

Deceleration of Industrial growth and Rural Industrialization Strategy for Indian Punjab

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Sustained industrial growth has been widely acknowledged as an engine of economic transformation. Less developed countries, however, remained predominantly agrarian due to lack of dynamism in the industrial economy and the low level of industrialization. Economic policy reform programme was initiated in July 1991 to generate essential dynamism in the industrial sector for successful transformation of the agrarian economy of India. In this paper an attempt is made to examine the industrial growth experience of Punjab economy during the period 1980-81 to 2001-2002, that is a decade before and a decade after the initiation of economic reforms. The empirical evidence clearly show a downturn in industrial growth in the post-reform period compared to that of the pre-reform period. Factors that have contributed to the deceleration of industrial growth in Punjab were lower investment-GSDP ratio, lower plan expenditure and lower quality of human capital and infrastructure. These factors were making the state scarce in economic activities and lacking in private corporate investment, both of domestic and foreign variety. Alternative strategy has been suggested which not only has the capacity to arrest the process of deceleration of industrial growth in the state but also has a capacity to transform agrarian economy to an industrialized one along with raising the level of employment, rural income and welfare.

1. Introduction

Industrialization is the central dynamic force in the process of economic growth of an economy. The development experience of advanced countries and the newly industrializing economies has shown that industrialization is the only way through which general level of living standards can be continuously improved upon. Their success story reveals the fact that the governments of the advanced and newly industrializing economies continuously developed and implemented appropriate policies that created a conducive and congenial environment for industrial progress. However, the development experience of the less developed countries, the backwardness and low-level of living in such countries, is a clear pointer to the lack of dynamism in the industrial economy in particular and low level of industrialization in general. This led to the realization in less developed countries to change their industrial policies from inward-looking to outward-looking so that required dynamism in the industrial economy can be generated. Within less developed countries, the growth experience in some of the regions after initiating economic reforms, however, has shown dynamism in their growth structure albeit to a limited extent. Indian Punjab is one such state/region which has shown an above average rate of growth in general and industrial growth in particular. However, this fast rate of economic growth could not be sustained due to limited progress of its

industrial sector. Economic policy reforms initiated by the Indian government have differential impact across industrial economy of different states/regions. Some of the states/region registered high rates of growth comparable to the newly industrializing countries (NICs) and others lagged behind. Punjab's industrial economy could not respond to economic policy reforms which is a cause of concern for both the academicians and policy makers. The purpose of this paper is to explore, identify and analyze the factors behind the slow industrial growth that have not allowed Punjab economy to realize its full potential. Alternative industrial development strategy is worked out to transform the rural economy of the state. The paper is developed and presented in five sections. Apart from the introductory section, economic policy reforms and limitations in the application of the reform programme are presented in section two. Industrial growth performance of Punjab in the pre- and post- reform period is presented in section three. Alternative policy for revival of industrial growth through rural industrialization for enhancing rural income is spelled out in the fourth section. Summary and conclusions are presented in the final section.

2. Economic Policy Reforms and Expected Impact on Punjab's Industrial Economy

After the demise of the centrally planned economy of USSR in 1991, the global economic management of the bi-polar world economy has shifted to a uni-polar one. Since then economic reforms, pushed by international donor agencies (IMF/WB), aims at reducing the role of state and increasing the role of markets in economic decisions. Numerous national governments of various countries of the globe now have an option only between 'Big Bang' and 'Gradualism' (Hoff and Stiglitz 2004). Indian government had chosen a path of economic reform in July 1991 to gradually reduce the role of the state to provide greater and dominant role to the market in the process of economic decision-making. Indian government dismantled controls and regulations related to the location of private economic activities to establish production units in industrial sector of the economy (Srinivasan and Tendulkar 2003). Industrial licensing policy, which had been enacted to regulate and control location of industrial activities, had been the bone of contention for quite some time due to misuse of this policy both by the Indian private capital as well as the bureaucratic-political lobbies. So was the location of public sector enterprises which was purely under state control. Therefore, the allocation of the licenses and public sector enterprises has determined the level and speed of economic development of the different states. It has been argued that Punjab state has suffered due to policy induced barriers and constrained private sector initiatives through allocation of licenses and public sector investments in the industrial sector of her economy. The reforms initiated by the Union government have been welcomed purely on the basis of expected removal of barriers and constraints by the political leadership. Thus, it was expected to unleash the constrained productive forces and flooding of investment in the state to automatically take care of deceleration of economic growth and the related problems. In addition to that, scaling down of tariff barriers for external trade and removal of restrictions on the participation of foreign capital

in the industrial sector have been assumed to fill the gap of investible resources if it exists, and in case Indian capital remains scarce, foreign direct investment will do the job. It is a generally held view that foreign direct investment brings in new technology and management practices which usually help the local private sector to emulate and therefore is a sure way to enhance the competitive capacity of the industrial economic activities, both domestic and international.

Small-scale industry, which is an important segment of the Indian economy in general and Punjab economy in particular, had received substantial protection and concessions during the import substitution regime (Mohan 2002). Reforms progressively reduced protection in terms of reservation of items exclusively manufactured by the small scale industries as well as allowing the large sector to produce and compete with small scale industry, if the large sector exports 50 per cent of its production (GOI 2004). The liberalization of imports and reduction of tariff barriers further increased stiff competition and challenge to the small scale industry. Since Punjab's industrial economy is a grooming ground for small scale industries, external and domestic liberalization was expected to put substantial constraint on this sector. An important change in paradigm of policy making under which universal applicability of market in economic decision making for alleviating all the ills of the capitalist economic system during the 1980s and 1990s (popularly known as Washington Consensus) was questioned in the late 1990s when the financial crisis was triggered in South East Asia. Around this time academic economists realized the complementary role of the state and the market as well as of the public sector. Harberger (1998) cautioned fellow economists not to recommend dismantling of the public sector for privatization until the efficiency gains of such acts are substantial. During the 1980s and 1990s growth experience of world economy in general and economies under reform programme in particular recorded substantial instability. Therefore, realization dawned on the experts to recognize the differences in the stage of economic development and institutional arrangements across countries. In fact the profit-seeking private agents, misguided by market imperfection, were mainly responsible for creating instability in economic growth and creating unprecedented economic crisis in high performing East Asian countries (Stiglitz 2002). Thus, growing empirical evidence suggested that standard recipes and sole reliance on the market for efficient allocation of resources and economic development can do more damage than good to the economy. Turnaround in the thinking of economic policy making, where state and market are regarded as complementary rather than competitive, was reflected not only in the discussions in academic circles but also from the documents and programmes enacted by the international financial institutions. This paradigm shift in recognizing and providing due respect to the role of state in policy making has been characterized as Post-Washington Consensus (Hayami 2003). Contrary to this, the process of policy making in most of the developing economies still reflect the Washington Consensus approach. The Punjab state is one such example. An attempt is made in the following section to examine the impact of liberalized economic policy on the industrial economy of Punjab.

3. Pre- and Post-Reform Period Industrial Growth in Punjab

Industrial economy of Punjab has expanded its base during the early green revolution period at a faster rate and contributed Rs.1546.12 crore in 1980-81 at 1993-94 prices which comes out to be 11.66 per cent of the Gross State Domestic Product (GSDP). The contribution of the industrial sector of Punjab increased to Rs. 7075.26 crore in the year 2001-02 and the share of the industrial sector in the GSDP comes out to be 16.64 per cent. The noteworthy feature of industrial development during the eighties and nineties is the rising share in the GSDP by nearly 5 percentage points. During the period 1980-81 to 2001-02, industrial economy of Punjab has grown at a steady trend rate of growth 7.34 per cent per annum (Table 1). The organized (registered) industrial sector of the economy has grown at a higher rate, that is, 8.4 per cent per annum during 1980-81 to 2001-02, than that of the overall rate of growth of the industrial sector. However, the unorganized (unregistered) industrial sector has grown steadily at 5.6 per cent per annum during the same period, which is substantially lower compared to that of the overall manufacturing sector, as well as the organized manufacturing sector growth rates. To examine the impact of economic reforms initiated by the union government of India in July 1991, we have estimated the trend growth rates while splitting the whole period into two sub-periods, that is, pre-reform period from 1980-81 to 1990-91 and post- reform period 1991-92 to 2001-02 and results are presented in Table 1.

Table 1: Industrial growth in Punjab 1980-81 to 2000-01 (1993-94 prices)

Sectors→ Years	Manufacturing Sector	Registered Manufacturing	Unregistered Manufacturing
1980-2001	7.34	8.39	5.61
1980-1990	9.32	9.29	9.33
1991-2001	5.74	6.94	3.78

Note: Trend growth rates are estimated while using the semi-logarithmic regression equation. Data used for estimates of growth rates is collected from Government of Punjab, *Statistical Abstract of Punjab*, various issues.

Punjab's manufacturing sector has grown at a rate of 9.32 per cent per annum during the 1980-90 decade, which is substantially higher compared to the whole period rate of growth. Pre-reform rate of unorganized industrial sector recorded slightly higher growth (9.33 per cent per annum) compared to the organized industrial sector (9.29 per cent per annum). Such a high rate of growth is quite significant given the backdrop of a highly volatile political situation in Punjab that prevailed during the eighties. Contrary to the belief of liberal policy makers, industrial growth has decelerated during the nineties. The rate of growth of manufacturing sector was recorded at 5.74 per cent per annum, which was below the overall rate of growth and was substantially lower compared with that of the pre-reform period. The organized manufacturing sector recorded a rate of growth of

nearly seven per cent per annum during the reform period. However, this is also quite lower compared to the pre-reform period rate of growth recorded in the organized manufacturing sector which is a clear sign of deceleration in the rate of growth.

The advocates of the economic policy reforms have advanced the argument that there will be temporary set backs and that too will be in the organized industrial sector because of the stiff competition from foreign companies as well as from the shift of demand in favour of multinational companies, but the stimulus of industrial growth will come from the domestic unorganized sector. It seems that the first part of the argument holds true and is visibly justified from the deceleration that has occurred in the growth rate of Punjab's industrial sector. What is surprising, however, is that Punjab's unorganized industrial sector recorded annual rate of growth of 3.8 per cent during 1991-2001, which is much lower than that has been recorded in the pre-reform period (9.33 per cent per annum). Informal industrial sector thrived during the period of political turmoil in Punjab and lost substantially during the period of peace, although the policy process was expected to unleash the constraints on private productive forces. This is a cause of concern because this sector is the main source of industrial employment, keeping in view the limited capacity of the organized sector which is labour displacing in nature. The comparative analysis of rate of growth of organized and unorganized industrial sector showed differential performance which has a severe impact on the changing character of industrial sector of the economy. Changes in the character of the industrial sector of Punjab can be examined from the relative importance of the organized and unorganized sectors as inferred from the changing composition in terms of their contribution in the overall manufacturing sector presented in Table 2.

Table 2: Sectoral composition of Value of Output of industrial sector of Punjab (1993-94 prices)

Sectors→ Years	Share of registered manufacturing sector	Share of unregistered manufacturing sector
1980-81	57.44	42.56
1985-86	59.81	40.19
1990-91	59.62	40.38
1995-96	66.10	33.90
2000-01	67.41	32.59

Source: As Table 1.

It is a generally held view that when the organized industrial sector gains in terms of its growth and relative share in the GSDP, it is considered as a healthy sign of economic development. From the perusal of table 2, it can be clearly inferred that the share of the organized manufacturing sector has increased from 57.44 to 67.41 per cent, that is, nearly a ten percentage point gain. However, unorganized industrial sector recorded decrease in the relative share from 42.56 to 32.59 per cent, which clearly showed the declining importance of the unorganized sector in the industrial

sector of Punjab economy. This could have been considered a healthy sign of development if rate of growth of the organized manufacturing had accelerated during the nineties. Since the rate of growth of the industrial sector as a whole as well as those of organized and unorganized industrial sectors had decelerated during the nineties, yet the rate of growth of the unorganized industrial sector of Punjab decelerated at a faster rate than the organized sector which is the root cause of the reduction of the relative importance of the unorganized industrial sector of Punjab. It is important to note here that the shrinkage in the relative share of the unorganized sector was faster during the post-reform period compared to the pre-reform period.

Punjab's industrial growth experience, during the pre and post-reform periods is in contrast to the overall rate of growth of the national economy. During the pre-reform period, manufacturing sector has grown at a higher rate compared to the all India manufacturing growth rate and in the post-reform period the trends were reversed. Consequently, the relative position of the organized industrial sector of Punjab has decreased in the national average which can be inferred from a number of indicators presented in Table 3.

Table 3: Punjab's share in Indian industry (Per cent)

Category→ Year	Number of registered factories	Fixed capital	Number of employees	Emoluments	Value of output	Net value added
1980-81	5.89	4.52	3.05	2.49	4.08	3.24
1985-86	5.65	4.58	4.18	3.11	4.29	3.21
1990-91	5.67	4.24	4.91	4.06	4.61	3.6
1995-96	5.10	3.90	4.70	3.60	4.00	2.90
2000-01	5.40	2.06	4.50	3.20	3.80	3.40

Note: Calculations are based on the *Annual Survey of Industries*, Various Issues, CSO, Govt. of India.

The perusal of Table 3 shows that the Punjab's percentage share of registered number of factories in the organized industrial sector of India declined sharply in the post-reform period compared to the pre-reform period. Accumulation of capital, which is the major source of increase in the capacity to produce more output in the economy, has shown a reduction in the relative share of Punjab in the national average. Share of fixed capital decreased from 4.24 per cent in 1990-91 to 2.06 per cent in 2000-01 which clearly indicates dwindling of the relative productive capacity of Punjab's industrial economy in the post-reform period. Somewhat similar trends can be observed from the share of other indicators such as emoluments, value of output and net value added except the number of employees which showed higher labour intensity of the organized industrial sector of Punjab.

When economic reforms were initiated, it had been contemplated that the informal sector of the economy will primarily bear the burden of generating more employment and will boost economic progress. The estimated rates of growth of

both employment and enterprises are presented in Table 4. Perusal of this table clearly shows that post-reform employment and enterprises growth in the unorganized sector of the Punjab economy recorded deceleration.

Table 4: Compound growth rate of employment and enterprises in the unorganized manufacturing sector of Punjab, 1980-1998

Year Sector	1980-1990	1990-1998
Rural enterprises	2.14	1.94
Urban enterprises	2.55	2.06
Total enterprises	2.37	2.01
Rural employment	3.08	2.80
Urban employment	2.36	1.46
Total employment	2.59	1.92

Note: Compound growth rate estimates are based on the data Compiled from *Economic Census*, 1980, 1990 and 1998, Govt. of Punjab

Rural enterprises have grown at 2.14 per cent per annum between the period 1980 and 1990 but the rate of growth declined to 1.94 per cent per annum between the period 1990 and 1998. Similar trends in the growth rate of enterprises located in the urban informal sector of Punjab have been observed. However, urban enterprises registered higher growth compared with the increase in the rural informal sector enterprises. So far as employment is concerned, rural enterprises recorded higher growth during pre and post-reform periods compared to the urban informal sector of Punjab. The overall rate of growth of employment in the informal industrial sector of the Punjab was 2.6 per cent per annum before the economic reform period but it recorded a dramatically lower growth rate, that is, 1.9 per cent in the post-reform period. Empirical evidence and analysis clearly indicates that industrial economy of Punjab has shown retrogression in the growth performance in the post-reform period, contrary to what was expected.

The pertinent question that begs for an explanation here is why has deceleration in industrial growth occurred in the post-reform period. Despite the fact that prerequisites required for higher industrial growth existed, a fact also recognized by the well known experts and national organizations, industrial growth experience belied the high hopes of the supporters of the liberalization policies. A comparative analysis of prerequisites across Indian states reveals that Punjab was the most suitable state for new industrial investment opportunities (Table 5). Punjab was ranked number one among the Indian states in terms of its competitive index at the beginning of new economic policy. This competitive index was computed on the basis of eleven socio-economic variables. The noteworthy feature of industrial growth here is that the high and low ranking states, in terms of competitive index, performed sluggishly in the post-reform period compared to some of the middle ranking states such as Maharashtra. The Human Development Index is now considered in economic thinking as a more appropriate indicator of development

compared to purely income based measures; here too Punjab state has shown quite a higher level of human development. It was ranked number two, just next to Kerala among the Indian states, which clearly indicates that Punjab can legitimately expect to be a highly attractive place for new investment, both domestic and foreign, in the absence of a 'license-quota raj'. Contrary to expectations investment, both domestic and foreign, tended to concentrate in few states in the post-reform period as it was the case during the license-quota raj. Perusal of Table 5 clearly shows that Punjab was among the low priority states in attracting direct foreign investment proposals as well as industrial investment of the private corporate sector of India. It was ranked number twelfth in the priority list accorded by foreign investors and eighth by the Indian private corporate sector during the post reform period. It is clear from the analysis of the table that Maharashtra, Tamil Nadu, Karnataka, Gujarat and Andhra Pradesh accounted for substantial amount of investment, both Indian private corporate and foreign direct investment. This has propelled industrial growth in these five states leaving the others as permanent laggards (Babu 2002). Differential growth performance in the post-reform period across states has attracted the attention of several scholars (Ahluwalia 2002, Bhattacharya and Sakthivel 2004). A rigorous scrutiny of the determinants that have accelerated growth in some of the states but retarded growth in majority of the states in general and Punjab state in particular, is necessary, especially in terms of investment-GSDP ratio, plan expenditure, human resources and quality of infrastructure. Among the fourteen major states, investment-GSDP ratio of the state was 18.70 in 1995-96, which was the lowest and was nearly half of the average of fourteen states.

Table 5: State Wise indicators of competitiveness and investment Proposals

States	State Competitive Index	Human Development Index	FDI Approvals (Numbers) 1991-2004	FDI Approvals Amount Rs. Crore	IIP nos. Aug. 1991-March 2004	IIP proposed investment Rs.crore
Punjab	82.80 (1)	0.58 (2)	199 (12)	2434 (12)	183 (7)	4887 (8)
Kerala	67.71 (2)	0.65 (1)	325 (10)	1552 (13)	67 (11)	2782 (12)
Haryana	63.25 (3)	0.54 (3)	858 (6)	3870 (10)	233 (6)	4318 (9)
Gujarat	60.63 (4)	0.50 (5)	1204 (5)	18837 (4)	438 (3)	14567 (2)
Karnatka	56.19 (5)	0.48 (6)	2467 (3)	24138 (3)	233 (6)	9598 (6)
Tamil Nadu	49.10 (6)	0.52 (4)	2607 (2)	25072 (2)	736 (1)	11273 (3)
Maharashtra	48.77 (7)	0.48 (6)	4816 (1)	51115 (1)	558 (2)	21028 (1)
Andhra Pradesh	46.69 (8)	0.43 (7)	1226 (4)	13745 (5)	434 (4)	10715 (4)
Orissa	46.61 (9)	0.34 (10)	140 (13)	8229 (8)	37 (12)	5444 (7)
Assam	46.41	0.43	NA	NA	12	2433

	(10)	(7)			(14)	(13)
Rajasthan	38.90 (11)	0.29 (12)	341 (9)	3033 (11)	97 (9)	1626 (14)
Madhya Pradesh	36.80 (12)	0.31 (11)	242 (11)	9271 (7)	141 (8)	3160 (11)
West Bengal	34.18 (13)	0.48 (6)	670 (8)	9317 (6)	90 (10)	4047 (10)
Uttar Pradesh	25.27 (14)	0.36 (8)	798 (7)	4917 (9)	353 (5)	9752 (5)
Bihar	22.36 (15)	0.35 (9)	49 (14)	740 (14)	33 (13)	1462 (15)

Source: 1. National Productivity Council research division as quoted in Burange, P.G. (1999), 2. Rani, P. Geetha (1999), and 3. Government of India (2004).

Note: 1. NA implies not available. 2. Figures in parentheses indicate the rank.

However, Plan expenditure, as a percentage of GSDP was 5.69 during 1980-81 to 1990-91, which declined to 3.94 during the period 1991-92 to 1997-98. So far as human resources, in terms of literacy rate, are concerned, it has slowed down in the post reform period. Punjab continues to show the highest index of infrastructure both in the pre and post-reform period, but the index declined from 193.4 in 1991-92 to 185.6 in 1996-97. However, the quality of infrastructure and human resources are difficult to judge from indicators which are based on physical characteristics. Low level of investment, decline in the planned expenditure and lack of strategic human skills as well as infrastructure are the major factors that do have a bearing on the slow down in the industrial growth in Punjab (Ahluwalia, 2002, Singh and Singh, 2002).

4. Rural Industrialization Strategy

Punjab is known as the food bowl of India. Agricultural sector of the state was developed to solve the food shortage of the country as well as to reduce foreign dependence on food in the early sixties. The green revolution was ushered in Punjab due to the adoption of high yielding varieties of seeds, chemical fertilizers, irrigation and supportive institutional infrastructure. During the early green revolution period, farm income received a big boost irrespective of farm size. Remunerative prices and assured market were the two fundamental factors that perpetuated wheat and paddy rotation over a period of 40 years. As a consequence, wheat and paddy become the two predominant crops of Punjab and the state contributed 21.78 per cent of wheat and 12.22 per cent of paddy in all India production in 2002-03. The Punjab state produced surplus food grains and contributed to the national pool for nearly 70 per cent of the wheat and 42 per cent of the paddy in 1992-93, which has substantially decreased in the late nineties (Ghuman 2001). This clearly indicates the declining importance of Punjab's food grains in the national economy. The content of research and development and use of family labour declined due to rise in the intensity of farm machinery, hired labour and fertilizer and pesticides which has resulted in high cost agricultural production and decline in the agricultural household income since the early eighties (Sidhu and Singh 2004). This is a clear

case of technological constraint resulting in diminishing returns to scale. On the technological plane, solutions exist which have a capacity to raise productivity multiple times and reduce per unit costs of agricultural produce through harnessing the biotechnological revolution. This requires massive public investment in frontline technologies and strengthening of institutional infrastructure which can interact closely with the individual farmers because the small sized farmers do not have a capacity to spend resources on R&D and essential training of the manpower. However, the liberalization regime has left the farmers to fend for themselves or depend on the profit oriented agribusiness firms. Rising costs along with stagnant technology and near freezing of the minimum support price of wheat and paddy, which turned the already adverse terms of trade from bad to worse, severely reduced returns on food grain production. The reduction of differentials between returns and cost of production, increasing uncertainty of weather as well as dependency on borrowing on credit at a higher rate of interest from informal lenders were the reasons responsible for increasing indebtedness among the farmers of Punjab (Shergill, 1998, Ghuman, 2001, Gill, 2004). This has compounded problems to the extent that farmers of Punjab have resorted to committing suicide (Gill, et al 2000).

Keeping in view the evidently growing agricultural crisis, government of Punjab has shown early awareness and appointed an expert committee under the chairmanship of S. S. Johl in 1985 to diagnose the problem and suggest suitable remedial policy measures. The Johl committee put forward the idea of diversification of agriculture from the existing wheat-paddy cropping pattern (Government of Punjab 1986). Diversification aims to transfer area from cereal production to remunerative crops such as fruits, vegetables and pulses not only to increase income of the farmers but also to reduce environmental degradation for the long-term sustainability of Punjab agriculture. Agriculture diversification based rural industrialization growth strategy has been prompted, based on its successful experience in the early eighties in many Southeast Asian countries. Thus, emulating the success story of diversification through rural industrialization and increasing rural incomes in several Southeast Asian countries seems to be a fascinating policy option for the state of Punjab. However, the proposed agricultural diversification strategy of agriculture completely ignored the fundamental ingredients of the strategy which were the corner stone of success in Southeast Asia. The diversification strategy was based on the widely spread misinformation by the multilateral financial institutions and independent experts who attributed the success of diversification in Southeast Asia to the use of market forces (Jomo, 2001; Wade, 1990). Therefore, this diversification strategy, which relied upon market responses and was expected to get a cold response from the government of Punjab, however, received enthusiastic response from the individual farmers. The cruel response of the market though soon dampened the enthusiastic response of the farmers and they had no other option left but to go back to the well-known wheat-paddy cropping pattern. In a recent attempt, the government of Punjab has taken the lead to promote diversification of agriculture while adopting the path of contract farming. The government of Punjab has been playing the role of an intermediary between the farmers and agribusiness firms. However, the very design and implementation of contract farming scheme leaves small sized farmers at the mercy of the private firms

which have secured monopoly position in the market. Farmers, who have opted for contract farming with the private agribusiness firms, have filed complaints with the Punjab governments' agriculture department about the way agribusiness firms exploited them in terms of providing lower prices and charged them for services without rendering any service. These complaints of the farmers were investigated by the governments' agriculture department and found to be correct. Contract based on purely private profit considerations and market orientation in the absence of an enforcement agency acted against the farmers. Thus, farmers have no choice but continue perpetuating the wheat-paddy cropping pattern (Gill, 2004).

Diversification of agriculture of Punjab is a desired goal for the transformation of agrarian economy to an industrialized one. The transformation experience of the developed countries had shown that the agricultural sector of the economy, in the process of transformation, provides surplus resources to the industrial sector and marginalize the agriculture sector of the economy. Thus, decline in the share of real incomes in the agriculture sector was a universal phenomenon and was experienced by the OECD countries and middle-income countries. As long as the processing activities of agricultural production are taking place away from the farm gates, the agricultural sector will have the potential of exploitation and continue to face the decline in rural incomes (Timmer, 1988). Contrary to this, the experience of diversification of agriculture and rural industrialization in the Southeast Asian countries in general and Taiwan in particular, has not only integrated the agricultural sector with industry but also generated a substantial rise in rural incomes. Agricultural produce was processed on the farm gates and surplus was ploughed back to expand rural industrial activities as well as raising the level of living of the people living in the countryside. A fundamental factor in the success of Taiwan's agricultural diversification experience was the role of farmers' associations. The farmers' association of Taiwan was nothing but the farmers' cooperative in another name, responsible for controlling all the economic activities: from credit to production, processing and marketing (Moore, 1993). Therefore, the value addition was done through processing activities and was realized through marketing activities and surpluses redeployed for the welfare of the association/cooperatives. This process very successfully eliminated the intermediary agency which is the major source of exploitation and of absorbing surpluses without looking after the interest of the primary producers. However, it is important to note here that the state in the Southeast Asian countries played a crucial role in providing essential institutional infrastructure and investment in rapid technical change to raise agricultural output and rural incomes. Elimination of the high rents charged by the middleman and endogenous technological progress has the power to transform agriculture into an industry along with raising rural incomes. This is only possible if the organisation of production is changed from the individual to a cooperative. The cooperatives suggested here are not the bureaucratic-state controlled cooperatives, but modern cooperatives strictly based on membership and which adhere to market rules with accountability as an endogenous tool of organizational behaviour. There are many examples of such cooperatives that have succeeded in India too. Amul is a remarkable success story of small rural milk producers' cooperative which is now highly diversified into consumer products. The creative organization of Amul

contributed to the generation of surpluses after the elimination of the intermediary agency and these surpluses have been utilized for developing local infrastructure and investment in the technology to raise the productivity of the farmers' output (Patibandla and Sastry 2004). Another important example of farmer's cooperative is in Narayangao area in Junnar taluka in Maharashtra state for industrialization of grape cultivation, which was established in 1991. There are 45 members and they pooled 130 acres of vineyards to export table fresh grapes to the European markets. This cooperative has diversified both marketing and product related activities. It has succeeded in raising the level of rural income both of the farmers and rural labour. The reduction of risk through collective action, elimination of middlemen and investment in technological progress were the central factors which contributed to the success story of the transformation of farmers as business enterprises (Rath 2003).

Punjab government and farmers' organizations which are striving to transform farming through diversification of agriculture have a compelling need to learn lessons from the success story of the Southeast Asian countries as well as from well known Indian examples. Farmers' organizations so far have successfully organized agitations to secure some concessions for survival but completely ignored their collective role in generating economic enterprises to reduce the role of middleman. Post-reform deceleration of industrial growth and shying away of both foreign and Indian private corporate investors to invest in Punjab's industrial economy are the other hard lessons which clearly point out that local investment efforts are direly needed to transform the economy. Local investment efforts have a capacity to crowd in both foreign and Indian investment. Therefore, a strategy that needs to be adopted by the government of Punjab is not to offer purely private and market based solutions, but lead farmers' organizations to organize production, processing and marketing activities. This requires essential suitable institutional and infrastructural arrangements which should encourage farmers to process their produce at the farm gates and eliminate the mark up of the middleman. It needs to be suggested here that the government of Punjab should enact a suitable policy and provide exclusive industrial parks as agro-processing zones for farmers' cooperatives on a similar pattern as have been provided and offered to foreign and domestic private industry.

5. Concluding Remarks

Punjab economy is passing through a phase of unprecedented economic crisis. Industrial sector of the Punjab economy has clearly recorded deceleration in the post-reform period. This is contrary to what was expected at the time of adopting the market-oriented reforms in the country. Despite the fulfilment of the required prerequisites for industrial investments, Punjab economy could not receive expected investment - foreign or domestic. The diversification of agriculture through purely market oriented and contract farming with the private agribusiness firms has failed miserably. The only alternative option left for self-sustained economic growth is to change the organizational structure and involve local people to organize economic activities and eliminate the rent-seeking middleman. Involvement of the farmers in agribusiness activities through cooperatives as production, manufacturing and

marketing organizations on the pattern of Southeast Asian countries such as Taiwan could be the best strategy for self-sustaining growth. This also has the capacity to crowd in private investment. However, the role of the government is crucial in terms of providing essential institutional and infrastructural arrangements. Technological progress for agricultural production and manufacturing industries is the crucial link for any strategy to succeed and this must be the responsibility of the state on the same pattern of Southeast Asian countries. The state should reinvent itself to provide the role of a leader in terms of governing the markets as has been suggested in the Post-Washington Consensus, and harness for growth the complementariness of the state and the market. The will and capacity of the government does matter in transforming the rural economy and for increasing rural employment and income through rural industrialization based on diversified agriculture.

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