CHARTET 2

LITERATURE REVIEW
PART I

THORETICAL BACKGROUND
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PART 2.1: THORETICAL BACKGROUND

2.1.1) INTRODUCTION

Globalization is a process of global economic, political, and cultural integration and unification. The main consequences of this are a global distribution of labor; migration of capital and human and industrial resources on a global scale; standardization of legislation and of economic and technological processes; and greater contact between different cultures. This is an objective, natural, historic process that is systematic. In other words, it encompasses all areas of social life. Globalization is a process that involves the intensification of the integration of national economies in terms of the political, economic and socio-cultural relationships. It involves the deepening and intensifying of the linkages of national economies in terms of the flow of goods and services (Kindele & Gidado, 2002). During the last few years, the production and management systems have been revolutionized worldwide in the automobile industry. One of the major changes in the industry has been...
the opening up and growth of several emerging markets. The automotive industry is now facing new and pressing challenges. Globalization, individualizations, digitalization and increasing competition are changing the face of the industry (Schmid, 2007). In addition, increasing safety requirements and voluntary environmental commitments have also contributed to the changes ahead. Size of the organization is no longer a guarantee of success. Only those companies that find new ways to create value may prosper in the future (Jain, 2006). Globalization is by far the largest strategic challenge that is facing marketers today. In the next 10 years, the global marketplace will continue to grow, and as it do, marketers must work harder and smarter to come up with new and better ways to keep their marketing and advertising campaigns appealing to the largest number of people possible (Shamsud, 2002). This can be somewhat difficult, because globalization means the drawing together of many different cultures and beliefs, which represent strong and worthy challenges for those companies that market products, business, or services to various countries. Globalization is a process of interaction and integration among the people, companies, and governments of different nations, a process driven by international trade and investment and aided by Information Technology. This process has effect on the environment, on culture, on political systems, on economic development and prosperity, and on human physical well-being in societies around the world (E.Rothenberg, 2002). It is the new buzzword that has come to dominate the world since the nineties of the last century with the end of the cold war and the break-up of the former Soviet Union and the global trend towards the rolling ball. The frontiers of the state with increased reliance on the market economy and renewed faith in the private capital and resources, a process of structural adjustment spurred by the studies and influences of the
World Bank and other international organisations have started in many of the developing countries. Also globalisation has brought in new opportunities to developing countries. Greater access to developed country markets and technology transfer hold out promise improved productivity and higher living standards. But globalisation has also thrown up new challenges like growing inequality across and within nations, volatility in financial market and environmental deteriorations. The term globalization has invaded the mind of every successful businessman and the concept of “Global Village” is a common issue in the modern business world. The concept of globalization today has invaded the globe and the national boundaries have been virtually eliminated. So what is the effect of this? Simple, the world today has become a small but a very complex and dynamic neighborhood. Today we live in a global village and this means that our activities have crossed the national boundaries to become global.

Globalization in its literal sense is the process of transformation of local or regional phenomena into global ones. It can be described as a process by which the people of the world are unified into a single society and function together (Chaudhary & Chaudhary, 2006). This process is a combination of economic, technological, sociocultural and political forces. Globalization is often used to refer to economic globalization, that is, integration of national economies into the international economy through trade, commerce, foreign direct investment, capital flows, migration, and the spread of technology (Byrd Clark, 2009).
2.1.2) WHAT IS GLOBALIZATION?

Globalization broadly refers to the expansion of global linkages, the organization of social life on a global scale, and the growth of a global consciousness, hence to the consolidation of world society. Such an ecumenical definition captures much of what the term commonly means, but its meaning is disputed. It encompasses several large processes; definitions differ in what they emphasize. Globalization is historically complex; definitions vary in the particular driving force they identify. The meaning of the term is itself a topic in global discussion; it may refer to "real" processes, to ideas that justify them, or to a way of thinking about them. The term is not neutral; definitions express different assessments of global change. Among critics of capitalism and global inequality, globalization now has an especially pejorative ring.

There are many different definitions of globalization, but most acknowledge the greater movement of people, goods, capital and ideas due to increased economic integration which in turn is propelled by increased trade and investment. It is like moving towards living in a borderless world.

*Oxford English Dictionary (OED)*: “Globalization is the act of globalizing from the noun global meaning pertaining to or involving the whole world, worldwide, universal” (Oxford English Dictionary 2000).

*International Forum on Globalization (IFG)*: “Globalization is the present worldwide drive toward a globalized economic system dominated by supranational corporate trade and banking institutions that are not accountable
to democratic processes or national governments” (International Forum on Globalization 2006).

*World Trade Organization (WTO):* “Globalization can be defined as a historical stage of accelerated expansion of market capitalism, like the one experienced in the 19th century with the industrial revolution. It is a fundamental transformation in societies because of the recent technological revolution which has led to a recombining of the economic and social forces on a new territorial dimension” (World Bank 2001). *(Please see Appendix A).*

This current wave of globalization has been driven by policies that have opened economies domestically and internationally. In the years since the Second World War, and especially during the past two decades, many governments have adopted free market economic systems, vastly increasing their own productive potential and creating myriad new opportunities for international trade and investment. Governments also have negotiated dramatic reductions in barriers to commerce and have established international agreements to promote trade in goods, services, and investment. Taking advantage of new opportunities in foreign markets, corporations have built foreign factories and established production and marketing arrangements with foreign partners. A defining feature of globalization, therefore, is an international industrial and financial business structure.

There has always been a sharing of goods, services, knowledge and cultures between people and countries, but in recent years improved technologies and a reduction of barriers means the speed of exchange is much faster. Globalization provides opportunities and challenges. Bigger markets can mean bigger profits which leads to greater wealth for investing in
development and reducing poverty in many countries. Weak domestic policies, institutions and infrastructure and trade barriers can restrict a country's ability to take advantages of the changes. Each country makes decisions and policies that position them to maximize the benefits and minimize the challenges presented by globalization. The issues and perceived effects of globalization excite strong feelings, tempting people to regard it in terms of black and white, when in fact globalization is an extremely complex web of many things. The following table presents ten opposing points of view often expressed about globalization.
# Table 2.1: Benefits and Problems of Globalization

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<thead>
<tr>
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<th>Benefits of Globalization</th>
<th>Problems of Globalization</th>
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<tr>
<td>1.</td>
<td><strong>Economies of countries</strong> that engage well with the international economy have consistently grown much faster than those countries that try to protect themselves. Well managed open economies have grown at rates that are on average 2 ½ percentage points higher than the rate of growth in economies closed to the forces of globalization.</td>
<td>There are social and economic costs to globalization. Trade liberalization rewards competitive industries and penalizes uncompetitive ones, and it requires participating countries to undertake economic restructuring and reform. While this will bring benefits in the long term, there are dislocation costs to grapple with in the immediate term, and the social costs for those affected are high.</td>
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<td>2.</td>
<td>Countries which have had faster economic growth have then been able to improve living standards and reduce poverty. India has cut its poverty rate in half in the past two decades. China has reduced the number of rural poor from 250 million in 1978 to 34 million in 1999. Cheaper imports also make a wider range of products accessible to more people and, through competition, can help promote efficiency and productivity.</td>
<td>Some countries have been unable to take advantage of globalization and their standards of living are dropping further behind the richest countries. The gap in incomes between the 20% of the richest and the poorest countries has grown from 30 to 1 in 1960 to 82 to 1 in 1995.</td>
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<td>3.</td>
<td>Improved wealth through the economic gains of globalization has led to improved access to health care and clean water which has increased life expectancy. More than 85 percent of the world's population can expect to live for at least sixty years (that's twice as long as the average life expectancy 100 years ago!)</td>
<td>Increased trade and travel have facilitated the spread of human, animal and plant diseases, like HIV/AIDS, SARS and bird flu, across borders. The AIDS crisis has reduced life expectancy in some parts of Africa to less than 33 years and delays in addressing the problems, caused by economic pressures, have exacerbated the situation. Globalization has also enabled the introduction of cigarettes and tobacco to developing countries, with major adverse health and financial costs associated with that.</td>
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<td>4.</td>
<td>Increased global income and reduced investment barriers have led to an increase in foreign direct investment which has accelerated growth in many countries. In 1975, total foreign direct investment</td>
<td>The increasing interdependence of countries in a globalised world makes them more vulnerable to economic problems like the Asian financial crisis</td>
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<td><strong>Statement</strong></td>
<td><strong>Details</strong></td>
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<td>5.</td>
<td>Improved environmental awareness and accountability has contributed to positive environmental outcomes by encouraging the use of more efficient, less-polluting technologies and facilitating economies’ imports of renewable substitutes for use in place of scarce domestic natural resources.</td>
<td>The environment has been harmed as agricultural, forest, mining and fishing industries exploit inadequate environmental codes and corrupt behavior in developing countries. Agricultural seed companies are destroying the biodiversity of the planet, and depriving subsistence farmers of their livelihood.</td>
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<tr>
<td>6.</td>
<td>Increasing interdependence and global institutions like WTO and World Bank, that manage the settlement of government-to-government disputes, have enabled international political and economic tensions to be resolved on a &quot;rules based&quot; approach, rather than which country has the greatest economic or political power. Importantly it has bolstered peace as countries are unlikely to enter conflict with trading partners and poverty reduction helps reduce the breeding ground for terrorism.</td>
<td>The major economic powers have a major influence in the institutions of globalization, like the WTO, and this can work against the interests of the developing world. The level of agricultural protection by rich countries has also been estimated to be around five times what they provide in aid to poor countries.</td>
</tr>
<tr>
<td>7.</td>
<td>Improved technology has dramatically reduced costs and prices changing the way the world communicates, learns, does business and treats illnesses. Between 1990 and 1999, adult illiteracy rates in developing countries fell from 35 per cent to 29 per cent.</td>
<td>Trade liberalization and technological improvements change the economy of a country, destroying traditional agricultural communities and allowing cheap imports of manufactured goods. This can lead to unemployment if not carefully managed, as work in the traditional sectors of the economy becomes scarce and people may not have the appropriate skills for the jobs which may be created.</td>
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<td>8.</td>
<td>Modern communications and the global spread of information have contributed to the toppling of undemocratic regimes and a growth in liberal democracies around the world.</td>
<td>Modern communications have spread an awareness of the differences between countries, and increased the demand for migration to richer countries. Richer countries have tightened the barriers against migrant workers, xenophobic fears have increased and people smugglers have exploited vulnerable people.</td>
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<tr>
<td>9.</td>
<td>The voluntary adoption by global</td>
<td>Globalised competition can force a</td>
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companies of **workplace standards** for their internationalized production facilities in developing countries has made an important contribution to respect for international labor standards. Wages paid by multinationals in middle and low-income countries are on average 1.8 to 2.0 times the average wages in those countries. 'race to the bottom' in wage rates and labor standards. It can also foster a *brain drain* of skilled workers, where highly educated and qualified professionals, such as doctors, engineers and IT specialists, migrate to developed countries to benefit from the higher wages and greater career and lifestyle prospects. This creates severe skilled labour shortages in developing countries.

| 10. International migration has led to greater recognition of diversity and **respect for cultural identities** which is improving democracy and access to human rights. | **Indigenous and national culture and languages** can be **eroded** by the modern globalised culture. |


### 2.1.3) KEY FACTORS OF GLOBALIZATION

The key interlinked factors influencing the tendency towards globalization are as follows:

- **GATT and the WTO**
- **Structural shift in the world economy**
- **Integration and operational velocity of financial markets**
- **Diffusion of computer-based technologies and information systems**
- **The "agile" corporation**
- **Competitiveness based on supply chains**

The main objective of the General Agreement on Tariffs and Trade (GATT) and The World Trade Organization (WTO) is to reduce physical and administrative barriers to international trade. Globalization is more than a technical process. While there is a strong technical component, successful
globalization involves changing the way an organization does business. As long as international markets are treated as a secondary concern and a place to save on costs, globalization efforts will not be truly successful. In particular, globalization is not a process that starts after a product has been designed. If global concerns and plans for after-market support are not made even before product development begins, costs will go up and quality problems will emerge. Globalization can best be thought of as a cycle rather than a single process, as shown below:

Figure 2.1: The Global Product Development Cycle

Source: http://www.gvlocalization.com
In this view, the two primary technical processes that comprise globalization-internationalization and localization- are seen as part of a global whole:

- **Internationalization** encompasses the planning and preparation stages for a product in which it is built by design to support global markets. This process means that all cultural assumptions are removed and any country or language-specific content is stored externally to the product so that it can be easily adapted.

- **Localization** refers to the actual adaptation of the product for a specific market. It includes translation, adaptation of graphics, adoption of local currencies, use of proper forms for dates, addresses, and phone numbers, and many other details, including physical structures of products in some cases. If these details were not anticipated in the internationalization phase, they must be fixed during localization, adding time and expense to the project. In extreme cases, products that were not internationalized may not even be localizable.

**2.1.4) PROCESS OF INTERNATIONALIZATION**

Any MNE in the process of internationalization may use different forms of forcing operations, which can be classified as follows:

(a) Exports
(b) Other form of investment
(c) Foreign direct investment
2.1.4.1) EXPORTING

Firms can export **directly** or **indirectly**. Direct exporting involves direct contract with foreign customers and however, entails long-term commitment in developing the foreign market, indirect export involves the use of intermediaries like export agents and/or export trading companies. It minimizes the commitment of resources thereby reducing the exposure to risk while allowing the firm to concentrate on its core competitors. However, the returns form indirect exporting is less. The firms would not have a proper control over the distribution channels.

2.1.4.2) OTHER FORMS OF INVESTMENT

These other forms of investment may be different from international activities of the firm. Namely, wholly / majority - owned foreign direct investment and exports. Oman’s taxonomy (1984) of other forms of investment gives us the definition of this term. As the new/other forms are heterogeneous. And perhaps be defined most simply by distinguishing them from what they are not. They are neither majority owner investment nor portfolio lending in which there is no direct creditor involvement at all. E.g. joint ventures (less than 40 percent equity by home contract, production sharing contracts, international subcontracting.

2.1.4.3) FOREIGN DIRECT INVESTMENT

Foreign direct investment (FDI) may be defined as “the investment that is mode to acquire a lasting management interest (usually of 10 percent voting stock) in an enterprise operating in a country other than that of investor (defined according to residency), the investor’s purpose being an effective
voice in management of the enterprise (World Debt Tables, 1993-1994). Foreign manufacturing involves greater deployment of resources than direct exporting. Here foreign manufacturing means amounting to direct investment in alien countries and involvement in manufacturing activities on its own. A multinational is a firm that undertakes direct investment in foreign countries, either though a new investment (100 percent or Greenfield investment\(^1\)) or through the joint venture of an existing foreign firm called Mergers and Acquisitions\(^2\) (M&As).

### 2.1.5) NATURE AND EXISTENCE OF GLOBALIZATION

There is much academic discussion about whether globalization is a real phenomenon or only an analytical artifact (a myth). Although the term is widespread, many authors argue that the characteristics attributed to globalization have already been seen at other moments in history. Also, many note that such features, including the increase in international trade and the greater role of multinational corporations, are not as some. In internationalization, the role of the state and the importance of nations are greater, while globalization in its complete form eliminates nation states. So, they argue that the frontiers of countries, in a broad sense, are far from being dissolved, and therefore this globalization process is not happening, and

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1. Greenfield investment: direct investment in new facilities or the expansion of existing facilities. Greenfield investment is the primary target of host nation’s promotional efforts because they create new production capacity and jobs. Transfer technology and know-how. And can lead to linkages to the global marketplace.

2. Mergers and Acquisitions occur when a transfer of existing assets form local firm to foreign firms takes place. This is the primary type of FDI. Cross-border mergers occur when the assets and operation of firm form different countries are combined to establish a new legal entity. Cross-border acquisitions occur when the control of assets and operations is transferred from a local to a foreign company. With the local company becoming an affiliate of the foreign company.
probably will not happen, considering that in world history, internationalization never turned into globalization (the European Union and NAFTA are yet to prove their case).

Some maintain that globalization is an imagined geography; that is, a political tool of ruling neo-liberals, who are attempting to use certain images and discourses of world politics to justify their political agendas. Writers of books such as No Logo claim that by presenting a picture of a globalized world, the Bretton Woods institutions can demand that countries open up their economies to liberalization under Structural Adjustment Programmes that encourage governments to fund privatization programmes, ahead of welfare and public services.

2.1.6) SIGNS OF GLOBALIZATION

Globalization has become identified with a number of trends, most of which may have developed since World War II. These include greater international movement of commodities, money, information, and people; and the development of technology, organizations, legal systems, and infrastructures to allow this movement. The actual existence of some of these trends is debated.

2.1.6.1) ECONOMICALLY

- Increase in international trade at a much faster rate than the growth in the world economy
- Increase in international flow of capital including foreign direct investment
Creation of international agreements leading to organizations like the WTO and OPEC

Development of Global Financial Systems (GFS)

Increased role of international organizations such as WTO, WIPO, IMF that deal with international transactions

Increase of economic practices like outsourcing, by multinational corporations

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3 - The **Organization of the Petroleum Exporting Countries (OPEC)** is a cartel of twelve countries made up of Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela. OPEC has maintained its headquarters in Vienna since 1965, and hosts regular meetings among the oil ministers of its Member Countries. Indonesia withdrew its membership in OPEC in 2008 after it became a net importer of oil, but stated it would likely return if it became a net exporter in the world again.

4 - The most prominent international institutions are the IMF, the World Bank and the WTO:

- The International Monetary Fund (http://www.imf.org/) keeps account of international balance of payments accounts of member states. The IMF acts as a lender of last resort for members in financial distress, e.g., currency crisis, problems meeting balance of payment when in deficit and debt default. Membership is based on quotas, or the amount of money a country provides to the fund relative to the size of its role in the international trading system.

- The World Bank (http://www.worldbank.org/) aims to provide funding, take up credit risk or offer favorable terms to development projects mostly in developing countries that couldn't be obtained by the private sector. The other multilateral development banks and other international financial institutions also play specific regional or functional roles.

- The World Trade Organization (http://www.wto.org/) settles trade disputes and negotiates international trade agreements in its rounds of talks (currently the Doha Round).

Promotion of free trade

- Of goods:
  - Reduction or elimination of tariffs; construction of free trade zones with small or no tariffs
  - Reduced transportation costs, especially from development of containerization for ocean shipping.

- Of capital: reduction or elimination of capital controls

- Reduction, elimination, or harmonization of subsidies for local businesses

- Intellectual property restrictions
  - Harmonization of intellectual property laws across nations (generally speaking, with more restrictions)
  - Supranational recognition of intellectual property restrictions (e.g. patents granted by China would be recognized in the US).
2.1.6.2) CULTURALLY

- Greater international cultural exchange,
- Spreading of multiculturalism, and better individual access to cultural diversity, for example through the export of Hollywood and Bellwood movies. However, the imported culture can easily supplant the local culture, causing reduction in diversity through hybridization or even assimilation. The most prominent form of this is Westernization, but Sanitization of cultures also takes place.
- Greater international travel and tourism
- Greater immigration, including illegal immigration
- Spread of local foods such as pizza, Chinese and Indian food/Pakistani Food to other countries (often adapted to local taste)
- World-wide Fads and Pop Culture such as Pokemon, Sudoku, Numa Numa, Origami, Idol series, YouTube, MySpace, and many others.
  - Increasing usage of foreign phrases. Example... "Amigo" and "Adios" are Spanish terms many non-speaking Spanish people in the US understand, Most Americans understand some French, Spanish or Japanese without actually knowing the language.
- Development of a global telecommunications infrastructure and greater transborder data flow, using such technologies as the Internet, communication satellites and telephones.
- Increase in the number of standards applied globally; e.g. copyright laws and patents.
- Formation or development of a set of universal values
The push by many advocates for an international criminal court and international justice movements (see the International Criminal Court and International Court of Justice respectively).

It is often argued that even terrorism has undergone globalization, with attacks in foreign countries that have no direct relation with the own country.

Barriers to international trade have been considerably lowered since World War II through international agreements such as the General Agreement on Tariffs and Trade (GATT). Particular initiatives carried out as a result of GATT and the WTO, for which GATT is the foundation, has included:

Globalization is not new, though. For thousands of years, people—and later, corporations—have been buying from and selling to each other in lands at great distances, such as through the famed Silk Road across Central Asia that connected China and Europe during the Middle Ages. Likewise, for centuries, people and corporations have invested in enterprises in other countries. In fact, many of the features of the current wave of globalization are similar to those prevailing before the outbreak of the First World War in 1914. But policy and technological developments of the past few decades have spurred increases in cross-border trade, investment, and migration so large that many observers believe the world has entered a qualitatively new phase in its economic development. Since 1950, for example, the volume of world trade has increased by 20 times, and from just 1997 to 1999 flows of foreign investment nearly doubled, from $468 billion to $827 billion. Distinguishing this current wave of globalization from earlier ones, author Thomas Friedman has said that today globalization is “farther, faster, cheaper, and deeper.”
Technology has been the other principal driver of globalization. Advances in information technology (IT), in particular, have dramatically transformed economic life. Information technologies have given all sorts of individual economic actors—consumers, investors, businesses—valuable new tools for identifying and pursuing economic opportunities, including faster and more informed analyses of economic trends around the world, easy transfers of assets, and collaboration with far-flung partners. Globalization is deeply controversial, however. Proponents of globalization argue that it allows poor countries and their citizens to develop economically and raise their standards of living, while opponents of globalization claim that the creation of an unfettered international free market has benefited multinational corporations in the Western world at the expense of local enterprises, local cultures, and common people. Resistance to globalization has therefore taken shape both at a popular and at a governmental level as people and governments try to manage the flow of capital, labor, goods, and ideas that constitute the current wave of globalization.
2.1.7) MODERN GLOBALIZATION

Globalization, since World War II, is largely the result of planning by politicians to breakdown borders hampering trade to increase prosperity and interdependence thereby decreasing the chance of future war. Their work led to the Breton Woods conference, an agreement by the world's leading politicians to lay down the framework for international commerce and finance, and the founding of several international institutions intended to oversee the processes of globalization. These institutions include the International Bank for Reconstruction and Development (the World Bank), and the International Monetary Fund (IMF). Globalization has been facilitated by advances in technology which have reduced the costs of trade, and trade negotiation rounds, originally under the auspices of the General Agreement on Tariffs and Trade (GATT)\(^5\), which led to a series of agreements to remove restrictions on trade. Since World War II, barriers to international trade have been considerably lowered through international agreements - GATT. Particular initiatives carried out as a result of GATT and the World Trade Organization (WTO)\(^6\), for which GATT is the foundation, has included:

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\(^5\) - The **General Agreement on Tariffs and Trade** (typically abbreviated GATT) was negotiated during the UN Conference on Trade and Employment and was the outcome of the failure of negotiating governments to create the International Trade Organization (ITO). GATT was formed in 1947 and lasted until 1994, when it was replaced by the World Trade Organization (WTO) in 1995. The original GATT text (GATT 1947) is still in effect under the WTO framework, subject to the modifications of GATT 1994.

\(^6\) - The **World Trade Organization (WTO)** is an international organization designed by its founders to supervise and liberalize international capital trade. The organization officially commenced on January 1, 1995 under the Marrakech Agreement, replacing the General Agreement on Tariffs and Trade (GATT), which commenced in 1947.
1) Reduction or elimination of tariffs; creation of free trade zones with small or no tariffs.

2) Reduced transportation costs, especially resulting from development of containerization for ocean shipping.

3) Reduction or elimination of capital controls.

4) Reduction, elimination, or harmonization of subsidies for local businesses

5) Creation of subsidies for global corporations

6) Harmonization of intellectual property laws across the majority of states, with more restrictions.

7) Supranational recognition of intellectual property restrictions (e.g. patents)

Cultural globalization, driven by communication technology and the worldwide marketing of Western cultural industries, was understood at first as a process of homogenization, as the global domination of American culture at the expense of traditional diversity. However, a contrasting trend soon became evident in the emergence of movements protesting against globalization and giving new momentum to the defense of local uniqueness, individuality, and identity, but largely without success (Jurgen & Niels 2005). The Uruguay Round (1986 to 1994) led to a treaty to create the WTO to mediate trade disputes and set up a uniform platform of trading. Other bilateral and multilateral trade agreements, including sections of Europe’s Maastricht Treaty and the North American Free Trade Agreement (NAFTA).^7

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^7 - The agreement came into force on January 1, 1994. It superseded the Canada-United States Free Trade Agreement between the U.S. and Canada. In terms of combined purchasing power parity GDP of its
have also been signed in pursuit of the goal reducing tariffs and barriers to trade. World exports rose from 8.5% in 1970, to 16.2% of total gross world product in 2001 (Hirst & Thompson, 2004).

Globalization is a trend joining countries economically, through education, society and politics. Globalization brings people off all nations closer together. Two factors that drive globalization is the free flow of goods, services and capital. The second factor is the changes that occur in technology, for example, communication information processing and transportation technologies.

According to Maritta Daddio (2005), in an article titled, “International Competitiveness and Technological Innovations Changing How Universities Conduct R&D, she states, “Many traditional theories examine pricing and competition policies as dominant factors for trade and competitiveness. Models such as the Ricardian and Heckscher-Ohlin evaluate variables such as trade flows from comparative advantages or export / import biased growth due to factors such as abundance of capital and scarcity of land.

**2.1.8) IS GLOBALIZATION A GOOD THING?**

There is a heated debate about the true effects of globalization and if it really is such a good thing. Good or bad, though, there isn’t much argument as to whether or not it is happening. Let’s look at the positives and negatives of globalization, and you can decide for yourself whether or not it is the best thing for our world.

members, as of 2007 the trade block is the largest in the world and second largest by nominal GDP comparison.
2.1.9) POSITIVE ASPECTS OF GLOBALIZATION

- As more money is poured into developing countries, there is a greater chance for the people in those countries to economically succeed and increase their standard of living.
- Global competition encourages creativity and innovation and keeps prices for commodities/services in check.
- Developing countries are able to reap the benefits of current technology without undergoing many of the growing pains associated with development of these technologies.
- Governments are able to better work together towards common goals now that there is an advantage in cooperation, an improved ability to interact and coordinate, and a global awareness of issues.
- There is a greater access to foreign culture in the form of movies, music, food, clothing, and more. In short, the world has more choices.

2.1.10) NEGATIVE ASPECTS OF GLOBALIZATION

Today’s business environment has been called a “global village”, and many Americans simply accept without question the concept that transportation, finance and telecommunications have made the world a “smaller” place. Traditionally, attention has focused on the benefits to consumers and corporations by the global economy, including greater choices for consumers, and lower costs for companies. In recent years, however, there has been increased attention by analysts on the negative effects of globalization; some of these criticisms are:
Outsourcing, while it provides jobs to a population in one country, takes away those jobs from another country, leaving many without opportunities.

Although different cultures from around the world are able to interact, they begin to meld, and the contours and individuality of each begin to fade.

There may be a greater chance of disease spreading worldwide, as well as invasive species that could prove devastating in non-native ecosystems.

There is little international regulation, an unfortunate fact that could have dire consequences for the safety of people and the environment.

Large Western-driven organizations such as the International Monetary Fund and the World Bank make it easy for a developing country to obtain a loan. However, a Western-focus is often applied to a non-Western situation, resulting in failed progress.

2.1.11) ECONOMIC GLOBALIZATION

Globalization is perhaps the central concept of our age. Yet, a single definition of globalization does not exist either among academics or in everyday conversation (Movius, 2008). There is also a lack of consensus as to whether or not globalization is a useful concept to portray current events.8 While most conceptions focus on different aspects of growing interdependence is it economic, cultural, technological, and the like, at a basic level globalization refers to growing interconnectedness.

“Globalization” means the process of making something worldwide in scope and application. It most commonly refers to the stunning increase in the number and variety of transnational transactions, dimly foreshadowed in the

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years leading up to World War I, that has marked the last two decades. The process of adapting to global conditions requires adjustments on the part of both producers and consumers. Economic columnist Robert Samuelson defines globalization as “the worldwide convergence of supply and demand.” Similarly, financial guru George Soros refers to the global economy as a “gigantic circulatory system.” This convergence or system takes many forms:

- Trade (goods, services)
- Finance (banking, investment, foreign exchange, capital movements)
- Communication (information, education, technology)
- Governance (institutions, regulations, norms, threats)
- Culture (art, music, entertainment) and
- Work and leisure (labor, migration, tourism).

Economic globalization refers primarily to the first two, but it both influences and is influenced by all the others (Jameson, 2005). In general, globalization refers to the increasing interdependence of people and organizations around the world, which the church has long affirmed and encouraged. Trade and other interconnections between countries are not new, but since the end of the Cold War, a new stage has been reached through internet technologies and the dominance of the neo-liberal paradigm. On the one hand, globalization describes a stage in the historical evolution of humanity, while on the other, economic globalization has become a political project steering the world economy in a particular

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9 - U.v. Weizsäcker, for example, describes three causes of the phenomena of globalization: the end of the Cold War, the Internet revolution, and the pushing of the neo-liberal paradigm. The term “globalization” as it is being used in this Call, has come into common usage only in the past ten years.
Driven by neo-liberal theory, economic globalization places priority on the free movement of investment capital, profit maximization and growth, and the increasing reliance on market forces. Prominent features of this form of economic globalization include:

1. **Mobility across borders:** There has been an escalating movement of goods, services, capital (trade and investment) and speculative money across international borders.

2. **Deregulation:** Regulations are dropped or liberalized in order to enable this movement to occur more freely.

3. **Corporate power:** A growing portion of the world’s large economies are actually large corporations which are unaccountable to the public.

4. **Privatization:** Many public goods and services, such as water, electricity, health care and education are being privatized.

5. **Commoditization of life:** A monetary value is being placed on more and more areas of life, which can then be marketed worldwide.

6. **Homogenization:** While Western consumer-oriented ways of life are marketed around the world local products and cultural practices are eventually disappearing.

7. **Speculative investment:** Buying and selling money instruments for the purpose of high Short-term gain outpace trade in actual goods and services and long-term investment in production-oriented economic activity.

8. **Loss of sovereignty:** In the face of these trends, governments increasingly feel there is Little they can do to protect their people and resources.

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10 - This distinction was made by the Copenhagen Seminar for Social Progress, building on the results of the UN summit conference on Social Development in Copenhagen in 1995. See also, Konrad Raiser, *For a Culture of Life* (Geneva: WCC, 2002), p. 6.
CHAPTER II

PART II

REVIEW OF WORKS DONE
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PART 2.2) REVIEW OF WORKS DONE

2.2.1) INTRODUCTION

As noted by National Manufacturing Competitiveness Council (NMCC)\textsuperscript{11} (2006), competitiveness of manufacturing sector is a very broad multi-dimensional concept that embraces numerous aspects such as price, quality, productivity, efficiency and macro-economic environment. The Organization for Economic Co-operation and Development (OECD)\textsuperscript{12} definition of competitiveness, which is most widely quoted, also considers employment and sustainability, while being exposed to international competition, as features pertaining to competitiveness. There are numerous studies on automobile industry in India, published by industry associations, consultancy organizations, research bodies and peer reviewed journals. In this section, various studies on the Indian automobile industry are reviewed, under different heads pertaining to competitiveness, namely, global comparisons, policy environment and evolution of the Indian automobile industry, productivity, aspects related to supply chain and industrial structure and technology and other aspects.

\textsuperscript{11} The National Manufacturing Competitiveness Council (NMCC) has been set up by the Government to provide a continuing forum for policy dialogue to energies and sustain the growth of manufacturing industries in India. The NMCC is expected to suggest various ways and means for enhancing the competitiveness of manufacturing sector including identification of manufacturing sectors which have potential for global competitiveness; current strengths and constraints of identified sectors, and recommend National level industry/sector specific policy imitative as may be required for augmenting the growth of manufacturing sector.

\textsuperscript{12} The Organization for Economic Co-operation and Development (OECD) is an international economic organization of 34 countries founded in 1961 to stimulate economic progress and world trade. It is a forum of countries committed to democracy and the market economy, providing a platform to compare policy experiences, seek answers to common problems, identify good practices, and co-ordinate domestic and international policies of its members. Its mandate covers economic, environmental, and social issues.
2.2.1.1) GLOBAL COMPARISONS

The Investment Information and Credit Rating Agency of India\textsuperscript{13} (ICRA, 2003) study the competitiveness of the Indian auto industry, by global comparisons of microenvironment, policies and cost structure. This has a detailed account on the evolution of the global auto industry. The United States was the first major player from 1900 to 1960, after which Japan took its place as the cost efficient leader. Cost efficiency being the only real means in as mature an industry as automobiles to retain or improve market share, global auto manufacturers have been sourcing from the developing countries. India and China have emerged as favourite destinations for the first-tier OEMs since late 1980s. There are only a few dominant Indian OEMs, while the number of OEMs is very large in China (122 car manufacturers and 120 motorcycle manufacturers).

According to this study, the major advantage of the Indian economy is educated and skilled workforce with knowledge of English. Our disadvantages include poor infrastructure, complicated tax structure, inflexible labour laws, inter-state policy differences and inconsistencies. The drivers of Chinese economic growth are FDI, labour productivity growth, which was 1.5 times higher than that in India in the last decade, and domestic demand. Fiscal pressure is mounting on the Chinese government, while India is in a better state. Based on comparisons of cost composition to pinpoint the areas in which the Indian auto industry is at a disadvantage, this study recommends a Value-Added Taxes (VAT) regime, speedy procedures, and imports duty cuts on raw materials, common testing and design facility.

\textsuperscript{13} ICRA Limited (formerly Investment Information and Credit Rating Agency of India Limited) was set up in 1991 by leading financial/investment institutions, commercial banks and financial services companies as an independent and professional Investment Information and Credit Rating Agency.
labour reforms, up gradation of design and engineering capabilities and brand building.

ICRA (2004a) analyses the implications of the India-ASEAN\textsuperscript{14} Free Trade Agreements for the Indian automotive industry. ASEAN economies are globally more integrated than India. The current size of Indian and ASEAN market for automobiles is more or less the same but the Indian market has a larger growth potential than the ASEAN market due to the low level of penetration. The labour cost is low in India but the stringent labour regulations erode this advantage. The level of infrastructure is better in India than Indonesia and the Philippines but worse than that in other ASEAN countries. The financial and banking sector is better in India than in the ASEAN countries. The study notes that there is a huge excess capacity in ASEAN countries, in comparison with that in India, which will help them to tackle the excess demand that may arise in future. The study finds a 20-30 percent cost disadvantage for Indian companies on account of taxation and infrastructure and 5-20 percent labour cost advantage over comparable ASEAN-member-based companies. Similar findings are noted in a study by the Automotive Component Manufacturers Association of India (ACMA, 2004), particularly in comparison with Thailand (Narayanan& Vashisht 2008).

\textsuperscript{14} The Association of Southeast Asian Nations, commonly abbreviated ASEAN is a geo-political and economic organization of ten countries located in Southeast Asia, which was formed on 8 August 1967 by Indonesia, Malaysia, the Philippines, Singapore and Thailand. Since then, membership has expanded to include Brunei, Burma (Myanmar), Cambodia, Laos, and Vietnam. Its aims include the acceleration of economic growth, social progress, cultural development among its members, the protection of the peace and stability of the region, and to provide opportunities for member countries to discuss differences peacefully.
ICRA (2004b) analyses the impact of Preferential Trade Agreement (PTA) with MERCOSUR\textsuperscript{15} on the automobile sector in India. This study finds a significant threat of imports in sub-compact and compact cars and certain auto components. There is huge excess capacity and intense competition in MERCOSUR countries, propelling them to look for export opportunities. This is true especially of Brazil, which has a well developed auto component sector with huge economies of scale. Further, weak currency in all MERCOSUR countries provides a natural tariff barrier. In addition, MERCOSUR countries have an equitable arrangement within themselves to have a balanced trade, with fair level of exports and imports. The Indian auto industry could gain from this Preferential Trade Agreement (PTA) with MERCOSUR only if it is assured of the balanced trade, as MERCOSUR countries practice among them.

ICRA (2005) studies the possible impact of Free Trade Agreements (FTA) with South Africa on the Indian automobile industry. The study finds that there are a few policies in South Africa that indirectly subsidises the auto industry, unlike India, in terms of financial grants. Hence it is suggested that India could minimize losses only if it goes for inclusion of certain auto components, which involve huge logistic costs of imports, creating a natural protection (for example, stampings, glass, seats, plastics and tyres) and those in which India enjoys economies of scale and is cost-competitive (e.g. castings and forgings) in this Free Trade Agreements (FTA). If South Africa is ready to discontinue the schemes such as Motor Industry Development Programme (MIDP), India could include all automotive components in this FTA. There should be a minimum local content of 60 percent and the

\textsuperscript{15} MERCOSUR is an economic and political agreement among Argentina, Brazil, Paraguay and Uruguay. Its purpose is to promote free trade and the fluid movement of goods, people, and currency.
agreement should not be trade balancing as India will not gain much in that case.

Kumar (2007) develops an analytical framework for explaining the probability of an Indian enterprise investing abroad. He finds that Indian enterprises draw their ownership advantages from their accumulated production experience, cost effectiveness of their production processes and other adaptations to imported technologies made with their technological effort, and sometime with their ability to differentiate product. Ramamurti and Singh (2007) identify four “generic internationalization strategies,” each based on a different set of competitive advantages, governed by a specific logic, and resulting in a different choice of target markets and modes of entry. Elango and Pattanaik (2007) seek to explain how Indian firms build capabilities to operate in international markets through learning from parental networks. Using lagged cross-sectional regression models on a sample of 794 firms, they found that firms draw on the international experience of their parental and foreign networks to build such capabilities.

In the book of “Globalization of the Automobile Industry, The United States, Japan, and the People’s Republic of China” by Xiaohua Yang. Yang analyzes the impact of globalization on national economic boundaries, using the automobile industry to contrast three different economic systems. Corporations emerge as new players in international relations. Their corporate policies and manufacturer-supplier linkages influence the international division of labor among modern nations. Their competitive strategy affects the ability of governments to regulate national economies. Scholars in international, regional, developmental economics will find this work provides interesting material on global competition.
In another book “India’s globalization” by Baldev Raj Nayar (2008), East-West center Washington explained systematically evaluates the economic consequences of globalization for India in the light of the attack of the critics against globalization on grounds of economic stagnation, deindustrialization, denationalization, destabilization, and impoverishment. On the basis of abundant qualitative and quantitative data, it strongly repudiates the case of the critics, and demonstrates that India has been a significant beneficiary of the globalization process. Instead of economic stagnation, India has seen acceleration in its average annual rate of economic growth. Instead of deindustrialization, there has been substantial industrial growth and, indeed, acceleration in the industrial growth rate. Instead of denationalization, business in India is now more competitive and is venturing forth into the global market; increased imports and the entry of foreign multinationals have not swamped it; essentially, India is master of its own destiny. Instead of economic destabilization, there has been since the paradigm shifts in economic policy in 1991 a marked absence of economic crisis in India.

Gopal Jarugumali (2006) studied in Ph.D thesis submitted in the Mysore university entitled “Multinational Enterprises in India: A Case study of Automobile Industry”. He found that, in the past two decades, the auto industries of developing countries have been transformed by trade and investment liberalization policies and the global expansion of the industry. The protective instruments (tariffs, quantitative restrictions, investment controls, etc) that once protected most developing countries auto industry has interacted with the globalization strategies of the major auto assemblers. These firms have looked to big emerging markets (ASEAN, China, Eastern Europe, India, Mercosure and Mexico) for both low –cost production sites
(particularly for low-end cars) and growing markets to offset stagnation in the industrially advanced countries. As a result, after 1990s, the vehicle production and sales grew rapidly in the emerging markets.

Shaker (2009) in his Ph.D thesis entitled “Internationalization Strategies of the Chinese Automotive Industry: Challenges and a Plan for Going Global” has found that China’s automotive industry has some competitive advantages such as low cost, while, facing a number of challenges that hinder the internationalization of Chinese automobile companies. It also shows that multiple factors play an important role in firms’ internationalization global strategy plan. It is thus essential that the interaction among independent variables is considered in the determination of global expansion strategy. In his paper he suggested that in comparative application of China’s economy of internationalization process to most of other industries in the emerging markets, they have similar development strategies and profiles due to the similar enterprise organizational mode and industrial environment.

2.2.1.2) POLICY ENVIRONMENT AND EVOLUTION OF INDIAN AUTO INDUSTRY

In this section, studies on the policy environment pertaining to the Indian automobile industry and its evolution over the years have been reviewed.

Pingle (2000) reviews the policy framework of India’s automobile industry and its impact on its growth. While the ties between bureaucrats and the managers of state-owned enterprises played a positive role especially since the late 1980s, ties between politicians and industrialists and between politicians and labour leaders have impeded the growth. The first phase of 1940s and 1950s was characterized by socialist ideology and vested interests,
resulting in protection to the domestic auto industry and entry barriers for foreign firms. There was a good relationship between politicians and industrialists in this phase, but bureaucrats played little role. Development of ancillaries segment as recommended by the L.K. Jha Committee report in 1960 was a major event that took place towards the end of this phase. During the second phase of rules, regulations and politics, many political developments and economic problems affected the auto industry, especially passenger cars segment, in the 1960s and 1970s. Though politicians picked winners and losers mainly by licensing production, this situation changed with oil crises and other related political and macro economic constraints.

The third phase starting in the early 1980s was characterized by delicensing, liberalization and opening up of FDI in the auto sector. These policies resulted in the establishment of new Light commercial vehicles (LCV) manufacturers (for example, Swaraj Mazda, DCM Toyota) and passenger car manufacturers.\footnote{Maruti Udyog Limited (MUL) was the only new entrant in passenger car segment from 1982 to 1993, after which foreign firms such as Hyundai, Honda, Toyota, etc., started entering. This was despite the fact that many CV manufacturers had entered in early 1980s. Pingle takes this as an evidence for the fact that the relationship between bureaucrats and managers in MUL played a role in protecting MUL.} All these developments led to structural changes in the Indian auto industry. Pingle argues that state intervention and ownership need not imply poor results and performance, as demonstrated by Maruti Udyog Limited (MUL). Further, the no contractual relations between bureaucrats and MUL dictated most of the policies in the 1980s, which were biased towards passenger cars and MUL in particular.

However, D’Costa (2002) argues that MUL’s success is not particularly attributable to the support from bureaucrats. Rather, any firm that is as good as MUL in terms of scale economies, first-comer advantage, affordability, product novelty, consumer choice, financing schemes and extensive servicing...
networks would have performed as well, even in the absence of bureaucratic support. D’Costa has other criticisms about Pingle (2000). The major shortcoming of Pingle’s study is that it ignores the issues related to sector specific technologies and regional differences across the country.

Piplai (2001) examines the effects of liberalization on the Indian vehicle industry, in terms of production, marketing, export, technology tie-up, product up gradation and Profitability. Till the 1940s, the Indian auto industry was non-existent, since automobile were imported from General Motors and Ford. In early 1940s, Hindustan Motors and Premier Auto started, by importing know how from General Motors and Fiat respectively. Since the 1950s, a few other companies entered the market for two-wheelers and commercial vehicles. However, most of them either imported or indigenously produced auto components, till the mid-1950s, when India had launched import substitution programme, thereby resulting in a distinctly separate auto-component sector.

Due to the high degree of regulation and protection in the 1970s and 1980s, the reforms in the early 1990s had led to a boom in the auto industry till 1996, but the response of the industry in terms of massive expansion of capacities and entry of multinationals led to an acute over capacity. Intense competition had led to price wars and aggressive cost-cutting measures including layoffs and large-scale retrenchment. While Indian companies started focusing on the price-sensitive commercially used vehicles, foreign companies continued utilizing their expertise on technology-intensive vehicles for individual and corporate uses. Thus, Piplai concludes that vehicle industry has not gained much from the reforms, other than being trusted upon a high degree of unsustainable competition.
In August 2006, a Draft of Automotive Mission Plan Statement prepared in consultation with the industry was released by the Ministry of Heavy Industries and Public Enterprises. This was finally released as a report in December 2006. This document draws an action plan to take the turnover of the automotive industry in India to US$145 billion by 2016, accounting for more than 10 percent of the GDP and providing additional employment to 25 million people, by 2016. A special emphasis is laid on small cars, MUVs, two-wheelers and auto-components. Measures suggested include setting up of a National Auto Institute, streamlining government/educational/research institutions to the needs of the auto industry, upgrading infrastructure, considering changes in duty structure and fiscal incentives for R&D. Similarly, NMCC (2006), which lays down a national strategy for manufacturing, recognizes the importance of the Indian automobile and auto-component industry, particularly the latter, as a competitive knowledge-based industry with immense employment generation potential.

McKinsey (2005) predicts the growth potential of India-based automotive component manufacturing at around 500 percent, from 2005 to 2015. This report describes the initiatives required from industry players, the Government and the ACMA to capture this potential. This study was based on interviews and workshops with 20 suppliers and 7 OEMs and survey with ACMA members. Increase in cost pressures on OEMs in developed countries, coupled with the emergence of skilled, cost-competitive suppliers in Low Cost Countries (LCCs), is likely to facilitate further acceleration of sourcing of automotive components from LCCs. The analysis identifies strong engineering skills and an emerging culture of cost-competitiveness as the major strengths of the Indian auto component sector, while its weaknesses
include slow growth in domestic demand and structural disadvantages such as power tariffs and indirect taxes.

The policy recommendations of this study include Value-Added Taxes (VAT) implementation, lower indirect taxes, power reforms, tax benefits linked to export earnings, duty-cut for raw material imports, R&D incentives for a longer period, establishment of auto parks, benefits for export-seeking investments, human resources development and modernization fund for new investments in auto clusters. Industry players have been advised to improve their operational performance, determine their strategic posture as one among those identified in the study, improve capabilities in line with their posture and invest very rapidly in a planned manner. ACMA needs to promote India as a brand, enable sourcing from India by global customers and promote the quality and productivity efforts of the auto component firms in India.

ACMA (2006) notes that India’s joining the WP (Working Party) 1998 Agreement for global harmonization of automotive standards, coupled with the funding of National Automotive Testing and Research Infrastructure Project (NATRIP) by the Government of India, has increased prospects of the Indian auto industry rising up to global standards in the near future, in all aspects.

Narayanan (1998) analyses the effects of deregulation policy on technology acquisition and competitiveness in the Indian automobile industry during the 1980s and finds that Competitiveness has depended on the ability to build technological advantages, even in an era of capacity-licensing. In a liberalized regime, this would depend on firm’s ability to bring about technological changes, as inferred from the behaviour of new firms in the sample considered. Further, vertical integration could score over subcontracting in a liberal regime. This is probably because of the entry of
new foreign firms that produce technologically superior and guaranteed quality vehicles and choose to produce most of the components in-house.\textsuperscript{17}

Narayanan (2004) analyses the determinants of growth of Indian automobile firms during three different policy regimes, namely, licensing (1980-81 to 1984-85), deregulation (1985-86 to 1990-91) and liberalization (1991-92 to 1995-96). Unlike the prediction by Narayanan (1998), this study finds that vertical integration is detrimental for growth in a liberalized regime as it potentially limits diversification. Narayanan (2006) also finds that vertical integration plays a positive role in a regulated regime, while it is not conducive for export competitiveness in a liberal regime.

Kathuria (1996) notes that the time-bound indigenization programme for commercial vehicles in the 1980s facilitated the upgradation of vendor skills and modifying vehicles to suit local conditions, which demand functional efficiency, overloading capabilities, fuel economy, frequent changes in speed and easy repair and maintenance. Kathuria also mentions that the choice between vertical integration and subcontracting crucially depends on the policy regime: In a liberal regime, vertical integration may not work.

\textbf{2.2.1.3) PRODUCTIVITY}

Sharma (2006) analyses the performance of the Indian auto industry with respect to the productivity growth. Partial and total factor productivity of the Indian automobile industry have been calculated for the period from 1990-91 to 2003-04, using the Divisia- Torques index for the estimation of the total factor productivity growth. The author finds that the domestic auto industry has registered a negative and insignificant productivity growth during the last

\textsuperscript{17} However, as Narayanan (2004) notes, vertical integration was gradually replaced by subcontracting, because Indian auto-component sector could emerge as a competitive sector after the entry of foreign firms.
one and a half decade. Among the partial factor productivity indices only labour productivity has seen a significant improvement, while the productivity of other three inputs (capital, energy and materials) haven’t shown any significant improvement. Labour productivity has increased mainly due to the increase in the capital intensity, which has grown at a rate of 0.14 per cent per annum from 1990-91 to 2003-04.

2.2.1.4) ASPECTS RELATED TO SUPPLY CHAIN AND INDUSTRIAL STRUCTURE

In this section, the studies that examine the aspects pertaining to local and global auto supply chains as well as the structure of the Indian auto industry are reviewed.

Humphrey (1999) compares the impact of globalization on supply chain networks in the auto industry in Brazil and India. According to Humphrey, global auto industry hubs were situated in three regions, namely, North America, Western Europe and Japan. Brazil and India are examples of the countries which could develop the indigenous auto industry despite not being situated very close to any of these regions. Hence, Humphrey compares the auto industries in these two countries. This study considers auto industry as a producer-driven commodity chain, wherein global auto assemblers control the entire supply chain from components to dealerships.

While the global auto assembly majors used to produce 60-70 percent of the value in-house till the 1980s, various phenomenal developments have started taking place since the 1980s, such as the emergence of independent dealers and rise of catalogue suppliers who supply their standard and indigenously designed components/modules to many assemblers. Brazil and India had liberalized auto investments and tariff structure since 1990. Prior to
1991, India had a much more protectionist regime than Brazil, in terms of licensing and quantitative restrictions on both imports and domestic production. Inflows of auto FDI occurred in both the countries since the mid-1990s. Further, Brazil and India have emerged as preferred suppliers for global auto assemblers. When the global auto assemblers entered India and Brazil, the phenomenon of ‘follow-source’\(^{18}\) was also happening. Now, there are parallel global networks of both assemblers and Tier-1 suppliers. Even Indian component suppliers have opportunities to enter the global auto supply chains, mainly in low technology products made to detailed drawings but the space for domestic industry is diminishing. With the global centralization of product engineering, skill requirements are likely to be immense in process engineering, particularly in assemblers and Tier-1 component manufacturers.

Sutton (2000) compares the auto-component supply chains in India and China, based on field surveys. In both these countries, the supply chain has developed very rapidly at the level of car makers and Tier-1 suppliers, with quality levels close to world standards, largely driven by the entry of multinational car makers. But, the Tier-2 suppliers are still not up to the global standards. The domestic content requirements, based on the infant industry argument, have helped the international car makers in enhancing the production capabilities of the domestic players effectively, as shown by increases in auto-component exports from India and China. Of the top ten exporting firms in India and China, five and six are domestic ones, respectively. Enhanced supply-chain capabilities have benefited the domestic auto makers as well, such as Mahindra and Mahindra in India, who have been

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\(^{18}\) When global auto majors invest in India, their preferred suppliers elsewhere in the world are also encouraged entering India as the wholly-owned subsidiaries of these suppliers. This phenomenon is called ‘follow-source’.
able to capture a sizeable market share with their indigenously designed and assembled MUV.

Some leading component producers in China and India strategically use highly capital intensive techniques such as robotics, occasionally, despite the low wages, mainly on account of their concerns to achieve high levels of quality. This in combination with employing high-quality workforce even at shop floor is another strategic choice of a few leading firms in India, to promote exports. Many Tier-1 firms follow the standard Japanese work practices to improve quality and minimize costs. Interactions between carmakers and component suppliers have also helped the latter improve quality.

Addressing a larger question of the impact of Foreign Direct Investment (FDI) on the domestic industry and economy, Tewari (2000) studies the automotive supply chain of Tamil Nadu, based on field surveys. Studies such as Humphrey (1999) show that entry of global auto majors in India and Brazil have impeded domestic firms, because of ‘follow source’, while this study shows evidence for the fact that medium-sized firms, which entered in the mid-1990s in Tamil Nadu have formed networks with smaller domestic suppliers and helped them upgrade their technologies. These medium-sized suppliers require more support from the government, since they play a crucial role in facilitating the development of the domestic auto industry. Joint ventures and technical tie-ups with overseas suppliers have been the strategies that were followed by well-performing auto component manufacturers, long before the global auto majors entered India. These relationships and the entry of foreign OEMs not only promote employment and income, but also diffusion of technologies and knowledge to the entire supply chain, including smaller firms.
Veloso and Kumar (2002) provide an overview of the major trends taking place in the global automotive industry, emphasizing on the Asian market. Consumer preferences, government regulations and intense competition have been driving the firms towards new technologies, modernization, research and changes in design and production. Market saturation in Triad regions (the United States, Western Europe and Japan) and rapid emergence of markets in Asia have led to increasing diversity in market needs. As a result, there are many models and segments coming up rapidly.

Auto majors have started adopting a global perspective and reorganizing their vehicle portfolio around product platforms, modules and systems. They are also minimizing the number of suppliers, by opting for bigger ones, based on cost and quality competitiveness, R&D capacity and proximity to development centers. Mergers and acquisitions are taking place for consolidation. Suppliers have been taking new roles, as systems integrators, global standardize systems manufacturers, component specialists and raw material suppliers. These roles are based on their focus, market presence, critical capabilities and types of components and systems. The automobile industry in India had been facing the problem of overcapacity by 2000 and the auto component sector was not so developed as to be able to deliver products of world-class quality. Chinese tariff and quota policies, coupled with local content regulations protect the auto industry in China immensely. However, the Chinese auto industry suffers from fragmentation, lower quality, lack of technological up gradation and managerial skills. Consolidation and liberalization that are happening recently in China are expected to promote its auto industry. Auto industries in the ASEAN and Korea have recovered quickly from the Asian crisis of 1998. This report concludes with some aspects that any study on auto sector should focus on,
such as evaluation of the capabilities of auto component supply chain both large and small suppliers, strategies of OEMs, cost, delivery, dependability, quality, product development, process development, flexibility, facilities/equipment, technology, process, workforce and organization, logistics and supply chain, research and engineering and interfaces.

ACMA (2006) presents the recent trends in the Indian auto industry as a whole and their implications for automotive supply chain in India. The market oriented growth and growing automobile industry in India have ensured bright prospects for the Indian auto component sector, which is vibrant and competitive. Huge future growth potential of the automobile industry and increased access to consumer finance may lead India to a place among the top five automotive economies by 2025. Most of the ACMA members have at least one standards certification. They are embracing world-class modern shop-floor practices. The auto component sector has been showing high rates of growth of production and exports, with a comprehensive production range, transforming as an attractive OEMs Tier-1 supplier. Many leading OEMs and Tier-1 companies have plans of sourcing from Indian auto component manufacturers, who are scaling up, establishing partnerships in India and abroad, acquiring foreign companies and establishing Greenfield investments overseas.

Proficiency in understanding technical drawings, understanding of different global standards, appropriate automation, flexibility in small-batch production and use of Information Technology (IT) for design, development and simulation are some of the growing capabilities among Indian auto component manufacturers. India is expected to emerge as the next big automotive R&D base, given its IT capabilities coupled with automotive domain knowledge and shifting of automotive design centers to India, by
global MNCs, as it is a potentially excellent base for prototyping, testing, validating and producing auto-components.

2.2.1.5) TECHNOLOGY AND OTHER ASPECTS

Kathuria (1996) analyses the Commercial Vehicles (CV) industry in India in a detailed manner, dwelling on the concepts of vertical integration and subcontracting, production technology and technological change. After an overview of the global auto industry, Kathuria traces the developments in the Indian auto industry from the 1950s to 1991. To evaluate the competitiveness of Indian commercial vehicles manufacturers in the domestic market, growth trends, structural trends, market shares, profitability, productivity ratios, prices, quality, dealer network and performance are analyzed. Macro and micro performance of India’s vehicle exports with major markets and Indian vehicle characteristics have been outlined, along with an analysis of global demand patterns. Domestic resource costs and global comparison of prices, credit and service are the other international trade-related aspects analyzed in this study. On vertical integration, the analysis leads to the conclusion that the Indian CV industry needs to learn from the international experience to get into subcontracting and buying-in. Lack of scales and high inventories had impeded the competitiveness of Indian CV firms in the 1980s.

R&D capabilities and new product ranges were the result of the challenges arising from time bound indigenization programme, but still Indian technology frontier remained far below global levels. Further, different firms have followed very different strategies and hence the impacts on their technological capabilities were also very different. However, success of Indian firms despite such a wide range of strategies is partly due to the protection available to them in the domestic market. Kathuria concludes that
the Indian auto industry in general and CV industry in particular, have a lot to learn from the global auto industry, in terms of best-practice technology and vertical integration and supplier relationship. The study rightly predicted that the industry would see heightened activity and recommended that the government should ensure that the domestic firms do not lose out because of the unrestricted entry of highly competitive foreign firms.

Narayanan (1998) finds that during the 1980s, technology acquisition through imports of technology and in-house R&D efforts explains much of differences in competitiveness, as measured by changes in market share, at the firm level, in the Indian automobile industry. Based on an econometric analysis, which considers technology acquisition, skill intensity, component imports, firm size, product differentiation, age and vertical integration as the determinants of competitiveness, Narayanan finds that competitiveness has depended on the ability to build technological advantages, even in an era of capacity licensing. This is facilitated by complementing imported technology with in-house R&D efforts.

Narayanan (2004) uses two-way fixed effects estimation of the firm growth as a function of variables capturing technology, such as R&D expenditure as a proportion of sales, foreign equity participation and import of capital goods. Role of technology depends on the technological regime in which the firm operates. In a licensed regime, firms with foreign equity grow faster because of better access to resources and technology. In a deregulated regime, import of capital goods has been the technology-related variable that triggered growth. In a liberal regime, growth is positively influenced by the intra-firm technology transfer.

Narayanan (2006) analyses the determinants of export intensity of Indian automobile firms using a Tobit model, taking the variables discussed in
Narayanan (1998) and Narayanan (2004) as the determinants. This study is based on the premises that there is a systematic difference in the characteristics and performance between the firms that export and those which sell in the domestic market, mainly in terms of technology acquisition, which in turn depends on the policy regime. Technology acquisition, firm size, vertical integration, capital intensity, imports of components and policy regime are found to be the main determinants of export competitiveness, by this analysis.

Aggarwal (2007) has shown that there are wide variations in the FDI inflow across the states of India. Only seven states\textsuperscript{19} accounted for over 97 per cent of the total amount of export-oriented FDI and 83 percent of total FDI approvals during 1991-2001. The presence of Export Processing Zones was found to be a relevant pull factor in attracting export-oriented FDI. Further, while explaining the sensitivity of FDI to labour market conditions, the study revealed that labour market rigidities and labour costs are more pronounced for export-oriented FDI than for domestic market-seeking FDI. Infrastructure and regional development are found to be key factors in attracting higher FDI, both in the export and domestic market-seeking sectors.

The studies reviewed so far were of a wide range in terms of objectives, methodologies used and conclusions arrived at. Some of them aim at studying very specific aspects of the Indian automobile industry such as global comparisons to examine the implications of FTAs, productivity, technology and supply chain, while others dwell on more general aspects such as strategies, competitiveness, evolution of the industry, structure of the industry and policy aspects pertaining to the Indian auto industry. These studies are based on field surveys, interviews, secondary data sources, econometric

\textsuperscript{19} Andhra Pradesh, Tamil Nadu, Maharashtra, Gujarat, West Bengal, Uttar Pradesh and Kerala.
analysis and descriptive analysis. Their conclusions vary widely on specifics, but there is almost a consensus that the Indian auto industry has a bright future due to various factors considered, except Piplai (2001), who argues that the competition in the auto industry in India is highly unsustainable.

The studies by ICRA, ACMA and McKinsey, which focus on global comparisons and policy environment of the auto industry, are based on quite realistic and practical approach, but lack analytical and quantitative rigour. When looked from a neutral of protection for the auto component sector. They are justified in some ways because of the immense protection offered to the auto-component sectors in the competing countries. However, a more analytical and quantitative approach is required to arrive at concrete conclusions on protection, because tariff barriers will be removed at some point of time in future and the industry needs to gear up to face the free trade regime.

Narayanan (1998, 2004 and 2006) studies the issues related to technology in the Indian automobile industry econometrically. These papers are based on sound econometric theories and the results have been critically analyzed based on evolutionary theoretical framework. However, these studies suffer from a few common problems. First, the dataset used, which is CMIE Prowess database, does not cover all the major players in the automobile industry, including Toyota. Hence, this study could have been supplemented by an analysis on the major companies that have been left out, through field surveys, interviews or annual reports. Secondly, considering automobile industry in isolation is not sufficient, since the auto-component sector in India

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20 Centre for Monitoring Indian Economy, monitors the Indian economy, and was established in 1976 by the eminent economist Dr. Narottam Shah. The company has grown into India's leading private sector economic research institution. CMIE is headquartered at Mumbai. It has 17 offices in India and has a 330-person strong team. (http://www.cmie.com).
has been playing a key role in the automobile industry, throughout the period considered in these papers.

Thirdly, vertical integration is proxied by the share of value-added in total sales, in these papers. This may not be sufficient because vertical integration and sub-contracting are too complex to be captured by a single variable based on value-added. Value-added could be high, as a share of output, despite the absence of vertical integration, because of the fact that several activities other than component-manufacturing such as painting, assembly and welding take place within the assemblers’ factories. Further, the conclusion by Narayanan (1998), that vertical integration is a preferred strategy in a liberal regime, based on the premises that foreign firms, which enter in this regime, produce technology intensive and high-quality products, for which they need to produce components in-house, is likely to be misleading. This is because of the fact that these foreign firms have imported the components and have not produced them in-house for this purpose.

Piplai (2001) studies the policy environment and its impact on the Indian automobile industry. While Piplai appears to be justified in saying that there has been excess capacity in the auto industry and the auto majors are facing difficulties in aggressively marketing their products, it is probably not correct to conclude, as he has done, that the current levels of competition resulting from liberalization are unsustainable. As noted in the introduction, car penetration levels are very low in India and hence the future potential for demand is very high. This would ensure that competition is quite sustainable as there will be enough consumers, given the rapid economic growth that is taking place.

The quantitative analysis of productivity indices is quite rigorous in Sharma (2006), but this study suffers from some major inadequacies that
include absence of analysis of disaggregate data and lack of consistency with the reality. For example, the conclusion that there has been no significant improvement in productivity of materials and energy in recent years is incorrect, since the reality is that owing to cost pressures, firms have been increasing their productivity with respect to these inputs (Narayanan & Vashisht, 2008).