion.

The study analyses the growth-structural change-poverty linkages within the framework of the New Structural Economics using Indian data. The analysis offers important insights into the relationship between growth, structural change and poverty reduction. Two major lessons learned are as follows. One, the broader national development strategy and economic policies to implement it are critical in determining the incentives and constraints for economic actors and shaping economic outcomes. Therefore the performance of a country in achieving growth, structural transformation and poverty reduction needs to be analysed within an overall context of these economic institutions. Second, there is no simple or uniform recipe of success. If policy makers choose the right strategy based on their own competitive and comparative advantages, envision successfully the challenges inherent in the national strategy adopted for growth, and design appropriate implementation policies to preempt them, they are more likely to succeed in achieving the objective of poverty reduction. Thus, appropriate state interventions based on their own economic attributes are critical for the process of structural transformation and poverty reduction. India for instance, adopted a heavy industrialization based

growth strategy and overlooked agriculture at the time when a large chunk of population was stuck in low productivity agriculture sector. It met with disaster. However, by focusing on higher education and technology in the initial stages of growth it helped in creating a pool of highly skilled young population, which became instrumental in bringing about service revolution based on the dynamic services in the market-led regime. Nonetheless, the impact of economic acceleration triggered by high productivity services on poverty reduction remained limited with a large population still stuck in agriculture. We have shown that to address the challenge, the government will need to address the insufficiency of labour demand together with the poor quality of existing employment. It is crucial, then, that the development trajectory allows for employment-intensive growth and that specific measures are taken and implemented regarding social protection. This will necessitate a targeted industrial policy that seeks to promote manufacturing and ensures that increased investments translate into changes in the patterns of employment. More significantly, we highlight the role of rural based industrialisation in reducing poverty. Improving access to formal credit markets in rural areas is crucial to encourage or 'crowd in' private investment, growth and poverty reduction. A strategy of public investment in infrastructure and in human development can aid private investment and growth. We have shown that job creation by industrial expansion is clearly the way forward along with redistributive policies to solve the problem of high poverty rates.

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