Many studies concerned with the investment climate, industrial growth, industrial efficiency, profitability and total factor productivity of the firms are available. Some of the studies are based on cross-sectional data and some on time series data. As the bases for analysis, some studies took industry-wise data where as others took firm-wise data. These studies differ from each other on account of time period taken into consideration, the coverage of industries, definition of investment climate, industrial growth, profitability and measure of total factor productivity and the measure of independent variables. A good deal of empirical work had been done to test the various aspects of the investment climate such as: measurement of investment climate (IC), determinants affecting investment climate (IC), investment climate (IC) and industrial growth, investment climate (IC) and total factor productivity (TFP). The study attempts to review some available empirical studies relating to the measurement of investment climate (IC) and factors affecting investment climate in section I. In section II, the empirical studies regarding the relationship of investment climate with total factor productivity (TFP) and also with industrial growth and profitability have been reviewed.

Section - I

North (1990) studied about the investment climate in India. His results indicate that investment decisions are no longer governed by national planning and by the objective of balanced regional development. Investments are now made on economic considerations: the ideas, the capabilities and the strategies of firms as well as the natural geographical features and investment climate in various locations has become the decisive factor. The study says that investment climate is the institutional, regulatory and policy environment in which the firms operate. The study also concluded that investment climate can vary considerably across the states in India depending upon the state level differences in the security of property rights, approaches to regulation, provision of infrastructure and functioning of finance and labor markets.

Greene and Villanueva (1990) studied about the factors of investment climate affecting private sector investment. The study examined the fundamental relationship between private sector investment and macro-economic variables in the developing
countries and also developed an appropriate structural model of investment of these countries. The study found that in developing countries, a macro-economic policy that encourages price stability, a cautious approach to external borrowings and a reallocation of public expenditure towards investment projects supportive of private-sector activity could promote and sustain private investment by promoting economic growth. Thus, the study concludes that borrowings and reallocation of public expenditure towards productive projects promote industrial productivity and growth.

Hoshi, Takeo and Kashyap and Scharfstein (1991) state that a business friendly investment climate is necessary for growth and profitability. The study states that easy availability of financial services is a sign of good investment climate in that area. The study also represents evidence on the role of banks and other financial intermediaries in channeling funds into productive investment. By examining two sets of Japanese firms, the study found that the first set has close financial ties to large Japanese banks that serve as their primary source of their external finance and are likely to be well informed about the firm. The second set of firms has weaker links to a main bank and presumably faces greater problems in raising capital. It is found that investment is more sensitive to liquidity for the second set of firms than for the first set of firms.

The study also highlights the role of financial intermediaries in the investment process. The study found that high current profits increase current liquidity, thereby generating investment and increasing future output and profitability. In conclusion, it can be stated that availability of financial services matters for productivity and profitability of the country.

David, Wheeler and A. Mody (1992) studied about the investment climate and international investment location decisions in the U.S. firms. It is stated that investment climate is the institutional and regulatory environment in which firms operate. The author has termed location tournaments, policy adjustments, promotional campaigns and incentive programs designed to attract investment by multinational firms.

The study found that U.S investors give almost all the decision weight to agglomeration benefits and to some classical variables such as relative wages, market size, and transport cost etc. Among the agglomeration-related factors, infrastructure
quality clearly dominates for developing economies. Specialized support services are more important for industrial economies, all of which already have high quality infrastructure. The study also found that investors seem to prefer good quality infrastructure to tax incentives. The study suggests the overriding importance of infrastructure development, stable international relations, rapid industrial growth and an expanding domestic market for developing economies. The study concluded that those developing countries which are already doing well in these categories do not need location tournaments.

Ingersoll and Ross (1992) studied about the variables (interest rate, tax rate and uncertainty) that affect the climate for investment. The study examined irreversible investment decisions when the interest rate evolves stochastically, but future cash flows are certain. They showed that as the uncertainty over future cash flows decreases, this creates an opportunity cost of investing, so that the traditional net product value rule will accept too many projects. Instead, an investment should be made only when the interest rate is below a critical rate, which is lower than the internal rate of return, which makes the net product value zero.

The study also showed that for long-lived projects, a decrease in expected interest rates for all future periods need not accelerate investment. The reason is that such a change also lowers the cost of waiting and thus can have an ambiguous effect on investment. They also examined the effects of uncertainty over policy reforms designed to stimulate investment. They state that if in each year there is some probability that the policy will be reversed; the resulting uncertainty can eliminate any stimulative effect that the policy would otherwise have on investment. The study concludes that interest rate and tax rate are only of secondary importance as the determinants of aggregate investment, whereas changes in interest rate volatility and policy instability may be of more importance.

Blomstern and Arikokko (1997) argued that better investment climate of the country attracts more foreign investment. Foreign direct investment may promote the economic development by contributing to productivity growth and export in host countries. However, the exact nature of the relation between foreign multinational corporate sector and their host countries seem to vary between industries and countries. Economy’s industrial and policy environment are the important determinants of the net benefits of foreign direct investment. Various studies make it
evident that multinationals enter mainly where barriers are high and they invest in industries which satisfy their own goal and also there innovation and technical changes can be done. There is a direct effect of foreign direct investment as well as portfolio investment on factor rewards, employment and capital flows. Thus, the study concludes that if the investment climate of the host country is business friendly it will attract more foreign direct investment which promotes economic development by increasing the production level and export of the host country.

Prefermann, Kisunko and Sumlinki (1999) in their study showed that there is a link between private investment and the various obstacles to doing business encountered in the developing countries. Not surprisingly, those countries in which these obstacles were less onerous had higher level of private investment. The authors concluded that a better business environment leads to higher private and public investment. The more favorable and competitive business environment will lead firms to invest in new technologies, ideas and innovations that allow them to retain their competitive edge. It has been accepted that private sector improves the allocative efficiency of market economy. Resources are channeled to those sectors/industries/firms that can use them in the most productive manner. In-so-far-as private investment embodies newer technologies, it captures two things: capital accumulation and the effects of technological progress. Technological innovation increases the productivity of capital and hence alters an economy as underlying long-run growth rate.

Cheng L.K and Yum, K, Kwam (2000) in their study, examined the determinants of investment climate (IC) which affect the location of foreign direct investment. By examining the effects of the determinants of investment climate in 29 Chinese regions from 1985 to 1995, they found that large regional market as approximated by regional income has positive effect but wage cost has negative effect on FDI. The study further found that good infrastructure as measured by the density of roads attracts foreign direct investment. The effect of education was positive but not statistically significant. It was found that the special economic zones and the key policy designations (including open coastal cities, economic and technological development zones and open coastal areas) have positive effect on foreign direct investment but the impact of the former is far greater than that of the later. Thus, it
can be observed that some determinants of investment climate (IC) have positive and some have negative effect on FDI.

Kelley, N. Martha (2001) studied about the factors which affected the investment climate of Haiti. The factors are given as:

a) Deteriorated physical/social infrastructure includes poor, inadequate and unreliable supply of electricity, water and telecommunications and roads. It also included insufficient and poor quality of schools, clinics and housing.

b) Macroeconomic policy destabilized by a ballooning public sector deficit includes: absence of accountability and transparency in public sector reforms, and deficit financing by central banks crowds out private sector access to credit.

c) Weak institutions in government and society.

d) Political instability and potential violence.

e) Inconsistent application of economic policies.

f) Insufficient domestic sources of investment capital.

g) Weak and corrupt judiciary.

h) Lack of capacity to enforce existing or new laws.

i) Over-reliance on personal relationships with government to resolve issues.

j) Inadequate legal and regulatory framework.

The study found that it becomes vital to express political commitment at the highest levels to improve the environment for investment and entrepreneurial activity. The study suggested that the private sector can and should play a substantial role in advising the government through a consistent and ending policy dialogue intended to provide specific policy recommendations. The study also found that private capital flows can also play an important role in revitalizing Haiti’s economy and also in creating jobs.

Goswami, et al (2002) studied about the investment climate in 10 major states (like: Maharashtra, Gujarat, Andhra Pradesh, Karnataka, Tamil Nadu, Delhi, Punjab, Kerala, Uttar Pradesh and West Bengal) of India. To measure the investment climate in the states, entrepreneurs and managers were asked to rank the investment climate in the states and their ranking created four distinct clusters:
a) The best investment states consisting of Maharashtra and Gujarat  
b) The good investment climate namely Andra Pradesh, Karnataka and Tamilnadu  
c) Medium investment climate states are Delhi and Punjab  
d) Poor investment climate states, consisting of Kerala, Uttar Pradesh and West Bengal.

The study examined how different determinants affect investment climate of various states. The study found that best, good, medium investment climate tends to have lesser number of visits from government officials than the counterparts situated in the poor investment climate states. The study stated that delays at custom houses are negatively related to investment climate. The study stated that because of poor power supply from the public grids, firms are forced to purchase generators sets. Even in the best investment climate states, 45 percent firms have their own generators, whereas, in good, medium and poor investment climate states, the percentages were 76 percent, 86 percent and 84 percent respectively. Not surprisingly, the cost of power was 33 percent higher in the poor investment climate states. The main finding of the study is that high costs in the financial sector adversely affected the investment climate, which require urgent reforms. The study also suggested that there is a serious need for rapidly embarking on the second generation of structural reforms both at the centre and state level.

Hallward, Mary et.al. (2002) studied how the quality of investment climate of China affected its economic growth. Data is taken from the survey of 1500 firms in China. The results of the study stated that, overall firm performance is positively correlated with foreign ownership, R&D, ICT’s staff quality, the share of the firm’s labor force that receives training from the firm and access to external finance. It is also found that excess capacity is negatively correlated with firm performance, while time spent with regulations is negatively correlated with TFP. The main findings of the study are:

a Barriers to entry and exit are associated with lower productivity, sales, employment, growth etc.

b Access to finance is correlated with higher sales, growth investment and productivity
c Increased labor market flexibility is associated with higher sales investment and productivity

d High staff quality is associated with higher sales, investment and productivity

e Access to information technologies and research and development are correlated with better outcomes.

Andrew, H.W Stone (2003) linked investment climate to growth and poverty reduction. It is stated that investment climate is a pillar of development. The creation of a good investment climate is one that encourages firms both large and small, to increase productivity. The private sector is not only the engine of aggregate growth; but at the same it is almost the main provider of economic activity and opportunities to poor people. The author found that in countries like Cambodia, China, Bangladesh, Pakistan, Poland, firm’s employment growth is positively related with FDI, and negatively related with the number of inspections and with the “bribe tax”. It is also positively related with confidence in the judicial system. It is also stated that complexity of entry regulation is associated with higher corruption and lower productivity. Further, it was found that complexity of labor regulation is associated with higher informality and unemployment. The main finding of the study is that investment climate can be better where there is economic integration, free trade, good governance, regulation of entry and exit, and availability of good infrastructure. Thus, better investment climate would result in growth which helps poor people through employment and income gains.

Dollar-David and Dreamier M. Hallward and Megistae Tage (2003) studied the relationship between investment climate and international integration of four countries Bangladesh, China, India and Pakistan. The study states that a sound investment climate as reflected in low customs clearance times, reliable infrastructure and good financial services attracts foreign investment. The foreign firms generally bring superior technology and management and hence raise the average productivity of the firms. Geographical factors and national level policies also matter for foreign direct investment. The study found that the objective measures of investment climate vary significantly across countries and across locations within these countries. The study found that the measures of international integration are higher, where investment climate is good. It can be concluded that good infrastructure and a sound
regulatory environment is needed to take advantage of the opportunities in the international market. Thus, a sound investment climate creates a good environment for domestic investment and for production also.

Hallward-Driemeier et.al (2003) studied the effect of investment climate indicators on firm performance. The study used the survey of 1500 Chinese enterprises in five cities to more precisely define and measure the components of investment climate. The study stated that international integration, entry and exit, labor market issues, finance and technology all have a great impact on firm performance. The study also stated that four measures are taken to measure firm performance like; sales growth, investment rate, productivity and employment growth. The study found that:

a) Barriers to entry and exit are associated with lower productivity, sales and employment growth, while younger firms consistently perform better on all measures.

b) Access to finance is positively correlated with higher sales growth, investment and productivity.

c) More foreign ownership is positively associated with sales, investment and employment growth.

d) Increased labor market flexibility is associated with higher investment and productivity.

e) Access to information and technologies, research and development are correlated with better outcomes.

f) High staff quality is associated with higher sales, investment and productivity. Investment in worker training is positively correlated with faster sales growth, investment rate and also productivity.

g) Excess capacity is negatively correlated with firm performance and time spent with regulations is also negatively correlated with TFP. The study concluded that overall China’s growth performance was very impressive, but differences in the initial endowments, regional discretion in policy making, tax arrangements as well as leadership turnover patterns have led to strong regional variations in the investment climate.
World Bank (2003) studied about the investment climate in Bangladesh. The study used the data from survey 2002 of 102 manufacturing firms in Bangladesh and also tried to find out the variables of investment climate which affect economic growth and development. The main findings of the study are:

a) Infrastructure poses some of the most severe obstacles facing firms and it seriously hamper firm’s growth.

b) Electricity problems plague firms in Bangladesh; as a result, more than 70 percent firms rely on electric generators at great expenses. The study found that average wise, these generators cost more than $20,000 to purchase and 50 percent more per-kilowatt-hour to operate than price of power from the public grid.

c) More than half of the firms, reported corruption as a major or very severe obstacle.

d) Firms view regulation as a serious problem. Starting a firm in Bangladesh is fairly difficult.

e) Finance is also recorded as a major problem to firm’s growth.

Thus, all these problems affect small and medium-sized firms. The study suggested that to improve investment climate reforms needed in Bangladesh are like: unbundling electricity generation and transmission, encouraging private investment in the power sector, corporating the ports, increasing accountability in the civil service and streamlining regulatory procedures etc.

Fabina Bastos and J. Nasir (2004) in their study, examined that there is a strong link between investment climate indicators (IC) and firm level productivity. The study found that if the investment climate of the firm is business friendly, the productivity of the firm will be more. The authors state that investment climate is the policy, institutional and regulatory environment in which business must operate. It was observed that countries where property rights are secure, the government provides efficient services, and infrastructure is well developed, are considered to have a good investment climate and a good investment climate reduces the cost of doing business and leads to higher and more certain returns on investment.

The study also found that competitive pressure is the most important factor which determines productivity. In highly competitive and dynamic economies,
inefficient firms are driven out and surviving businesses are forced to seek continuous improvement. The study suggests that the quick steps of the government can increase competition which will have a big pay off in firm performance. The study also suggest that investment must be accompanied by liberalization, which allows market competition to ensure that resources are efficiently allocated.

Ali Ifzal (2005) studied Indonesia’s investment climate based on the results of the investment climate and productivity study (ICS) in 2003. The study states that Indonesia has achieved macroeconomic stability but with low investment, the current growth rate of 4-5 percent per year is not enough to significantly increase per capita income and also to accommodate the increasing number of new entrants to the labor market and to reduce poverty. The study found that reasons behind the poor growth rate in Indonesian firms are as:

a) Macroeconomic instability, economic and regulatory policy, uncertainty and corruption are the most severe business obstacles affecting Indonesian firms.

b) Access to finance, labor regulations and shortage of power are the major problems for the firms.

c) Decentralization has led to deterioration in the business climate, especially in terms of worsening of economic and regulatory uncertainty.

The study suggested that to increase the growth rate of the firms, the country should undertake institutional reforms in the key areas. The government needs to provide assurance, contract enforcement and property rights and to uphold policy creditability and consistency. A better budget allocation between local and central government is also necessary to ensure that local governments have sufficient resources to undertake their new responsibilities and to stop them reporting to nuisance taxes. There should be availability of adequate physical infrastructure for setting up and running a business on a daily basis to attract new investment. There should also be introduction of new package of incentives to win over both foreign and domestic investor’s confidence. Thus, the study concludes that the improved investment climate will increase the productivity level of the firms.

Somik V. Lall and Taye Mengistae (2005) studied about business environment, clustering and industrial location. The authors attempt to find out how do differences in the local business environment influence location of industry and how do the
benefits of a good business environment compared to benefits from good market access. The authors used the firm level data, from ICS for India and found that the local business environment has a significant bearing on location decisions. The study found that predatory enforcement of business regulations and excessive labor regulations had adverse effect on location decisions, while availability of infrastructure and access to finance and land had positive impacts. The study also found that new firms choose to locate production in areas that are already established centers in their line of business. Thus, the study concluded that agglomeration economies and the local business environment jointly influence business location decisions which imply that smaller or remote cities need to offer more a business friendly policy environment than more geographically advantaged locations.

World Bank (2005) in its report, state that better investment conditions can directly improve efficiency, encourage the adoption of better technology and strengthen the incentives for investment in physical and human capital. It was found that a good investment climate encourages higher productivity by providing opportunities and incentives for firms to develop and adopt better ways of doing things. The study concludes that market friendly investment climate has an obvious role in influencing the level of private investment. Improved investment climate that provides the opportunities, and incentives for firms to invest productively, create jobs and expand, is the key to sustainable progress in attacking poverty and improving living standards. It also contributes to an expanding tax base that allows governments to invest in health, education and welfare of its people. Thus, the evidence confirms that improving the opportunities and incentives for firms to invest by reducing unjustified costs, risks or barriers have the predicted positive effects.

Mills, Rob and Qimiano (2006) studied about investment climate in post conflict situations. They state that good investment climate provides platform for vibrant private sector activity. Conflict corrodes this platform. It reduces physical security, undermines macroeconomic stability, threatens the rule of law, dries up access to credit and financial services, destroys infrastructure, labor markets, disables the regulatory framework and dismantles the tax system. They found that attention needs to be paid to the broader “enabling environment”, including institutions, governance, capacity and social capital. They state that a vibrant private sector underpinned by a good investment climate is particularly important in the post –
conflict recovery phase for three reasons: it generates employment, provides public services where the state has retrenched and builds social capital. They suggest that for reforming the investment climate, firstly greater effort is needed to ensure that private sector development reforms are included in the first round of post-conflict policy making. Secondly generating ownership of reforms and enhancing local capacity to implement them is key to sustainable improvements in the investment climate. Thirdly, development partners have an important role to play but at the same time development partners need to ensure that their presence in the post-conflict economies does not damage the very sector they are trying to support. Finally, it should be ensured that private sector is more fully involved in post-conflict reconstruction activities.

Perina, M. ER Nesto and Sales J.M. Ian. S (2006) studied about the Philippines investment climate of manufacturing firms. The study states that private sector development is the key to country’s long run economic growth and poverty reduction; steady increases in investment and productivity underpin the evolution of the private sector. It is found that countries with the better investment climate tend to have higher rate of capital accumulation. Higher rate of capital accumulation in turn, fuels productivity and economic growth. Increases in investment and productivity lead to rapid and sustained growth, resulting in substantial poverty reduction. By examining the relations between investment climate and firm performance the authors state that performance of a firm can be measured from different indicators like TFP, labor productivity, investment rate and employment rate. The authors compiled provincial data on infrastructure, social and demographic indicators from 1988-2000, which offer a better clue to the location specific quality of the business environment.

The study found that labor productivity is positively and strongly influenced by road density, electrification and port base water supply coverage. At the same time dependency ratio has a negative and significant effect on labor productivity, indicating the expected adverse saving and capital swallowing effects in high-fertility provinces. Investment in educational facilities is also strongly and positively related to labor productivity. Political dynasty that tends to conduce to corruption is negatively associated with provincial economic performance. The study concludes that a better investment climate is good for the long term development of the private sector and the economy in general. The study suggests that making positive changes on all aspects of
the investment climate to hasten and sustain national and regional development is the collaborative effort of both public and private sector of the economy.

Aterido Reyes et.al (2007) studied about the role of investment climate on employment growth. The authors used firm-level data of approximately 70,000 enterprises in 102 developing economies and five high income economies to assess the effects of the broader business environment on employment growth by firms, focusing on the size dimension. The study found that low access to finance, corruption, poorly developed business regulations and infrastructure bottlenecks shift downward the size distribution of employment. Low access to finance and ineffective business regulations reduce the growth of all firms, especially micro and small firms. Corruption and poor infrastructure create growth bottlenecks for medium and large firms.

The study states that micro and small firms have less access to formal finance, pay more in bribes than the larger firms and face greater interruptions in infrastructure services. Larger firms spend significantly more time in dealing with officials and red tape. To make clearer the effect on investment climate on employment growth, the authors gave an example that Argentina and Mexico increased the share of external financing for investment by 10 percentage points, but the increase in employment by only 5 percentage points. The same increase in finance for working capital would raise employment by 8 percentage points. It was observed that in Argentina, reducing the incidence of corruption by 10 percentage points would increase overall employment in the business sector by 0.5 percentage points only.

Giuseppe Larrossi (2009) in his study, attempted to identify the characteristics of the business climate in India that can help to explain the different performance of different states in terms of investment and growth. The author used the investment climate survey data by World Bank in 2005. The author identified 46 variables descriptive of the business environment in 16 states and grouped them in three categories i.e. inputs, infrastructure and institutions. The author constructed investment climate index and by ranking the states according to this index, it was found that the states with the best investment climate are Karnataka and Kerala followed by Gujarat, Andra Pradesh, Haryana, West Bengal, Maharashtra and Delhi. The worst investment climate is on the contrary found in Bihar, Uttar Pradesh and
Rajasthan, Tamilnadu, Punjab, Jharkhand, Orissa, Madhya Pradesh are on the average according to ranking. It was found that infrastructure and institutions remain the main bottlenecks in the country’s private sector development. More specifically, power, transportation, corruption, tax regulations, and theft are the major factors explaining the poor business environment in some states. Infrastructure appears to be the single most important constraint as it is particularly binding in states that show low levels of domestic investment and GDP growth.

Kathuria, et.al (2010) studied about investment climate, state business relations, and firm performance in India. It is stated that a better investment climate is that where there are lower distortions in the institutional, policy, and regulatory environment in which firms operate, which further lead to discernible improvements in firm performance. By examining the effect of effective state-business relations on total factor productivity (TFP) for formal manufacturing sector firms in India for the years 1994-1995 and 2000-2001, it was found that state business relations have positive effect on TFP of the formal manufacturing sector. The study found that the state business relations can enhance firm performance by positively affecting two proximate determinants of firm growth like the rate of factor accumulation and the growth of total factor productivity. Further, it was found that greater transparency in the flow of information between state sector and the business sector leads both to a better allocation of investments by the business sector to their most productive uses and by reducing policy uncertainty in the minds of investors. A higher rate of investment, higher creditability of state actions lead to less problems of time and dynamic inconsistency of government policies, providing a more favorable environment for investment to occur.

It is also stated that effective state-business relations can mitigate both market failures and government failures which are pervasive in most developing countries and by doing so; there is an improvement in the performance of firms. The study also suggests that it is important to improve the quality of public goods provided by the sub-national state governments which can further enhance the impact of other sub-components. It is also suggested that collaborative relationships between the state and the business sector can be performance enhancing and the goal of policy should be to strengthen such relationships.
In this section, studies related to the relationship of investment climate with total factor productivity (TFP) and also with industrial growth and profitability have been reviewed.

Somayajulu (1974) examined the variables affecting industrial structure and traced the resultant industrial growth and development during the planning period. He measured the changes in the industrial structure in India in terms of changes in size and structure of different industries. Size is measurable in different ways: volume or value of output, value added or net output, number of workers employed, fixed capital or total capital, quantity of raw material or amount of power consumed, number of production per unit capacity as maximum rate of production per unit time etc.

Analysis of the industrial structure by employment proportions indicated that during the first plan period agro based consumer goods and machinery based investment goods industries were relatively more important than the raw material and intermediate goods supplied by mineral based, metal based and chemical based industries and the electricity sector. But, during the second and third plan periods the proportion in employment of agro based consumer goods industries decreased whereas that of the investment goods and intermediate goods industries increased. Shifts in the industrial structure in terms of value added proportions were more striking than those depicted by changes in employment proportions and they were significantly more pronounced after 1956. The long term growth rate of industrial output during 1951-1970 was 6.5 percent per annum (with 1960 base). The disparities in growth rate of other sectors of industry indicated that the supply bottlenecks would continue unless import liberalization of specific items was intended to ease these bottlenecks and promote industrial growth. The study also showed that during 1956-65, the employment proportions of modern industries did not raise as much as the value added proportions as they are capital intensive and labor saving in nature.

Goldar (1983) examined productivity trends of Indian manufacturing sector and examined Total Factor Productivity (TFP) by applying Solow Index and Translog Index using, first 1951-65 data, covering all Census of Indian manufacturing (CMI) industries except general engineering and electrical engineering for 1951-58 and comparable data for 1958-78 based on ASI. These analyses estimate a rising trend in
labor productivity and capital intensity and a falling trend in capital productivity during this period. Growth in TFP seems to have been rather sluggish and its contribution to output growth was quite small. The observed rise in labor productivity may accordingly be attributed in the main to increasing capital intensity. Substitution of labor by capital seem to have been the main feature of industrial growth. The results of Cobb-Douglas function estimation seem to favor the assumption of constant returns to scale implicit in the TFP indices and appear to be in broad agreement with the results based on TFP indices, especially in terms of the direction of TFP growth.

The study has pointed out that the general industrial situation was not conducive to productivity growth. Under utilization of capacity, shortage of fuel, power and transport facilities and deteriorating industrial relations had a significant depressing effect on productivity growth. Moreover, gestation lags in the basic and capital goods industries that accounted for a dominant part of investment in post 1956 period must have had a depressing effect on productivity growth. Finding of the pronounced rising trend in capital intensity implies that the growth in industrial employment has seriously lagged behind the growth in industrial investment and output. To some extent; this is a result of the changing industrial structure in favor of basic and capital goods industries. It has been shown that metals, chemicals, rubber, petroleum and machinery are among the lowest ranked in terms of TFP growth.

Dabir-Alai (1987) examined trends in productivity growth across large scale manufacturing industries of India using the 1973-74 and 1979-80 input output tables and Two-digit industrial data printed in ASI. Solow Index and Kendrick index has been used to estimate TFP growth. In the study, the authors found conflicting evidence to the widely held view of their having been a decline in the rate of productivity growth of the manufacturing sector of India over the period of 1970’s. The study found widely fluctuating capital intensity, labor and capital productivity figures for the bulk of the manufacturing industries reviewed. The results presented by the table of ‘TFP’ growth two digit manufacturing industries highlight considerable variations within broad industrial groupings which go some way towards explaining the wide fluctuations observed in the productivity indices. On the whole the figures show that the manufacturing sector is dominated by industries whose TFP growth has remained positive over the above mentioned period.
Gupta (1990) made an attempt to find out the variables behind the major productivity trends in the automobile industry in India. The data for the study were taken from the various issues of “Annual Survey of Industries-Factor Sector” published by the Central Statistical Organization (CSO), New Delhi. The study was confined to the period 1973-74 to 1983-84. The author worked out labor productivity, capital productivity and TFP growth. He also fitted Cobb-Douglas Production function. It has been observed that both capital and labor productivity have increased in automobile industry. Also the trend of TFP growth which is measured by Kendrick Index is found to be positive. The study confirmed the presence of constant returns to scale in the Indian automobile industries. The same trend has been observed in the sub-sectors viz - manufacture of motor vehicles and parts, and manufacture of motor cycles and scooter parts. Further it was evident from production function analysis that the returns to scale were almost constant in these segments of automobile industry. The positive and the significant co-relationship between partial labor productivity and wage rate and between partial labor productivity and rate of return on capital indicate important implications for planners.

Raikhy and Gupta (1991) analyzed the growth performance of Indian industry and computed the total factor productivity (TFP) indices on the basis of latest data taken from Annual Survey of Industries from the period 1973-74 to 1985-86. It was concluded that the decline in total factor productivity growth would further deteriorate India’s competitive position in the international market. Further, in view of the low contribution of the total factor productivity growth to output growth coupled with rise in capital intensity, it was difficult to sustain the tempo of high growth witnessed in industry during the 1980s.

Vijaya, Kumar (1996) analyzed the productivity trends in the public sector steel industry in India in terms of labor productivity, capital productivity and total productivity for the year 1981-82 and 1993-94. He measured the trends using four methods of productivity viz. Direct method, Kendrick index, Solow index and Divisia index. He also attempted to explain factor productivity. It has been observed that TFP showed a rising trend till end of 80’s and then falling by the beginning of the 90’s. The labor productivity showed a rising trend, whereas capital productivity showed falling trend. The annual growth of TFP, labor productivity showed a rising trend. Further, the study reveals that annual variations in factor productivity show a positive
relation with value added and negative relation with time for the public sector steel industry. Generally while growth in value added has been generating productivity, deteriorating labor management relation has been depressing productivity.

Baghel and Pendse (1997) made an attempt to analyze productivity trends and statistical estimation of production function and technical change in the aggregate manufacturing sector of India. The ASI data for the period 1973-74 have been utilized for computing Solow and Kendrick indices of TFP growth along with partial productivity indices of labor, capital and raw material and econometric estimation of Cobb-Douglas, CES and VES production functions. The analysis revealed that Indian manufacturing sector has not experienced technological change which was evident from the growth rates of TFP growth indices as well parameters of time variable in the production functions. The excessive doses of capital have not resulted in technological progress in Indian manufacturing sector as the capital intensity is found to be increasing all time. The study suggested that there is a need to promote R&D efforts in the manufacturing sector of India so that it may survive in the newly emerging era of globalization and liberalization.

Ray (1997) used the non-parametric method of Data Envelopment Analysis to measure Malmquist productivity indices for manufacturing sector in the different states of India during 1969-84. The measured Malmquist index is used to decompose the contribution of technical change, change in technical efficiency and change in scale efficiency. The analysis shows an average decline at the rate of 2.89 percent overall. At the individual level, although most states experienced productivity decline, considerable regional variations were evident. A non-parametric decomposition revealed that regressive technical change accounts for most of decline in productivity. A multivariate regression analysis have been carried out with average annual productivity growth rate in any state as dependent variable and a number of socio-political and economic variables as regressors. The results of regression analysis showed that while an increase in degree of urbanization and in the capital labor ratio fastened productivity growth, a higher proportion of non-production employees to production workers hinder productivity increase. Also worsening industrial relations resulting in a higher number of man days lost per worker deterred productivity growth.
Yousefi (1997) in his study examined the impact of resource mobilization, amount of investment undertaken and the availability of natural resources affecting Iran’s industrial growth. It is generally believed that industrial development is affected by the extent of resource mobilization and amount of investment undertaken in different sectors within manufacturing industry. His results show that the level of industrial output is significantly and positively affected by the level of income and level of investment is negatively affected by the level of endowments of oil resources. His results indicate that the capacity of a country to generate manufactured growth from internal resources is positively related to the extent of resource mobilization within the country which is roughly measured by the share of investment in Gross Domestic Product. This implies that resource mobilization and expansion of production capacity are likely to have a greater impact on the endogenous growth of the country. The author states that concentration in production and export of oil tended to be negatively correlated with structural changes and industrialization of oil-producing countries. In short, it can be said that amount of investment, availability of the natural resources in the country affects country’s industrial growth.

Neogi and Ghosh (1998) tried to see the impact of liberalization on the performance of four-selected industry groups, namely (1) chemical, (2) textile (3) non-metallic mineral products, (4) electric machinery, by using firm level data for period 1989-94. The performance indicators chosen to verify the impact of economic reforms on the firms were labor productivity, growth of value added, capital intensity and total factor productivity (TFP). The estimates of technical efficiencies of selected groups have been obtained by using frontier production model with the help of Corrected Ordinary Least Square (COLS) method. The results indicated that productivity growth and efficiency levels have not improved as per expectation during the post-reform period and the distribution of efficiency is skewed. The TFP growth has fallen very sharply during the period of reforms with the exception of chemical industry. The relationship between labor productivity and capital intensity indicated a general downfall of efficiency of the firms during the study period. The level of technical efficiency for all the industries was found to be very low and no significant improvement has been observed in this level during the post reform period.

Pradhan and Barik (1999) captured the total factor productivity growth during the period 1963-93 for aggregate manufacturing sector and eight selected industries
by estimating the Translog cost function. The scale factor for aggregate Indian manufacturing sector was found to be less than unity and deceleration in scale factor during the 1980’s has been noticed. Except pulp and paper, a deceleration in scale factor has been found in all industries in 1980s for aggregate manufacturing sector and most of individual industries, declining trend in technical change has been noticed in recent years. On the whole, a declining trend of TFPG in Indian manufacturing sector-both at aggregate and disaggregate levels has been noticed. The study observed that a decline in both scale economies and technical change seem to have produced the present character of TFPG, although decline in the latter does not appear to be as sharp as the former.

Vete, Karaki, Haekar (1999) analyzed total factor productivity (TFP) in the manufacturing sector in Maharashtra, Tamilnadu, Andra Pradesh, Gujarat and Karnataka using affixed effects panel data technique for estimating manufacturing sector wise production functions. The study used ASI data for the analysis purpose. The main argument of the study was that computation of TFP assumes constant returns to scale and competitive factor markets. Given these requirements it is not theoretically correct to estimate individual sector specific Cobb-Douglas production function, which will yield, sector specific labor and capital elasticities. Under the assumption of constant returns to scale and perfect competition in the factor markets, labor and capital elasticities must be identical across sectors.

Grigorian, David and Albert Martinez (2000) studied about investment climate indicator (i.e. institutional quality) and industrial growth. The study found significant evidence of the effect of the institutional quality and legal indicators on industrial growth in 27 Asian and Latin American countries. The study stated that a developed legal and regulatory framework, good enforcement and low administrative barriers affect industrial growth not only by increasing the amount of investments made available in the economy but also by improving the efficiency of resource allocation. The study further stated that in the absence of an adequate regulatory framework and supervision, the ability of domestic banks to mobilize funds will be strongly undermined by the lack of depositors’ confidence. This will draft funds abroad and generally away from viable domestic investment opportunities. On the other hand, under inefficient property and an underdeveloped system of title registration, realizing liquidity from collateral can be quite costly.
The study suggests that policy makers should devote resources and efforts to reducing corruption, eliminating bureaucratic barriers, improving contract enforcement and the legal environment. Separate attention should be given to measures which are capable of improving financial sector infrastructure and increasing the efficiency of financial transactions. The main policy recommendations made in this study are that institution building in Transition countries should be essential complementary measure to accompany privatization, more flow of public and private investments in education and research and development, and also measures should be adopted to promote foreign direct investment.

Kumar (2001) explored the effect of various socio-economic variables in explaining the inter-state differentials in total factor productivity growth of Indian manufacturing sector. Using the Annual Survey of Industries data for the period 1969-1995, the study revealed considerable inter-state differences in TFP growth in the Indian manufacturing sector. The industrially developed states experienced either a decline or low growth in TFP during 1969-95. The deregulatory policy regime interpreted a positive effect on the TFP growth of Indian manufacturing sector at national and state level during 1980’s. The most recent phase of liberalization since 1991 failed to mark any significant dent on TFP growth pattern of Indian manufacturing sector. The multivariate regression analysis determining the factors responsible for inter-state differentials in TFP growth highlighted that TFP growth is positively associated with in the degree of urbanization and growth of infrastructural facilities. Further, the higher bureaucratic control worsening industrial relations due to increase in man days lost per employee hampered the TFP growth.

Singh (2000-01) computed total factor productivity for a sample set of ten industries in the manufacturing sector in India. The study uses annual data from 1973-74 and was collected from the various issues of Central Statistical Organization (CSO) publications viz. National Accounts Statistics and Annual Survey of Industries (ASI), the Reserve Bank of India (RBI) publications viz. Report on Currency and Finance and RBI Bulletin and the Government of India (GIO) publications viz. Economic Survey and Index Numbers of the Wholesale Price. The results show that the TFP recorded improvement in all the sample industries except for the basic metals industries in which the TFP witnessed a declining trend during 1973-74. The highest growth in TFP was observed in the case of the food product industry followed, in
declining order, by the transport equipment, non electrical machinery, the wool and silk textiles, chemicals and jute textiles. Policy initiatives (adopted since July 1991) aimed at the removal of controls and creation of competition in the industrial sector had important implications for TFP and the process of overall economic growth. These policy initiatives had brought several changes in both the real and financial sector of the economy. These changes had created a more conducive and competitive environment in the economy and this had favorable effects on the total factor productivity.

Mitra, et.al (2002) in their study, examined the effects of infrastructure on TFP and technical efficiency of the manufacturing industries in 15 states of India. The study used annual data from 1976 to 1992 for 17 industries. They observed marked disparities in terms of physical, social and economic infrastructure across the states. Using the principal component analysis, a composite indicator of infrastructure availability was developed. The studies ranked the states at the top in terms of infrastructure availability. These were Maharashtra, Punjab and Gujarat followed by Tamilnadu, Karnataka and Kerala. States on the lower end of the scale included Assam, U.P and Bihar followed by Orissa, Rajasthan and Madhya Pradesh. The major finding of the study is that infrastructure endowments have a significant role towards explaining the variations in TFP and technical efficiency across the state industries. Thus, the study suggests that to increase industrial TFP and technical efficiency

a) There should be increase in investment in primary education.

b) There should be increase in efficiency of the state’s financial system in terms of deposit mobilization and credit distribution.

c) The potential of power production should be enhanced.

Banga (2003) analyzed the impact of the source of foreign direct investment on its productivity growth. Productivity growth in the Indian manufacturing sector is carried out for a period of 1993-94 to 1999-2000. The author carries out the estimation at three levels. The productivity growth in the manufacturing sector is carried out for Japanese affiliated, US affiliated and domestic firms namely automobiles, electrical and chemicals. Her results show that affiliation with foreign firms of different countries of origin would lead to differential impact on TFPG (total factor productivity growth) of a firm. She finds that Japanese-affiliates enjoy higher
productivity growth, after controlling for other firm specific and industry specific effects compared to the U.S affiliates. Total factor productivity growth can occur either due to technological progress, that is, due to shift in production function or due to efficiency improvements in the firm. She deploys Data Envelopment Analysis (DEA) using panel data set to further disaggregate the technical efficiency change indices. The results suggest that the major source of Total Factor Productivity Growth in all the three industries for Japanese-affiliated firms is increase in efficiency while for the U.S affiliated firms it is mostly technological progress. She further stated that as the Japanese firms have managerial advantages like management techniques, just in time delivery, total equity management and quality circles these all increase the total factor productivity growth.

Dollar, et al. (2003) in their study, examined the effect of investment climate on the productivity growth. The study concluded that the quality of institutions exert a very strong determining effect on the aggregate economic performance of countries. The results indicate that the firms in garment sector of four Asian countries (Bangladesh, China, India, and Pakistan) find that a better investment climate causes higher level of total factor productivity, factor returns, capital accumulation and growth. The study places at the centre stage various dimensions of investment climate in the determination of total factor productivity in manufacturing sector across the major Indian states. Thus, the study assumes particular importance of investment climate in the light of emerging progress during the reform period.

Goldar and Kumari (2003) examined the impact of import liberalization on productivity growth of Indian manufacturing industry in the 1980’s and 1990’s. The estimates obtained indicated that during the 1990’s, a decade of major industrial and trade reforms, there was a deceleration in TFP growth in manufacturing. The study found that

a) Capacity utilization was a significant factor influencing productivity growth in manufacturing industries.

b) There was an increase in capacity utilization in manufacturing in the 1980’s and fall in the 1990’s.

After making corrections for making changes in capacity utilization, the TFP growth estimates for the 1990’ were found to be about the same as in previous decade.
Multiple regression analysis was carried out to study the factors influencing TFP growth in manufacturing industries. The results showed a significant favorable effect of tariff reforms on industrial productivity. The results also indicated that slower growth of agriculture in the 1990’s and gestation lags in investment projects might have had adverse effect on TFP growth in Indian manufacturing sector in this period.

Kalirajan and Bhide (2003) explored the question whether the manufacturing sector of India is an engine of growth or not. By using Center for Monitoring Indian Economy (CMIE) database, Prowess, Annual Survey of Industries data and National Accounts Statistics, the study revealed that after 1991 economic reforms, it appears that the speed of the engine of growth has slowed down. Using data envelopment analysis (DEA) study examined the trends of total factor productivity to answer the above question. Rising total factor productivity in Indian manufacturing sector has been supposed to be an engine of growth. It has been observed that in the post reform period TFP growth is very slow. The analysis revealed that unlike in the Chinese case manufacturing output growth in the post reform period has been input driven rather than efficiency driven.

The analysis indicated that on the average about 15 percent output growth could be achieved by improving efficiency of the production unit without having to increase any inputs. The responsibility for improving the efficiency in production process appears to be with the strategic decision making at the firm level. The national survey of manufacturing industries indicated that though the firms do indicated the importance of research and development to improve competitiveness; they seem to overlook this aspect. Policy measures should aim at encouraging firms to invest more in research and development, providing technical training program for workers and facilitating managers with computer aided design and decision making process.

Sharma and Upadhyay (2003-2004) examined the Total Factor Productivity (TFP) in Indian fertilizer industry, using the Translog cost function to estimate the different components of TFP like returns to scale, technical progress, elasticity of substitution, scale bias and technical bias over the period of 25 years from 1973-74 to 1997-98. Translog cost function suits the fertilizer industry well as the adjusted $R^2$ turned out to be 0.9875 which is significant at 5 percent level of significance. The analysis also confirms that a flexible model, which allows non-homotheticity and
varying returns to scale, can adequately represent the production structure of Indian fertilizer industry. Therefore, translog specification represents the production as well as the cost structure of this industry very well. Over the entire study period, the industry witnessed scale economies which have been less than one with more or less fluctuating pattern till eighties. However, during nineties there is a continuous increase in the growth rate of technical progress over the study period. One interesting finding of the study is that technical bias as well as scale bias has been in favor of material input only. In case of other inputs, the bias is not significant. Another finding of the study is that means that output can be produced beyond the installed capacity without adding to the capacity by using more material and energy.

Chattpadyay, S.K (2004) examined the trends in Total Factor Productivity (TFP) of manufacturing sector in West Bengal. The paper examined the overall industrial scenario of West Bengal as a whole vis-a-vis all India, and for some selected groups of industries of West Bengal using ASI data. The study revealed that the state of West Bengal has lost its earlier status of one of the highly industrialized state of the country. Its share to all India, net value added, share of employment and factories has come down drastically. Profitability of the total manufacturing sector has gone down. Productivity of the capital of the manufacturing sector has declined, while labor productivity has increased. However the latter has increased mainly due to a few industry groups, which are highly capital intensive and have contributed around 85 percent of the profits of total manufacturing sector. The study also found that total factor productivity of West Bengal’s manufacturing sector as a whole has been declining, while it has been increasing in case of India. The TFP of six industries group which played a dominant role during the early 1960’s, has gone down except jute industry, which itself is a dying industry. That means no new industry groups have come up to take up the position of these industries, which have been performing badly. Therefore, while the state of West Bengal has shown an impressive improvement in case of rural sector, industry slowdown has not been arrested yet in the state, due to poor investment climate.

Veeramani and Goldar (2005) investigated the influence of investment climate on total factor productivity in the registered manufacturing sector across the major Indian states using the database from the Annual Survey of Industries for the period 1973-74 to 1997-98. For making the estimates of TFP (Total Factor Productivity),
data have been drawn mainly from this database. For 1998-99 and 1999-00, they made use of a special tabulation of the ASI data according to NIC-1987, which was prepared by the Central Statistical Organization (CSO).

The study found that a market friendly investment climate is important for achieving higher level of Total Factor Productivity (TFP). This conclusion was very robust, unaffected by the choice of investment climate indicator. The study concluded that the new investment will be undertaken in a particular location only if the investment climate (IC) is business friendly. Evidently, the most effective way to eliminate regional inequality was to ensure that the lagging states initiated reforms to make their investment climate (IC) market friendly. At the same time, there was scope for initiating policy measures with a view to improve the overall or particular dimension of the investment climate in almost all the states. A market friendly investment climate does not mean that the regulatory function of the government should be done away with. The government regulation is crucial to address market failures and to protect social interests, but the policies and practices of the governments should be transparent and designed without distorting the incentives of the firms to invest and grow. In the era of economic liberalization, the government has a critical role to play to ensure security of property rights, by investing in the development of social and economic infrastructure, and by ensuring a smooth functioning of the finance and labor markets.

David Dollar, Mary. H-Drimeier and Taye-mengistae (2005) studied about investment climate and firm performance in developing economies. They state that investment climate is that institutional policy and regulatory environment in which firms operate - factors that influence the link from sowing to reaping. They further state that if the local government is highly bureaucratic and corrupt and if government owned provision or regulation of infrastructure and financial services are inefficient so that firms cannot get reliable services, then returns on potential investments will be low and uncertain and one would not expect much accumulation and growth in these environments. By contrast in developing locations that create a good governance and business environment, returns and accumulation should be high.

The study also found that in a sample of 4 countries (China, India, Bangladesh, Pakistan), all these countries had similar Per Capita Gross Domestic Product in 1990, but in the subsequent decade their growth rates were 7.2 percent, 4.1
percent 2.7 percent and 1.3 percent respectively. They further assumed that locations whose investment climates are better would have greater factor prices. In short, better investment climate leads to both higher wages and higher returns to capital. The higher returns to capital lead to faster accumulation and growth. Thus, better investment climate is essential to achieve higher rate of growth.

Uma, Subramanian and W.P. Anderson and Kinnon Lee (2005) in their study, measured the impact of investment climate on total factor productivity in China and Brazil. They state that the economic performance of a firm is influenced by two types of factors. The first type comprises internal factors such as the technology embodied in the firm’s capital stock, its management practices and its marketing strategies. The second factor type may be referred to collectively as the investment climate: the policy and institutional environment in which the firm functions. A firm’s TFP depends on characteristics of the firm itself and on characteristics of its external environment that affect its economic performance. The external environment of the firm means its investment climate comprises variety of factors such as labor resources, public utilities, regulation and bureaucracy, logistics, competition etc. all have a great impact on productivity of the firm. The study found that the role of investment climate variables in addition to firm’s internal characteristics is very valuable. The authors state that among the investment climate variables, customs clearance time has a strong negative effect on TFP for both China and Brazil.

Another result states that e-mail usage has a strong positive effect on productivity and poor utility services have negative impact in both countries. The study concluded that older firms with lower market shares have higher productivity. The study also found that, in the case of the electronics industry, age has a negative impact on TFP and market share has a positive impact. The study also draws the conclusion that electronic firms located in the lagging northeast region have higher productivity than those in other regions, while apparel firms located in the northeast are less productive.

Fernandes, M. Ana (2006) studied about the determinants which affect TFP in Bangladesh from the period of 1999-2003. The main findings of the study are as: The study states that there was an inefficient allocation of resources within the pharmaceuticals, leather/footwear, and textiles industries during the sample period, as
less productive firms have a higher share of total industry output. Smaller firms are significantly more productive than firms in the largest size category (more than 500 workers). The study found that firm’s age and TFP exhibit an inverse-U-Shaped relationship. Firms with a more skilled workforce and more educated or more experienced managers are more productive. Firms Total Factor Productivity (TFP) benefits from integration into world markets: foreign owned firms and exporters have significantly higher TFP. The study also found that firms with staff engaged in R&D activities and firms with quality certifications have higher TFP. Firms with an overdraft facility have significantly higher TFP and firms with access to bank loan have significantly lower TFP. Power supply problems have a significant negative effect on firm TFP and the presence of crimes in industries and locations hurt firm’s TFP. Thus, the study concluded that all the above said variables have significant effect on TFP of the firm.

Philips, M. Lauren (2006) studied the relation between investment climate and TFP in Asian countries (Bangladesh, Cambodia, India, China, Indonesia, Pakistan, Philippines and Sri Lanka). The study stated that investment climate is the broad set of political, economic, legal and physical factors which make a given country an attractive designation for foreign investment, and a place in which domestic entrepreneurs of all sizes and across countries are willing to invest. The study stated that there are two important components of investment climate that affect TFP—governance and infrastructure. Governance refers to characteristics such as corruption, transparent judicial systems and favorable competition policy etc. and on the other hand, infrastructure includes irrigation systems, ports, roads, bridges, airports and telecommunication etc.

The study found that economic and political uncertainty both are the largest concerns in Indonesia and are notably lower in both India and China. It was found that economic risk in Indonesia is less than that in Pakistan and China. Another determinant of investment climate is confidence in the judicial system, which was pronounced in China, India, Indonesia, Philippines and Sri Lanka. The perception of anti-competitive practices and crime, theft and disorder are found higher in Bangladesh and Cambodia than other countries.

Another main finding of the study is that, small firms face obstacles in almost all the countries to access an overdraft, and in many cases, collateral rates are higher.
for small firms than in medium and large firms. The study also found that cost and access to financing are particularly problematic in Bangladesh and Pakistan. The study suggested that to make the investment climate more business friendly and to increase the TFP level, there is a great need to make reforms.

The study stated that Asian governments would benefit from focusing reform efforts encouraging investment in infrastructure and reducing the regulations which increase the time cost of doing business. Another suggestion is that, promoting regional links in trade will naturally facilitate a greater harmonization of key aspects of the investment climate –such as regulatory regimes. International partners can therefore facilitate these opportunities by reviewing their bilateral, regional and multilateral trade partnerships with Asia for matters in which regional cooperation can occur, including simplifying rules of origin under regional preference schemes. The study also suggested that a more effective and systematic public-private dialogue process should be encouraged to engage the private sector’s help in improving public policy for private sector development in the region.

Escribano, Alvaro et.al. (2008) studied about investment climate and firm performance in Turkey. The study states that improving the investment climate is a key policy instrument to promote economic growth and to mitigate the institutional, legal, economic and social factors that are constraining the convergence of per capita income and labor productivity of Turkey relative to more developed countries. The study identifies that the main investment climate variables that affect economic performance are: total factor productivity, employment, wages, exports and foreign direct investment. The authors state that TFP in Turkey’s manufacturing firm is very important to enhance international trade. For FDI, the most important investment climate block is quality innovation and labor skills. The two main individual elements are the education of the manager and the internal training done at the firm level. It is also found that the time taken by customs for imports is also a great bottleneck for attracting FDI. Thus the study concluded that better investment climate attracts more FDI which results into the better economic performance of the firm.

Kinda, Tidiane et.al. (2009) studied about firm’s productive performance and the investment climate of 22 developing economies and 8 manufacturing industries. To measure productive performance three measures are proposed: labor productivity, total factor productivity and technical efficiency. These indicators are compared to
each other as well as across countries, and then it was found that enterprises in the MENA (Middle East and North Africa) have performed poorly compared with other countries in the sample. The study also reveals that some industries, which are more exposed to international competition, are more sensitive to investment climate deficiencies. The study states that impact of investment climate varies for small and domestic firms, where investment climate constraints emerge stronger than for the big and foreign firms. The reason is that big and foreign firms have the possibility to influence positively their business environment, and establish in locations where the investment climate is better. The study also states that improvement of the small and medium enterprises in these industries would generate substantial productivity gains and largely boost competitiveness of the firms. Thus, the study concludes that targeting reforms on small and medium enterprises, as well on those industries and investment climate variables which are the most inadequate and which favor more productivity would constitute an important element of MENA strategy of growth and employment for the future.

Escribano, et.al (2010) studied about the determinants of investment climate(infrastructure quality) and its impact on TFP of African manufacturing firm’s based on investment climate surveys of cross country-comparisons from 1999-2005. The infrastructure quality measure includes quality in the provisions of customs clearance, energy, water, sanitation, transportation, telecommunications and information and communication technology (ICI).The study applied micro-econometric techniques to investment climate surveys of 26 African countries to gauge the impact of infrastructure quality on TFP; further the countries are distinguished into two blocks –high income growth and low-income growth. The study found that infrastructure quality has a low impact on TFP in countries of the first block and a high (negative) impact in countries of the second block. Poor quality electricity provision affects mainly poor-countries, whereas problems dealing with customs while importing or exporting affect mainly faster growing countries. The study also found that losses from transport interruptions affect mainly slower growing countries; also water outages affect mainly slower –growing countries. The study also concluded that there is also some heterogeneity among countries in the infrastructure determinants of the allocative efficiency of African firms.
The findings of the selected studies on determinants, measurement of investment climate, relationship between investment climate and industrial growth, and investment climate and TFP have been summarized above. These studies pertain to countries like: USA, UK, Japan, China, Iran, Bangladesh, Cambodia, Sri Lanka, India, Pakistan, Brazil, and Philippines. Mainly the studies found the positive relationship between investment climate and industrial growth and investment climate and total factor productivity growth. There are also other factors such as inflation, uncertainty, high interest rate, high tax rate, delays at custom house, more visits by government officials, poor power supply from public grid, corruption, labor market issues etc, pointed out by the studies that influence investment climate negatively. On the other side, provision of infrastructure, approaches to regulation, stable international relations, low custom clearance time, proper functioning of finance and labor markets and expanded domestic markets have positive impact on investment climate. A sizeable part of the literature has examined the investment climate at macro level. Present study is a micro level study which analyzes and computes the investment climate of two states of Punjab and Haryana.