CHAPTER 10
SUMMARY, CONCLUSIONS
AND POLICY
RECOMMENDATION
10.1 Summary

The results of the study can be summarized as follows:

Overview of the Economy

- The average annual growth rate in Gross State Domestic Product (GSDP) of Madhya Pradesh for 1980-81 to 1989-90 was 4.91 per cent while GDP of All-India grew at 5.29 per cent for the same period. During 1993-94 to 1998-99, while the average annual growth rate for All-India grew at 6.74 per cent, M.P. followed with a growth rate of 5.42 per cent. The growth momentum slowed down during 1999-00 to 2003-04 as GDP for All-India registered 5.63 per cent average annual growth rate while M.P. plunged down to 1.93 per cent. It was in the year of 2000 that the state of M.P. was part of a bifurcation process. Chhattisgarh was carved out of the state of M.P. A major turnaround in the state of M.P. was witnessed during 2004-05 to 2012-13 when the state registered a stupendous 8.39 per cent of average annual growth which in fact outpaced the All-India GDP growth of 7.97 per cent.

- The GSDP of M.P. was Rs. 37971 crores in 1993-94 accounting for a share of 4.86 per cent of All-India GDP. The contribution to All-India GDP continuously fell till 1996-97. The contribution to the central pool of GDP greatly reduced to 3.75 per cent in 2002-03 but after 2007-08 gradually started to come up with increasing contribution. The decreasing trend in share of M.P. to GDP was not too steep to register any major fall-out.

- Applying a simple linear regression model, we tried to assess how the income concentration ratio of M.P. has changed over time. The null hypothesis stating that there is no significant difference between the relative position of PCI of M.P. in All-India PCI is accepted as the slope coefficient is negative and insignificant. The power of the model was 79.94 per cent.

- We also examined if sectoral diversification was taking place in the economy of M.P. over time. The null hypothesis stated that there is no change in the degree of sectoral diversification of M.P. A negative and significant slope coefficient was found which indicates convergence among the sectors implying that all the sectors are contributing to economic growth of Madhya Pradesh economy. $R^2$ of the model is 23.99 per cent.
Agriculture

- 49.60 per cent of the total workers belonged to cultivators and agricultural labourers but this higher employment dependence does not commensurate contribution to Gross State Domestic Product of the State. However, this sector has been growing at a commendable rate. From registering an annual average of 2.06 per cent growth during 1993-94 and 1998-99, the sector then went on to grow at 4.13 per cent during 1999-00 and 2003-04. While agriculture and allied sector grew at an average annual growth rate of 7.13 per cent, the agriculture sector grew at 7.73 per cent during 2004-05 to 2012-13. The notable growth in agriculture sector of 10.82 per cent was witnessed during 2008-09 to 2012-13. Given the employment dependence and growth potential of the agriculture sector in the State, we sought to find out what are the plausible factors that affect this agriculture growth.

- Land use parameters of net area sown, net irrigated area and cropping intensity were analysed for the period 2001-02 to 2010-11. Semi-log function for net area sown and net irrigated area and simple linear regression for cropping intensity was applied. While Net Area Sown was found to be insignificant, net irrigated area and cropping intensity were found to be positive and highly significant at 1 per cent level of significance which shows that over time, irrigation facilities have increased. Although if this trend continues, assured irrigation will further reduce the volatility of agriculture growth due to dependence on monsoons. But, the cause of concern lies in the fact in the source of irrigation which points towards an increasing trend in the ratio of groundwater to surface water for the above period. Increase in cropping intensity is the result of many factors working in tandem with each other like technological breakthrough in terms of assured irrigation facilities, increased use of fertilizers, bonus prices and various other factors that may induce the farmer to raise multiple crops.

- Fertilizer consumption has increased from 40.35 kg/ha in 2001-02 to 77.21 kg/ha in 2009-10. In the wake of improving soil health of the crop so as to enhance productivity, fertilizers were made available at subsidized rates which are a very important factor in the increased consumption though on the other hand, it also may promote use of those subsidised fertilizers which are
available at more lucrative rates. As Madhya Pradesh Agriculture Economic Survey, 2012 notes that the increased use of fertilizer also indicate change in cropping pattern and increased irrigation facilities available.

- To enhance productivity, Seed Replacement Rate should be enhanced but there are wide variations among crops in terms of seed replacement rate possibly due to the bureaucratic delays in pro in providing seeds to fluctuating demand conditions owing to last minute planting decisions by farmers among many act as hurdle in making these seeds available to farmers on time.

- The share of capital expenditure on agriculture and allied activities in Gross State Domestic Product as a proxy for public investment is showing a fluctuating trend 0.03 per cent in 2001-02 to 0.01 per cent in 2009-10 which is quite contrary to the fact that the agriculture sector has been registering high growth rates in the recent years which means that the agriculture growth is not related to the capital expenditure incurred implying that large landholdings that are not in dire need of the agriculture facilities by the Government are contributing more to the agriculture growth of the State. Although, availability of investment is not the only factor but also the efficiency with which it is put to use. Besides this, private investment also plays a very dominant role.

- Five out of twenty crops under study had 64.4 per cent share of the total cropped area of the State viz. Rice, Wheat, Soyabean, Gram and Jowar in 1991-92. After bifurcation, the crop area of rice shrunk to 9.33 per cent while Soyabean surpassing second highest share of wheat during 1991-92 to have a lead in 2001-02 by having a share of 23.37 per cent of the total cropped area. While crop area under wheat was 19.45 per cent during 2001-02. Soyabean was the only oilseed to make a presence in the top five crops having a major share of total cropped area. On a positive note, it is a good sign that the State is realising its potential for crop diversification but other oilseeds like groundnut, linseed, nigerseed, sesamum and castor seed still have a meagre share in the total cropped area. From 1991-92 to 2000-01, Out of 20 crops under study, only five crops registered positive growth rates in crop area for the period 1991-92 to 2000-01 viz. Barley (0.26%), Gram (0.21%), Wheat (1.21%), Sugarcane (2.71%) and the highest CAGR being in area of Soyabean (6.17%) although the yield of Soyabean did not grow commensurately with a
CAGR of only 1 per cent. The highest CAGR yield was observed in Bajra (8.83%) followed by Mesta (5.18%), Nigerseed(3.45%), Ragi(2.50%), Sesamum(2.39%) and Groundnut(2.12%). It is worth noting here that while the CAGR of crop area under Bajra suffered a dip, the CAGR yield has been highest in this crop. On the other hand, CAGR of production has also been 4.36%. For the period 2001-02 to 2010-11, area, production and yield of Wheat, Rapeseed and Mustard, Soyabean and Cotton were positive and significant out of which area, production and yield of Cotton was highly significant.

- Average size of landholding in Madhya Pradesh was 1.8 hectares whereas it was 1.2 hectares for All-India. While the average landholding size remained almost constant from 1995-96 to 2010-11 for marginal, small, semi-medium and medium landholdings but for large landholdings, it actually declined by 0.8 per cent from 1995-96 to 2005-06 for Madhya Pradesh.

- The largest proportion of agriculture credit in terms of Crop Loan was given by District Cooperative Banks (81.48%) in 1998-99 when Regional Rural Banks had a share of 3.49% and Commercial Banks with 15.03%. However, with an average Growth Rate of 17.51 per cent from 1998-99 to 2006-07, there has been continuous decline in the proportion of Crop Loan to the total crop loan disbursed by District Cooperative Banks after 1999-00. Commercial Banks have tried to make their presence felt by not only registering larger proportion of Crop Loan disbursement but growing at an average growth rate of 51.75 per cent. Although, Commercial Banks have been pivotal in the credit disbursement of Term Loan throughout the period under study but average growth rate of 18.80 per cent point towards the financial exclusion of the State.

Industry

- The average annual growth rate for the industrial sector including mining and quarrying was 8.39 per cent during 1993-94 to 1998-99. But with bifurcation of the State in 2000, this growth plunged down to 1.21 per cent during 1999-00 to 2003-04. By contributing more than half of the industrial output, manufacturing sector emerges as the major driver of the industrial output of
the State. Nevertheless this mammoth share of 51.76 per cent in 1993-94 witnessed slackening over a period of time and could contribute only 32.12 per cent in 2012-13 to the total industrial output. It is worth noting that this moderation in manufacturing was mainly due to the poor performance of the unregistered manufacturing sector whose contribution declined from 21.81 per cent in 1993-94 to 9.06 per cent in 2012-13. The average annual growth rate of unregistered manufacturing sector declined from 9.24 per cent during 1993-94 to 1998-99 to 0.55 per cent during 1999-00 to 2003-04. While all other sub-components of industrial sector at least managed to register non-negative growth rates, manufacturing sector plunged down with a negative growth rate of -2.96 per cent during 1999-00 to 2003-04. From 2004-05 to 2012-13, while registered manufacturing sector recorded average annual growth rate of 12.46 per cent, unregistered manufacturing could only grow by 4.98 per cent for the same period.

- With the help of semi-log function, a negative slope co-efficient which is significant at 5% level of significance was found for the number of factories thereby accepting the alternate hypothesis that number of factories decreased during 1991-92 and 2000-01. The period had a negative CAGR of -2.85 per cent. $R^2$ of the model was 42 per cent. While on the other hand, when the semi-log function was applied on the same dependent variable for the period 2001-02 to 2010-11, the slope coefficient turned out to be positive and significant at 1 per cent level of significance thereby rejecting null hypothesis which stated that there is no significant difference in the growth of factories from 2001-02 to 2010-11. The positive coefficient implied that the number of factories increased during the mentioned period. The CAGR of the number of factories was 3 per cent for the above period. 65 per cent of the variation was explained by the regression model.

- For the period 1991-92 to 2000-01, slope coefficient was positive and insignificant for fixed capital which made us to accept the null hypothesis that there is no significant difference in the fixed capital from 1991-92 to 2001-02. A very poor $R^2$ of 7 per cent implies that the model could not capture the variations in the dependent variable. The CAGR of fixed capital was 2.63 per cent. On the other hand, the CAGR of Fixed Capital grew at 13.83 per cent.
from 2001-02 to 2010-11. 94.30 per cent of the variation in fixed capital during 2001-02 to 2010-11 was explained by the model. However, a positive yet insignificant slope coefficient makes us accept the null hypothesis that there was no significant difference in the fixed capital from 2001-02 to 2010-11.

- It is interesting to note that the slope coefficient for value of output was positive and significant at 1 per cent level of significance during 1991-92 and 2000-01. The null hypothesis thus stands rejected and a positive coefficient meant that value of output increased during 1991-92 and 2000-01 while a positive and insignificant slope coefficient was found for the value of output during 2001-02 to 2010-11 which made us accept our null hypothesis that there was no significant difference in the value of output.

- The slope coefficient of net value added is positive and insignificant and thus we accept the null hypothesis that there is no significant difference in the net value added from 1991-92 to 2000-01. The $R^2$ of the model was 22.11 per cent. CAGR of net value added 6.02 per cent. For the period 2001-02 to 2010-11, the slope coefficient of net value added was positive and highly significant at 1 per cent level indicating that net value added increased during this period. $R^2$ of the model was 88.05 per cent. CAGR of net value added grew at 16.83 per cent.

- The slope coefficient of gross fixed capital formation was negative and insignificant with a poor $R^2$ of 5 per cent thereby accepting the null hypothesis that there is no difference in the gross fixed capital formation from 1991-92 to 2000-01. The slope coefficient of gross fixed capital formation was positive and insignificant during 2001-02 and 2010-11 thereby accepting the null hypothesis that there is no significant difference in gross fixed capital formation during 2001-02 to 2010-11.

- CAGR of fixed capital from 2001-02 to 2010-11 was 13.83 per cent while during 1991-92 to 2000-01, fixed capital grew only with a CAGR of 2.63 per cent. Moreover, Net Value Added grew at a CAGR of 16.83 per cent which was higher than fixed capital during 2001-02 and 2010-11 which implies that factor income as represented by value added (value of output-value of input) is rising at a higher rate than the investment made in the form of fixed assets.
• More than 70 per cent of agro-based MSME industries are located in the 10 districts of Balaghat, Raisen, Chhatarpur, Shivpuri, Shahdol, Morena, Sagar, Sidhi, Bhind and Ratlam. There are only 7 agro-based industries that have more than 1000 units. Districts like Dindori has just one agro-based industry compared to 2869 units of Balaghat. Except few districts, wood/wooden based furniture based industries are present though the distribution is skewed. On one hand, the top five districts that had the largest concentration of wooden based industries were Sidhi (1485), Balaghat (1040), Morena (909), Bhopal (900) and Shajapur (808) while districts like Jhabua (5), Guna (3), Raigarh (2) had the lowest number of these industries. Industries related to readymade garments too had inequality concerns in terms of number of units established in these districts. Mineral based industries are concentrated in Shahdol (1500), Shivpuri (1291), Satna (1276), Morena (462) and Khargone (332) Though location of industries is governed by a lot of factors but leaving districts that are not able to benefit from the wave of industrialisation would enhance the intra-district divide further.

• Infrastructural factors like Per capita consumption of electricity and transport services affect the industrial growth of any State. With time, the disparity gets accentuated in per capita consumption of electricity.

• Among others, demand from agriculture sector affects the industrial growth. As agriculture sector does not only provide inputs to the industrial sector but also acts as the consumer of the industrial goods, therefore the linkage between agriculture and industrial sector is of significant importance. Given the rich resource base of the State, the concentration of industrial activities around the natural-resource based industries/regions can be understood. In fact, the Growth Centre approach was intended with the very objective but equally pressing concern is the issue of sustainability. In fact, this opinion is also confirmed by Trivedi et al. (2011) when they mention that high resource intensity of manufacturing sector is a major obstruction along with the intra-sectoral disparity that exists between organised and unorganised sector for the Indian manufacturing sector when it tries to tread the path of sustainability. Thus from here emanates the need for a diversified economic structure.
Fiscal

• For most part of the years from 1991-92 to 2009-10, the ratio of capital expenditure to revenue expenditure remained consistently low. Due to the inherent rigidity that exists in the constituents of revenue expenditure like subsidies, wage and salaries, pensions and interest payments, it is difficult to cut them down.

• From 1991-92 2000-01, while revenue expenditure grew at an average annual growth rate of 12.44 per cent, capital expenditure grew by 7.47 per cent. In one of the major overhaul, the State witnessed 26.72 per cent average annual growth in capital expenditure while revenue expenditure grew only at 11.55 per cent during 2001-02 to 2009-10 which implies the renewed focus on upgrading the infrastructural needs of the State.

• In 1991-92, the share of indirect taxes on total tax revenue was 56.46 per cent which remained higher than the share of direct taxes in total tax revenue. As the burden of Indirect taxes falls more on the poor therefore wider tax base calls for greater share from direct taxes. In the later years of 2000-01, 2001-02, 2006-07, 2007-08 and 2008-09, direct taxes acquired more than 50 per cent to total tax revenue.

• But, if we look at the average annual growth rate from 1991-92 to 2009-10, we find the growth rate in Revenue Receipts to be higher than revenue expenditure by 0.38 per cent which is a positive sign implying that the State is able to manage its current expenditure. It is quite an intriguing revelation that the average annual growth rate in revenue receipts of 12.38 per cent was higher than that of GSDP of M.P. which was 11.55 per cent although the revenue expenditure was also higher than the GSDP of the State.

• The growth rate in Revenue Receipts has followed quite an erratic pattern over the years while mostly falling short of revenue expenditure. It was only in recent years after 2004-05 that the State enjoyed a revenue surplus position.

• The $\beta_1$ coefficient was negative and insignificant prior to 2001-02 while the dummy coefficient was positive yet insignificant in explaining the change in Gross Fiscal Deficit as a ratio of GSDP brought by the bifurcation. A very poor $R^2$ of 2 per cent implies that the specified model could not entirely capture the variations in the dependent variable.
The $\beta_1$ coefficient was positive and insignificant in explaining if there is any significant difference in Capital Outlay as a ratio of GSDP prior to 2001-02 while the dummy coefficient was positive and significant at 10 per cent level of significance implying that bifurcation process resulted in increased allocation of capital outlay. $R^2$ of the model was 48.26 per cent.

The debt-GSDP ratio (expressed in percentage) was 7 per cent in 1991-92 which rose sharply from 1.7 per cent in 2002-03 to 8 per cent in 2003-04. It was because the State had to resort to Ways and Mean Advances from RBI to tide over the temporary imbalance between the cash flow of their receipts and payments. In the same year of 2003-04, the State also resorted to Special Securities to NSSF worth Rs. 1511.74 crores which as mentioned earlier formed a regular feature of majority of State Government. In 2009-10, debt-GSDP ratio was 2 per cent.

**Social Development**

- Applying a simple linear regression function, wherein the co-efficient of variation in Per Capita Income is the regressand (dependent variable) and time is the regressor (independent variable), we find a positive and significant slope coefficient, $\beta_1 = 0.0056$ which is significant at 5 per cent level of significance with $R^2$ explaining 64.82 per cent of the variation in the model. Thus, we reject the null hypothesis that there is no divergence in PCI across districts of M.P. from 2004-05 to 2011-12. The PCI of districts have diverged during the concerned period.

- The co-efficient of variation for rural poverty in districts came out to be 43.33% which was again higher than the co-efficient of variation in urban poverty which was 33.56%. Only 9 out of 45 districts viz. Morena, Bhind, Gwalior, Neemuch, Mandsaur, Dewas, Shajapur, Indore and Rajgarh had less than 20% of rural poor living below poverty line. Districts of Panna, Umaria, Shahdol and Harda had more than 55% rural poor living below poverty line out of which Umaria and Shahdol had more than 60% of the rural poor. The urban poverty ranged from 51.8% to 64.7% in Chhatarpur, West Nimar, Vidisha and Chhindwara districts. Less than 20% urban poor resided in Morena, Shahdol, Sidhi, Neemuch, Ujjain, Indore and Mandla districts.
• To gauge the disparity that exist in social development indicators across districts and analyse how it is related to the Per capita income of districts, we have a cross-sectional dataset of social and economic indicators across districts of M.P.

• It is quite interesting to note that the co-efficient of variation in Per Capita Income across districts was 38.34 per cent which was higher than the variation in all the other social variables. The state of M.P. infamously known for its high IMR had a comparatively low co-efficient of variation of 14.68 per cent for the 45 districts under study. However, 26 out of 45 districts had an IMR higher than the State average of 67. The highest IMR of 93 was observed for Panna. 22 out of 45 districts in M.P. had institutional delivery less than the state average of 76.1 per cent.

• Financial Exclusion alienates people from participating in the economic growth. In districts of Damoh, Bhind and Guna, less than 35 per cent of the total households availed banking services. The district of Dindori which otherwise remained below the state average in terms of IMR, full immunization of children, institutional delivery had 69.1 per cent households availing banking services besides being positioned at 7th rank from bottom in terms of Per Capita Income.

• The plight of sanitation facilities in the districts of the state highlights the recent drive for providing toilet facilities across the nation. 71.2 per cent of the total households in M.P. are bereft of toilet facilities and the situation is severe at the district level. Sidhi District has PCI of Rs. 26388 which is higher than the State average of Rs. 22091 but more than 90 per cent of households do not have toilet facilities.

• As per our regression analysis, we could see the divergence in PCI building up over the years. A similar panel data study for these social indicators would have helped us to understand the phenomena of convergence/divergence in these indicators but that is beyond the purview of this study. As per the cross-sectional analysis, the variation in social indicators was lesser as compared to PCI which implies that the Government intervention in upgrading the social development of its populace is at least able to bridge the widening disparities among disparities though sanitation facilities face a grim situation.
10.2 Conclusion

From our analysis, we found that the economic growth scenario was quite comfortable particularly after 2004-05. The growth rate of agriculture sector was commendable despite volatility in the sector. A more diversified agriculture system could insulate the farmers against risks and can pave the way for a more profitable venture. Nevertheless, as a large chunk of population is still dependent on agriculture, it is pertinent enough to understand the trajectory of growth in this sector. The regional concentration of industries coupled with infrastructural deficiencies still acts as an impediment to enormous potential of the industrial sector. The satisfactory fiscal health points towards the efforts of the State where it has tried to reduce the fiscal burden although there is further scope for improvement. The improvement in social indicators was commendable though they lag behind the All-India levels. In the wake of the much debatable issue of empowerment versus entitlement, the State of M.P. which used to be contemplated at the lowest rung of the social development, the State intervention is necessary. In a broad sense, empowering citizens is like investing in health and education which is qualitative in nature and takes time to develop. Hence, the role of entitlement gains importance. Nevertheless, there exists a fine line between empowerment and entitlement. It can be concluded that a sustainable approach is required towards understanding the developmental needs of the State which should come from both entitlements and empowerment.

10.3 Policy Recommendations

- The State should concentrate on increasing the trade and warehousing infrastructure because of the its advantageous geographical location.
- Agriculture is growing very comfortably but degree of crop diversification is very poor. Government should use Minimum Support Prices as an instrument to diversify the crop area from cereals to pulses and oilseeds.
- The industrial performance is not very impressive. Without pushing up of industrial growth, it is difficult to sustain high growth in agriculture and services sector.
- Regional distribution of industries is not evenly distributed. Government should focus on industrial diversification both sectorally and regionally.

Industries which are dependent on agriculture should be promoted.
• Fiscal parameters are quite healthy. It has always followed strict fiscal discipline but the own-tax revenue-GSDP ratio is very poor. Growing economy requires more state expenditure in terms of social, agriculture and economic infrastructure from the State. Therefore, State should take special measures to mobilise its own-tax revenue by increasing both tax base and net. With the help of advanced IT infrastructure, the cost of tax collection can be reduced.

• The substantial fiscal responsibility measures undertaken by the State in the wake of Fiscal Responsibility and Budget Management (FRBM) Act furnishes the endeavours of the State. However, there is a need to increase the developmental expenditure to meet the social and development liabilities of the State as despite the improvement in social development indicators, the State still lags behind the national average in most of them. With a higher concentration of tribal population and a low population density, the cost of delivery becomes high. Hence, in the wake of above mentioned issues, the State should put up a case before the Centre for Special Development Grants.