

**IMPACT OF GLOBALISATION AND TRADE
LIBERALISATION ON THE INDIAN INDUSTRY: A CASE
ANALYSIS OF THE INDIAN PHARMACEUTICAL
INDUSTRY**

By

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DECLARATION

This research has not been previously accepted for any degree and is not being currently submitted in candidature for any degree.

Signed.....

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ABSTRACT

The study is designed to carry out the impact of trade liberalization and globalisation on the Indian industry with the help of a case analysis of the Indian pharmaceutical industry. The study is broken down into five chapters in order to carry out the process of the study systematically. The first chapter presents the background, motivation and the value of the study. Focus of chapter two, the literature review, which helps in brining out aspects associated with trade liberalisation and globalisation. Chapter three provides an overview of the Indian pharmaceutical industry with references to the global industry. An analysis of the industry against the literature developed in chapter two will be the focus of chapter four. Lastly, chapter 5 is designed to formulate recommendations for the industry, incorporating government's role.

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ABBREVIATIONS

<i>Bn:</i>	Billion
<i>CAGR:</i>	Compounded Annual Growth Rate
<i>CII:</i>	Confederation of Indian Industry
<i>DPCO:</i>	Drug Price Control Order
<i>EXIM:</i>	Export and Import
<i>FERA:</i>	Foreign Exchange Regulations Act
<i>GATT:</i>	General Agreement on Tariffs and Trade
<i>GDP:</i>	Gross Domestic Product
<i>MNCs:</i>	Multinational Corporations
<i>Mn:</i>	Million
<i>MRTP:</i>	Monopolies and Restrictive Trade Policies
<i>NATO:</i>	North Atlantic Treaty Organisation
<i>TNCs:</i>	Transnational Corporations
<i>TRIPS:</i>	Trade Related aspects of Intellectual Property Rights
<i>RBI:</i>	Reserve Bank of India
<i>Rs:</i>	Indian Currency; Rupees
<i>WTO:</i>	World Trade organisation

GLOSSARY

Autarky: A condition of self-sufficiency. Specifically, it is a national policy of economic independence.

Bulk Drugs: Bulk drugs are medically effective chemicals, derived from four types of raw materials, namely, plant derivatives, animal derivatives, synthetic chemicals and biogenetic derivatives (human insulin).

Consumer Surplus: Consumer surplus measures the difference between what a person is willing to pay for a good and the amount he/she actually is required to pay.

Drug Price Control Order: DPCO controls the domestic prices of major bulk drugs and their formulations with an aim to provide patients with medicines at affordable prices. DPCO ascertains, as per Drug Policy guidelines, the bulk drugs (and their formulations) to be kept under price control.

Foreign Exchange Regulations Act, 1973: An Act to consolidate and amend the law regulating certain payments, dealings in foreign exchange and securities, transactions indirectly affecting foreign exchange and the import and export of currency, for the conservation of the foreign exchange resources of the country and the proper utilisation thereof in the interests of the economic development of the country.

Foreign Direct Investment: Direct investment in business operations in a foreign country (includes both direct investment and portfolio investment).

General Agreement on Tariffs and Trade: International treaty that committed signatories to lowering tariff and non-tariff barriers to the free flows of goods across national borders and led to the WTO.

Generic Drug: When a medicine is first developed, the company discovering it is afforded a period of patent protection, usually 10-15 years.

Only the innovator can manufacture and market the medicine. However, when the patent expires, other companies can market an equivalent product under its chemical, or generic name.

Gini Coefficient: The Gini coefficient is a number between zero and one that measures the degree of inequality in the distribution of income in a given society. The coefficient would register zero inequality (0.0 = minimum inequality) for a society in which each member received exactly the same income and it would register a coefficient of one (1.0 = maximum inequality) if one member got all the income and the rest got nothing.

Gross Domestic Product: GDP is the gross domestic product or the income of the economy, C stands for consumption expenditure, I for investment expenditure, G for government spending, and X-M for exports minus imports.

Mean Deviation: refers to the percentage difference between the income of a randomly selected individual and average income across the world.

The Monopolistic and Restrictive Trade Practices Act, 1969: It was first enacted to was enacted, to ensure that the operation of the economic system does not result in the concentration of economic power in hands of few, to provide for the control of monopolies, and to prohibit monopolistic and restrictive trade practices in India.

Producer surplus: producer surplus measures the welfare of a group of firms who sell a particular product at a particular price. Producer surplus is defined as the difference between what producers actually receive when selling a product and the amount they would be willing to accept for a unit of the good.

World Trade Organisation: The World Trade Organisation (WTO) is the global international organisation dealing with the rules and regulations of trade between nations and an organisation that succeeded the General

Agreement on Tariffs and Trade (GATT) as a result of the successful completion of the Uruguay round of GATT negotiations.

REFERENCES

1. Cooper, D.R., Schindler, P.S. 2001. *Business Research Methods* (Seventh Edition) McGraw Hill, Singapore
2. David Dollar and Aart Kraay, 2001, *Growth Is Good for the Poor*, World Bank Policy Research Papers, Washington
3. David Dollar and Aart Kraay, 2001, *Trade Growth and Poverty*, International Monetary Fund
4. Gina Singh, 2003, *Prescribed: A Big Dose of India*, Business world, 21st April
5. Hill, W.L., 2003, *International Business: Competing in the Global Marketplace* (Fourth Edition), McGraw-Hill, New York
6. Hisrich. R. D., Peters. M. P. (2000). *Entrepreneurship* (Fourth Edition) McGraw-Hill, New York
7. Jones, R. W., 2000, *Globalisation and the Theory of Input Trade* (First Edition), Massachusetts Institute of Technology, London.
8. Joseph Stiglitz, 2003, *Globalisation and its Discontents*, (First Edition) Penguin Books India, New Delhi
9. Kapila, R., Kapila, U. 2001. *India's economy in the 21st century* (First Edition). Academic Foundation, Gaziabad
10. Martin Rama, *Globalisation and Workers in Developing Countries*, World Bank, 2003
11. Matthew J. Slaughter and Phillip Swagel, *Does Globalisation Lower Wages and Export Jobs?* International Monetary Fund, 1997

12. Nagesh Kumar. 2000. *Indian Economy Under Reforms: An assessment of Economic and Social Impact* (First edition). Bookwell publishers, New Delhi
13. Panagariya Arvind, 2003, *Open up trade, Get Rich*, The Economic Time, New Delhi, 23rd April 2003
14. Pugel, T.A., Lindert, P. H., 2000, *International Economics* (Eleventh Edition), McGraw-Hill, New York
15. Robert Tancer, Srinivas Josyula., 2000, *Investment in the Indian Pharmaceutical Industry*, Thunderbird, American Graduate School
16. Romila Thapar. 2000. *India Another Millennium?* (First Edition). Viking, New Delhi
17. Schiller. B. R., 2000, *The Economy Today* (Eighth Edition), McGraw-Hill, New York.
18. Sharma., Zackariah., Thakur, 2002, *India 2002 A Reference Annual* (Annual Publication), Publication Division, Government of India, New Delhi
19. Sindhvani Trilok, 2003, *The Global Business Game: A Strategic Perspective* (Third Edition), Macmillan India Private Limited, New Delhi.
20. Surjit Bhalla, 2003, *Poverty, Inequality, and Growth in the Era of Globalisation* (First Edition), Penguin Books India, New Delhi
21. Uma Kapila, 2001, *Indian Economy Since Independence* (Second Edition), Academic Foundation, New Delhi
22. Svend Hollensen., 2001, *Global Marketing: A Market Responsive Approach* (Second Edition), Pearson Education Limited, England

23. Economic Survey 2002-2003, *Foreign Investment Estimates*, Reserve Bank of India
24. Dialogue for Economic Growth, Confederation of Indian Industries, 2002, New Delhi
25. Drugs and Pharmaceuticals, 25th April 2001, Confederation of Indian Industry, New Delhi

INTERNET REFERENCES

1. <http://www.bized.ac.uk>
2. <http://www.un.org>
3. <http://www.worldbank.org>
4. <http://www.wto.org>
5. <http://www.Indianinfo.com>
6. <http://www.Tradeindia.com>
7. <http://www.niper.nic.in>
8. <http://www.businessstandards.com>
9. <http://www.finmin.nic.in>
10. <http://www.cii.org>
11. <http://www.Glaxo.com>
12. <http://www.Cipla.com>
13. <http://www.Cadilazydus.com>
14. <http://www.ranbaxy.com>
15. <http://www.drreddyslab.com>
16. <http://www.panacea-biotec.com>
17. <http://www.rpglifesciences.com>
18. <http://www.wockhardt.in>
19. <http://www.globalisationguide.org>

CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

To the surprise of many, although not widely recognised, the global village has arrived. Against the fractured world of early 1980s, truncated into three divergent power and economic blocs, the world at the beginning of the new millennium is marching fast towards a new era, not only in time-scale but reaching out to a new techno-economic rendezvous-of free flow of capital, product and process technology, expertise and knowledge. Whilst almost all segments are registering technological thrust, the twin marvels, telecommunications and information technology, have completely repainted the canvas. Thanks to the Internet, representing the technological matrimony, it is no longer possible for any society to remain shrunk in a shell of national markets which remained highly protected until the conclusion of the global milestone of the World Trade Organization (WTO) agreements and Uruguay Round of trade negotiations.

Every day it can be heard in the news, through academicians, businesses students, and people on the streets, read in the textbooks, and in every single instance the word globalisation seems to bring out either a very skeptic view or indicate how globalisation has helped nations reach the milestones of growth and prosperity.

So, what is globalisation, why is it criticised and what are the reasons for its support?

Globalisation is different things to different people and thus affects individuals, nations, and businesses differently.



The aspect of globalisation that has been taken into consideration for the purpose of this study is the effect of outward looking policies across nations and its effect on industries within the economy and across nation.

Recent attacks on the globalisation have also translated into attacks on the wisdom of outward-oriented trade policies that the developing countries have embraced with increasing frequency. Skeptics question the ability of liberal trade policies in order to stimulate growth, development and economic prosperity. In addition, they also blame growth failure on the surge of imports from increased openness. Moreover, the outward-oriented trade policies are viewed as detrimental with regards to national sovereignty, employment and poverty.

An alternative view suggests that trade liberalisation and globalisation are responsible for cross border economic interdependence and integration of economies of the world. Globalisation has also acted as a catalyst in opening national borders to trade, capital, technology and information. Altogether this has resulted in increased trade and robust growth in the foreign direct investment through transnational and multinational organisations.

Arguments put forward by both, protagonists and the skeptics seem convincing, however, which argument holds true remains to be seen. As far as developing countries are concerned, there is compelling evidence that openness is a necessary condition for rapid growth. Evidence also shows that there are few developing countries that have grown rapidly on a sustained basis without simultaneously experiencing rapid growth in their exports and imports.

It is amazing that some countries have failed to experience economic growth and development even after adopting outward oriented policies? This and more will become clear as the study unfolds.

1.2 BACKGROUND OF THE RESEARCH

According to Uma Kapila (2001) and Reserve Bank of India, since independence (that is since 1947), India has largely remained a closed economy with its emphasis on producing everything domestically and as a consequence of its adoption of the protectionist policies. India, in the last 10-15 years has witnessed a transition from closed to an open economy, solely as an outcome of globalisation and WTO policies. This has led to the increased foreign trade and inflow of foreign investment (See fig 1.1 for FDI trends).

The inward looking policies implemented by India until 1991, has acted as protection for domestic firms. However, due to Uruguay round of trade negotiations and WTO policies, India has established various trade liberalisation policies, making the entry of foreign firms easier. It is evident that due to this aspect the domestic firms are facing immense competition from multinational organizations. For long run survival, the domestic firms will have to change their strategic planning. It is evident that strategic alliances such as mergers, acquisitions and joint ventures will be the order of the day in this given scenario.

At present India's economic policies are designed to attract significant capital inflows into India on a sustained basis and to encourage technology collaboration between Indian and foreign firms. Economic policy, especially of the nineties, has removed several constraints on economic growth. India has sought to increase inflows of Foreign Direct Investment (see fig 1.1) with much liberal policies since 1991, after forty years of cautious attitude towards it. Progressive liberal policies adopted in this regard have led to increasing inflows of foreign investment in the country, both in terms of direct investment, as well as portfolio investment (Reserve Bank of India: 2002) Figure 1.1 provides with an illustration of foreign investment inflows into India during the years 1991-2002 (both direct investment and portfolio investment). The new export import policies are more liberal in nature, which

facilitate, economic growth and development. Rationalised tariff levels and removal of quantitative restrictions characterises the current trade policy. The immediate objective of India as per the EXIM (export and import) policy, announced on 31st march 2001, is to achieve at least 1 percent share of global trade by 2004 (Kumar; 2000)

Foreign Investment Inflows in India (in US\$ million)

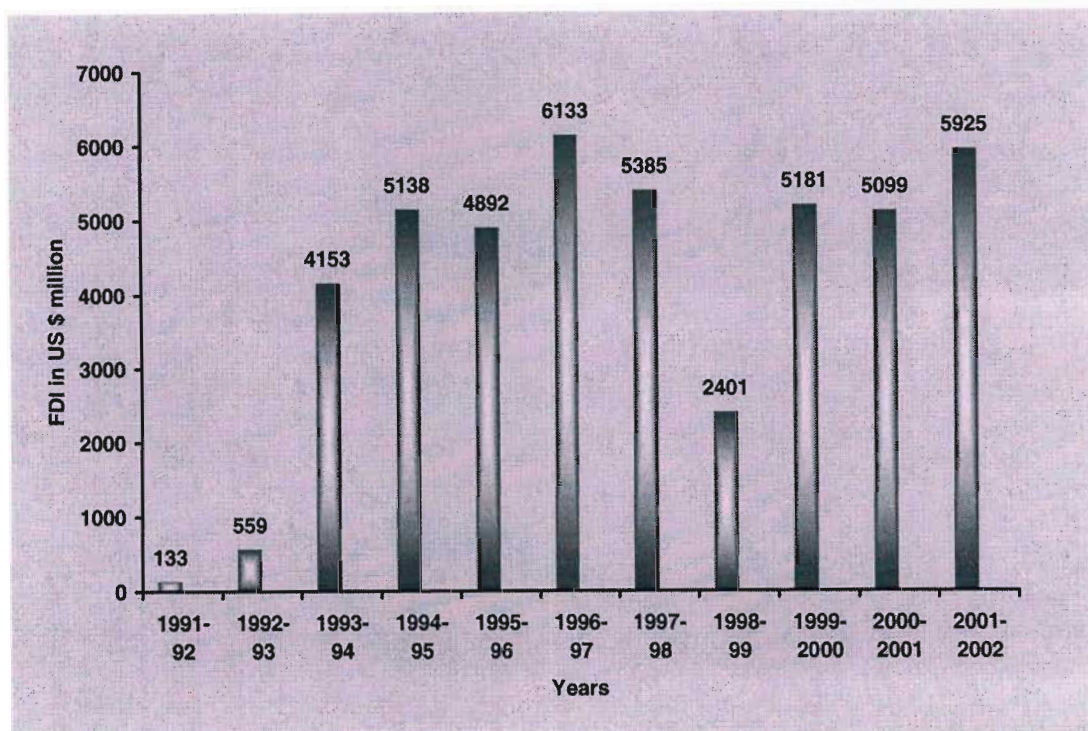


Figure 1.1: Foreign Investment Inflows in India (Us\$ Million)

Source: Reserve Bank of India

With the advent of globalisation and hence trade liberalisation, entry of foreign firms has increased the competition for domestic firms. As a result of this competition, local organisations have been reviewing their strategic planning. Industries such as food, textile, automobile and pharmaceutical all have been affected by foreign competition. Therefore, the domestic firms will have to review their strategies in order to stay competitive.

1.3 MOTIVATION FOR THE RESEARCH

The Indian pharmaceutical industry is one of the most developing industries in India, with increasing exports and imports. Prior to 1970 the Indian pharmaceutical industry experienced the tide of liberalisation when it was

still in its infantile stages of development. However, in 1970, the government adopted a protectionist policy in order to protect its infant industries.

Now, once again the domestic pharmaceutical industry will have to face the same situation as it did prior to 1970.

Multinational pharmaceutical companies were responsible for giving the Indian domestic industry a run for its money prior to 1970. Now that the winds of liberalisation have caught India, the international industry has once again moved their attention towards India. However, due to the nature of the industry and sustained growth and development over the last three decades, the Indian industry has emerged as one of the most competitive pharmaceutical players across the globe. Therefore, it remains to be seen what liberalisation and the competition has in store for the domestic industry and India.

This research is undertaken for the above-mentioned reasons, i.e. to evaluate the impact of trade liberalisation and globalisation Indian pharmaceutical industry

1.4 VALUE OF THE PROJECT

This study will help formulate recommendations for the Indian pharmaceutical companies which will assist them reassess and re-evaluate their strategies in the light of globalisation, assisting them gain a competitive edge. This study will also highlight the role for the government, which would help India in achieving prosperity, economic growth and development, social welfare and all that globalisation promises.

1.5 PROBLEM STATEMENT

Impact of trade liberalisation and globalisation on the Indian industry: A case analysis of the Indian pharmaceutical industry. The study will also explore the impact of trade liberalisation and globalisation.

1.6 OBJECTIVES OF THE STUDY

To evaluate: -

The impact of trade liberalisation and globalisation.

To determine: -

The effect of trade liberalisation and globalisation on the Indian pharmaceutical industry.

To establish:

Recommendations and suggestions for the long-term survival and development of the indigenous pharmaceutical industry and government's role to help achieve the objectives of sustained growth, prosperity and overall development.

1.7 RESEARCH METHODOLOGY

The research is fundamentally qualitative. However, it will involve the collection of data through the use of secondary sources and case studies.

1.7.1 CASE ANALYSIS

Due to the qualitative nature of the research, the methodology used to carry out this dissertation will be case analysis. The information will be obtained through multiple sources of information such as textbooks, journals, Internet etc. A case analysis of the Indian pharmaceutical industry will be undertaken in order to assess the impact of globalisation on domestic companies. Analysis of competition from foreign players, strategic alliances, and its effect on inflow of capital, employment, poverty and economic growth will be analysed.

1.8 LIMITATIONS OF THE PROJECT

No interaction with the pharmaceutical companies, since they weren't prepared to provide information and therefore had to, primarily, rely on the Internet and secondary sources of information.

With a broad topic of this genre, which tries to cover aspects of an industry and an economy, might leave certain aspects uncovered.

Due to the nature of the study, it was not possible to evaluate more than one industry. However, the pharmaceutical industry might not be truly indicative of all the industries because there are several other factors affecting industries across the economy.

1.9 RESEARCH SCHEDULE

Table 1.1 presents the research schedule. The study will commence with the proposal, collection of data, which will include observing the markets in India and collection of data through all possible sources, data analysis and finally the write up of the report.

Research Schedule

	Activity	Time frame
1	Dissertation Proposal	OCT 2002 - NOV 2002
2	Data and Information Collection	JANUARY 2003 -FEB 2003
3	Data Analysis	MAR 2003 - APRIL 2003
4	Final Write Up	APRIL 2003 - JUNE 2003

Table 1.1: Research Schedule

1.10 STRUCTURE OF THE STUDY

The study will be carried out in the form of five chapters; the first chapter will layout the proposal of the study, indicating aspects such as the background, methodology and the value of the study. The remaining four chapters will

carry out the study in systematic manner. The outline of the chapters that make up the study is presented below: -



Chapter Two: Literature Review

Chapter two will covers the theoretical aspects relating to the trade liberalisation and globalisation. International trade theories and models, such as Mercantilism, Absolute Advantage, Comparative Advantage, Hecksher-Ohlin, and Porters Diamond will be discussed to understand the implications of trade and removal of trade barriers. In addition, effects of tariff will also be discussed. Porters diamond, which more or less incorporates all the other models and theories, will be used for the case analysis in chapter 4. Globalisation and related issues such as poverty, national sovereignty, employment, growth and development will be discussed and analysed. Finally, a discussion of the impact of foreign competition due to opening up of borders will be undertaken.



Chapter Three: Overview of the Pharmaceutical Industry

A detailed overview of the Indian pharmaceutical industry will be presented in this section. The history, structure of the Indian pharmaceutical industry, global industry structure, how does the Indian industry compare with the global industry, what products and services it provides, will be discussed.



Chapter Four: Analysis of the Pharmaceutical Industry

This chapter will evaluate the Indian pharmaceutical industry against the information developed in chapter three and the “models” established in chapter two.



Chapter Five: Recommendations and Conclusion

Recommendations for the pharmaceutical companies in order for the industry to survive the winds of liberalisation and help in making India a global industrial base will be formulated in this chapter. Areas where the industry has a competitive edge will be highlighted. In conjunction with this, certain recommendations for the government will also be presented so as to achieve sustained growth and development.

1.11 SUMMARY

The study is designed to carry out an analysis of the Indian pharmaceutical industry exploring the impact of trade liberalisation and globalisation. There are many speculations as far as the topic of 'globalisation' is concerned. That is why most economies are reluctant to liberalise. It is strongly felt that globalisation brings with it, poverty, unemployment, and loss of national sovereignty. Whether this is just a speculation, or there is some reality in it, is hard to evaluate, but an attempt will be made to at least try and explore the reality. Lets begin by looking at the impact of trade liberalisation and globalisation and related issues such as poverty, national sovereignty, employment, growth and development.

CHAPTER TWO: IMPACT OF TRADE LIBERALISATION AND GLOBALISATION: LITERATURE REVIEW

2.1 INTRODUCTION

What happens when autarkic approaches such as, import substitution behind high tariff walls fail to provide sustainable growth and development? Well, to answer this question let's look at a simple economic formula: -

$$GDP = C + I + G + (X-M)$$

Which implies higher (X-M) will lead to higher GDP (Schiller: 2000:31-32). In other words, increase in foreign trade that is exports and imports will lead to high levels of gross domestic product or the income of the economy. Kautilya further supports this argument; according to him trade is the third pillar of economic prosperity (Sindhwani: 2003). Kautilya stated, as cited by Sindhwani (2003), "The three principle components of national economics and prosperity are '*krishi*' (agriculture), '*pashupalaya*' (cattle tending) and '*vanijya*' (trade). So, does it imply that, higher trade = higher growth and prosperity? In that case every country must implement this simple economic formula and reach the targets of growth and development? However, this is not the picture that emerges in real life. So, where does the problem lie? Maybe it lies in what happens after trade? Then, what is the impact of trade on nation and more importantly what is the outcome of much talked about globalisation? Let's try and analyse some of the aspects related to trade liberalisation.

According to the theory, some degree of outward orientation is vital in order to achieve sustainable growth, development, and poverty reduction. This illustrates the underlying factor behind the rapid growth of the world economy witnessed in the recent decade. Growth in international trade has



been driven both by technological development and more importantly, reduction in trade and investment barriers. Most of the developing countries have adopted liberal policies to take full advantage of the opportunities for economic development through trade.

Therefore, the solution to any country's problem with regard to growth and development ought to be trade liberalisation and globalisation. Unfortunately, according to the skeptics view, whereas on one hand, liberalisation and globalisation have acted as a catalyst for growth, they believe globalisation and trade liberalisation have not turned the tide against poverty (Joseph Stiglitz: 2003). In fact the gap between rich and poor countries and wealth disparities within countries have increased, indicating that the rich have become richer while the poor have become poorer (Surjit Bhalla: 2003).

Consequently, a fundamental question needs to be addressed, that is, whether the shift towards a more integrated and interdependent global economy has acted as an engine for growth or has it led to rise in unemployment and poverty? And what is the affect of trade liberalisation on national sovereignty, Job loss, labour exploitation and environment effects? Micro economic questions also need to be addressed such as the impact of trade liberalisation and globalisation on the domestic industry/ firms and multinational organisations.

2.2 TRADE THEORIES

In order to better understand the implications of trade and removal of both tariff and non-tariff barriers to trade, it will be worthwhile to look at some of the international trade theories developed by great economists such as Ricardo, Adam Smith, Michael Porters and David Hume. International trade theories examine what trade patterns would evolve if trade were allowed to move freely among countries and how much, in which product and with whom a country will trade in absence of restrictions among nations. In addition, the theories take into account governmental influence with the free

movement of goods and services among countries in order to alter the amount, composition and direction of trade (Sindhwani: 2003). In an attempt to realise how international trade increases the welfare of its citizens, the principles of Mercantilism, Absolute Advantage, Comparative Advantage and Heckscher-Ohlin and Porters Diamond will be considered.

2.2.1 MERCANTILISM

Mercantilism theory of trade emerged in the 16th century and is one of the first economic doctrines on international trade. The theory is based on the idea that national wealth and power are best served by maintaining a trade surplus, that is exporting more than importing. As Hill puts it, “its principle assertion was that gold and silver were the mainstay of national wealth and essential to vigorous commerce” (Hill: 2003: 142). During this time period gold, silver and other precious metals were the currency of foreign trade and therefore by maintaining trade surplus would accumulate gold, silver and other precious metals and consequently increase its national wealth and political control. Therefore, the aim of the government was to limit imports and to facilitate exports. In order to achieve this, imports were discouraged by tariffs, quotas etc and exports were encouraged by government in the form of subsidies. The belief that trade surplus leads to economic growth and development explains why until recently very many countries around the globe have adopted an import substitution and protectionist policies.

The theory of mercantilism, which encourages countries to hide under the blanket of trade barriers in order to dampen imports and stimulate exports, provides no explanation for why these countries have failed to achieve economic growth and development.

David Hume tried to analyse the weakness of the theory. According to him, if China was trading with Japan and had a trade surplus, the resulting inflow of capital would boost the money supply and generate inflation in China. Consequently, in Japan, the outflow of capital would deflate the money supply causing deflation leading to lower prices. This would, in turn encourage the Japanese to buy fewer Chinese goods, as they are now more expensive, and would encourage the Chinese to buy more from Japan

since their goods are becoming cheaper. Thus the trade balance of Japan would recover and China's trade balance would get worse. Therefore according to Hume, no country can sustain a trade surplus. (Sindhwani 2003)

2.2.2 ABSOLUTE ADVANTAGE

A country has an absolute advantage over its trading partners if it is able to produce more of goods or services with the same amount of resources or the same amount of goods or services with fewer resources (Schiller: 2000:712). Taking an example of Zambia, which has an absolute advantage over many countries in the production of copper. This occurs because of the existence of reserves of copper ore or bauxite. China has an absolute advantage in the production of textile due to its low labour costs.

It can be clearly seen that in terms of the production of goods, there are obvious gains from specialisation and trade. If Zambia produces copper and exports it to China and imports textiles, both the countries would gain from trade by specialising. This further can be ascertained with the use of the production possibility curves of China and Zambia, which will help in assessing the extent of gain from trade.

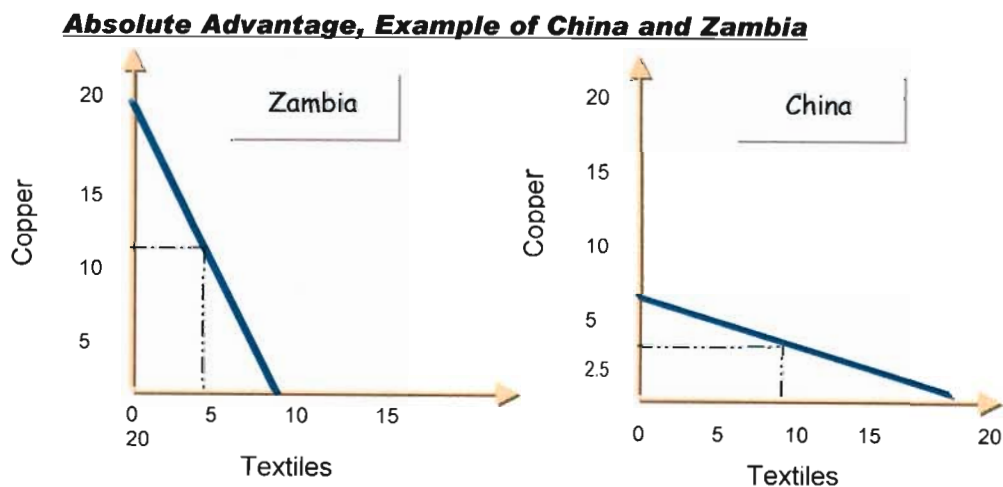


Figure 2.1: Absolute Advantage, Example of China and Zambia

Gains from Trade for China and Zambia

Production and Consumption without Trade		
	<i>Copper</i>	<i>Textiles</i>
Zambia	10.0	5.0
China	2.5	10.0
Production with Specialisation		
	<i>Copper</i>	<i>Textiles</i>
Zambia	20.0	0
China	0	20.0
Total production	20.0	20.0
Consumption After Zambia Trades 6 units of Copper for 6 yards of Textile from China		
	<i>Copper</i>	<i>Textiles</i>
Zambia	14.0	6.0
China	6.0	14.0
Increase in Consumption as a result of Specialisation and Trade		
	<i>Copper</i>	<i>Textiles</i>
Zambia	4.0	1.0
China	3.5	4.0

Table 2.1: Gains from Trade for China and Zambia

Figure 2.1 and table 2.1 helps to illustrate gains from trade and specialisation. It is apparent that countries gain from trade; output of both textile and copper is greater than before and therefore consumers of both China and Zambia will be able to consume more. Table 2.1 shows how consumption in both the countries have gone up relatively as a result of specialisation and trade.

2.2.3 COMPARATIVE ADVANTAGE

What happens if countries like United States or Japan have an absolute advantage in producing all the goods? Does it indicate that they will not benefit from international trade since they can produce all the goods efficiently at home?

According to Ricardo's theory (Sindhwani: 2003), a country has a comparative advantage in the production of goods or services that it produces at a lower opportunity cost than its trading partners. Some

countries have an absolute advantage in the production of many goods relative to their trading partners. Others have an absolute disadvantage, which implies that, they are inefficient in producing all goods and services, relative to their trading partners. The theory of comparative advantage according to Ricardo argues that, put simply, it is better for a country that is inefficient at producing goods to specialise in the production of that good it is least inefficient at, compared with producing other goods (Jones: 2000).

Figure 2: Comparative Advantage for China and U.S

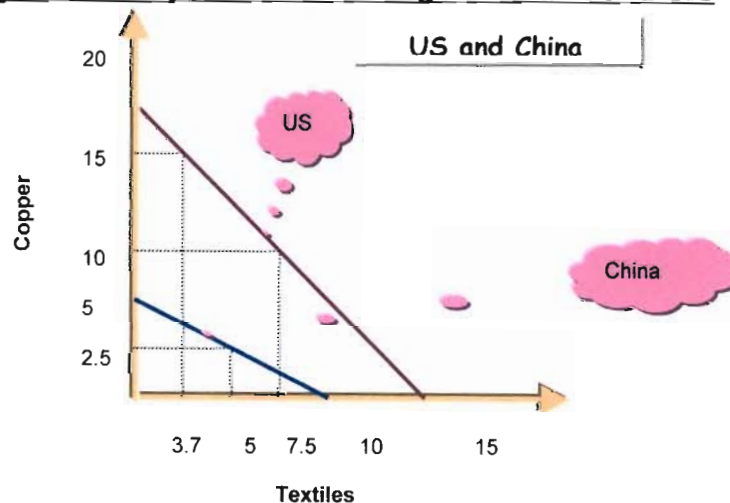


Figure 2.2: Comparative Advantage for China and U.S








Gains from Trade for US and China

<i>Production and Consumption without Trade</i>		
	Copper	Textiles
U.S	10.0	7.5
China	2.5	5.0
Total production	12.5	12.5
<i>Production with Specialisation</i>		
	Copper	Textiles
U.S	15.0	3.75
China	0	20.0
Total production	20.0	20.0
<i>Consumption After U.S Trades 4 units of Copper for 4yards of Textile from China</i>		
	Copper	Textiles
U.S	11.0	7.75
China	4.0	6.
<i>Increase in Consumption as a result of Specialisation and Trade</i>		
	Copper	Textiles
U.S	1.0	0.25
China	1.5	1.0

Table 2.2: Gains from Trade for US and China

It can thus be derived that after U.S. and China exploit their comparative advantage, in copper and textiles respectively, production of output increases (which can be seen in the table 2.2). Since both the countries are producing more, they can now engage in trade and benefit from it. Thus consumption of copper and textiles increases in both the countries as a result of specialisation and trade.

The essence of the theory is that 'potential world production is greater with unrestricted free trade than it is with restricted trade' (Hill: 2003: 146). Therefore it can be concluded that unrestricted trade is beneficial for countries across the globe, but the degree to how much each nation actually benefits might differ since model includes many unrealistic assumptions (Jones: 2000): -

-  There are no transportation costs.
-  Costs are constant and there are no economies of scale.
-  There are only two economies producing two goods.
-  The theory assumes that traded goods are homogeneous
-  Factors of production are assumed to be perfectly mobile.
-  There are no tariffs or other trade barriers.
-  There is perfect knowledge, so that all buyers and sellers know where the cheapest goods can be found internationally.

An important Question that arises is that, can this model be applied to the real world scenario, which consists of numerous goods, high transportation costs, volatile exchange rates, immobile resources/factors of production and dynamic environment? Is it realistic to conclude that free trade is mutually beneficial for all the nations across the world? Recent studies undertaken by Sindhwani and the like, suggest that even though the model has

shortcomings, countries can benefit from free trade, which will be analysed using real world examples later in the chapter.

2.2.4 HECKSCHER-OHLIN THEORY

Ricardo's model is based on differences between countries in technology and puts emphasis on the fact that comparative advantage arises from differences in productivity. The Eli Hecksher and Bertil Ohlin theory (1933) as cited by Sindhvani (2003) of factor endowment is based on differences in relative factor endowments across countries and differences between goods in their factor intensity (the proportion in which factors are used). Which means the extent to which a country is enriched in resources such as, land labour, or capital (Internet 1). Therefore a country with abundant labour will have a low labour cost and will export goods that are labour intensive.

Countries such as China, India, Malaysia, Indonesia are endowed with unskilled labour that is why these developing countries produce more of goods that are labour intensive, such as textiles, footwear and agricultural products and the like. On the other hand countries such as, Germany, Japan, United States, excel in the production and export goods which are skilled labour intensive or capital intensive, such as, computer software, automobile, aircrafts etc.

An example of a two-country trade case, Japan and Malaysia, where one is enriched with skilled labour and the other is endowed with unskilled labour respectively will assist in understanding the outcome of trade.

Hecksher Ohlin Theory using examples of Japan and Malaysia

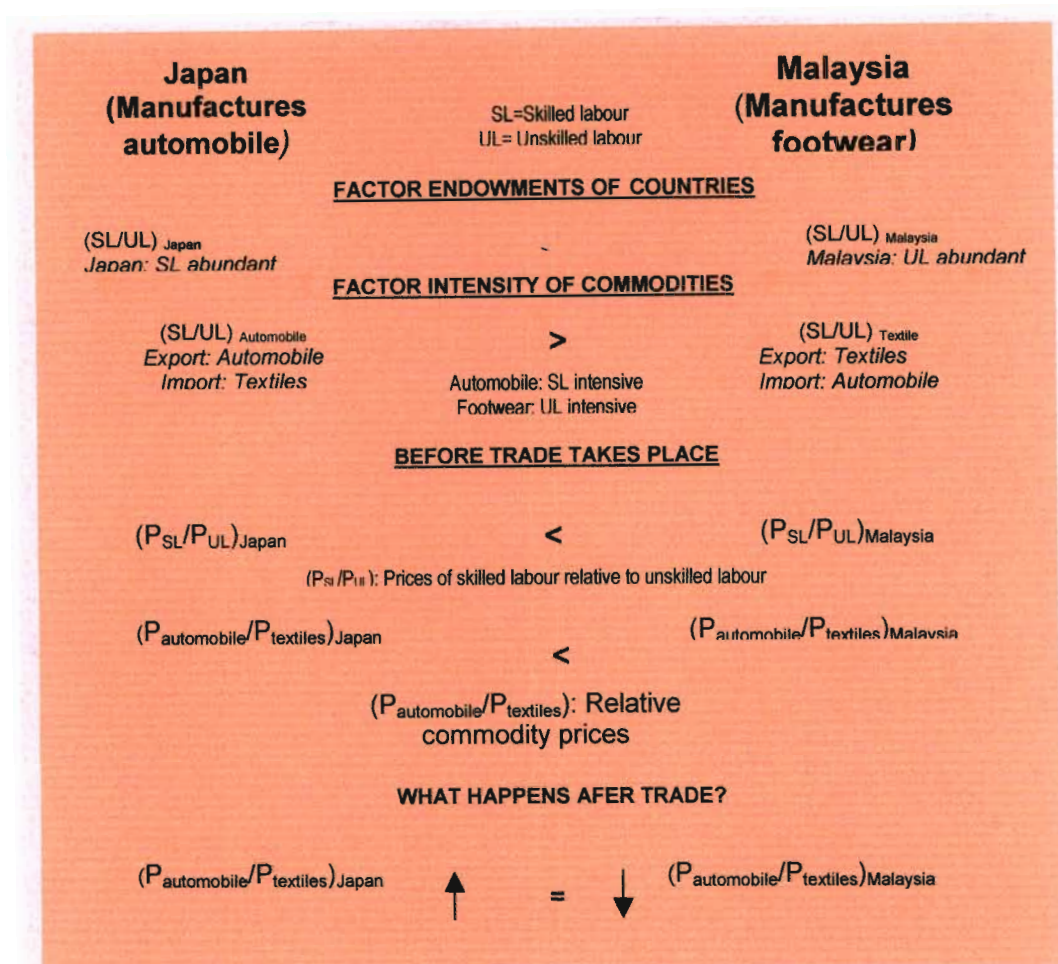


Table 2.3: Illustration of Hecksher Ohlin Theory using examples of Japan and Malaysia

Since Japan is skilled labour abundant country it will export automobile, which provides it with a comparative advantage over Malaysia. Malaysia will export textiles and import automobile from Japan. As trade opens up it results in factor-Price equalisation, which claims that trade leads to equalisation of returns to factors across countries.

Hence with trade, wages should become equal across countries and the returns to other factors such as land and capital. If this holds true, then why aren't wages in Japan, equal to wages in China, Malaysia or India? However, wages and prices across the world paint a different picture altogether. Why is it so? In order to answer this question it is important to understand that the strong conclusion we derive from this model depends on assumptions of, no trade restrictions, no transportation cost,

homogeneous technology and uniform purchasing power across countries. These assumptions make the models of international trade theory less applicable to the real world. Nevertheless, they indicate a very fundamental aspect that trade without any restrictions will eventually enhance the growth performance of a country.

2.2.5 PORTERS DIAMOND

Michele Porter established Porters Diamond in an attempt to determine why some nations archive international success in a particular industry while others fail in international competition. Why does China do so well in the textile industry? And Japan in the automobile industry? According to porters, the theory that we have established so far, answers only a part of the explanation.

According to Porter (Svend: 2001), four broad attributes of a nation shape the environment in which homegrown firms compete and these attributes promote or impede the creation of competitive advantage (see fig 2.3).

Determinant of National Competitive Advantage: Porter's Diamond

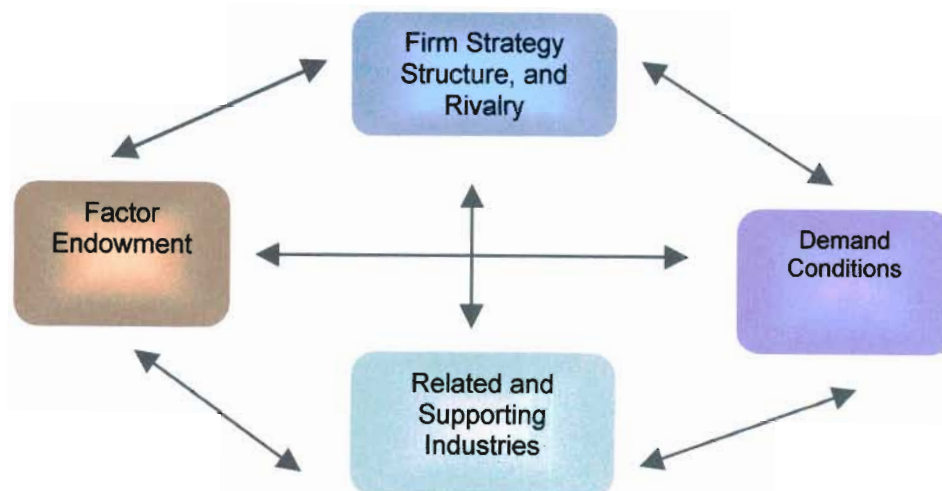


Figure 2.3: Determinant of National Competitive Advantage: Porter's Diamond

(Source: Svend: 2001)

Factor endowment, demand conditions, relating and supporting industries, firm strategy, structure and rivalry are the four attributes that constitute the diamond. According to Porters, firms are most likely to succeed in industries

where the diamond is most favorable. He also stated that, “the diamond is mutually reinforcing system” (Hill: 2003:159). The four attributes are interlinked and the effect of one aspect spills over on to the others. For instance, Porters states (Hill: 2003) that, “favorable demand conditions will not result in competitive advantage unless the state of rivalry is sufficient to cause firms to respond to them”.

In addition to this, according to him two very important variables such as chance and government also play a very essential role in influencing national demand. For example, innovation of the cell phones reshaped the entire telecommunications industries and provided opportunity for nation's firms to succeed over others. Similarly, government policies and regulations can improve national advantage or can do the total opposite.

It is interesting to see how all the theories have some weaknesses but still bring out a very important aspect, which can be of great importance in the real world scenario. All the models signify the relevance of trade and how countries across the world can benefit if they engage in trade, by specialising, by capitalising on their factor endowments or by realising where their comparative advantages lie.

2.3 THE EFFECT OF TARIFF ON TRADE

At this point it becomes essential to look at the effect of tariff since, our goal is to try and assess how the liberalisation of trade helps or impedes the development and economic growth of a country. It is argued that tariff not only lowers world welfare but also the welfare of nations imposing these tariffs. In addition to this, it is also believed that nations can achieve something better without the imposition of tariffs as compared to what they can achieve through the imposition of tariff (Pugel: 2000).

Simple supply and demand diagrams help to illustrate the welfare effects of tariffs on producers, consumers and the nation as a whole. This will help in order to evaluate whether the arguments by the trade protestors hold true. For example, they claim trade rules are biased toward the interests of producers.

2.3.1 SMALL COUNTRY SCENARIO

The small country scenario means that the country's imports are a very small share of the world market, so small, that even a complete elimination of imports would have an imperceptible effect upon world demand for the product and thus would not affect the world price. Thus, when a small country implements a tariff, there is no effect upon the world price (Hill: 2003).

Lets consider a market in a small importing country such as Belgium that faces an international or world price of P_w in free trade for rice (figure 2.4). At P_w , domestic demand is D_w , domestic supply is S_w and imports equal to the difference between D_w and S_w (See figure 2.4).

Tariff effect on Belgium, a 'small' country case

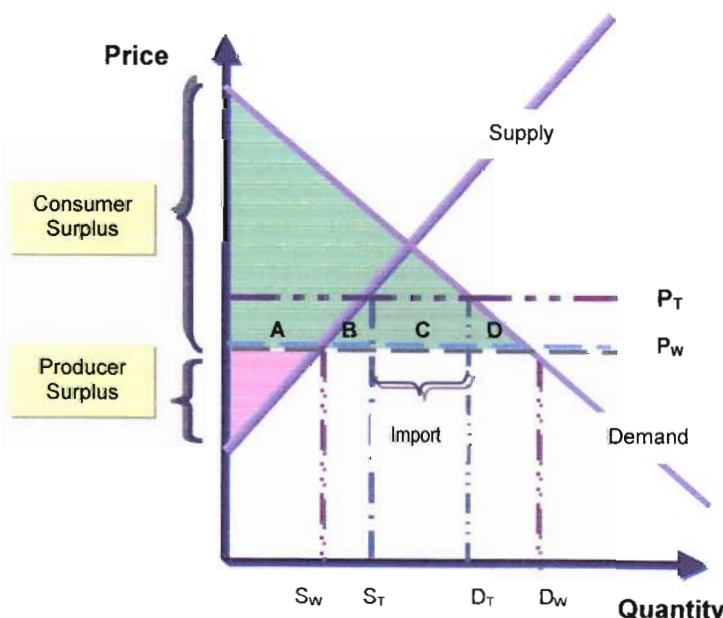


Figure 2.4: Tariff effect on Belgium, a 'small' country case

When a specific tariff is implemented by Belgium (a small country) it will raise the domestic price by the full value of the tariff. Consequently, the price in the Belgium rises to P_T as a result of the imposition of tariff. In this case the tariff rate would be, $P_T - P_w$ (see fig 2.4).

2.3.1.1 TARIFF EFFECTS ON IMPORTING COUNTRY CONSUMERS

Consumers of the product in the importing country are worse-off as a result of the tariff. The increase in the domestic price of both imported goods and

the domestic substitutes reduces consumer surplus in the market. Which can be seen in the figure 2.4, where loss of consumer surplus equals $A+B+C+D$ (Pugel: 2000).

2.3.1.2 TARIFF EFFECTS ON IMPORTING COUNTRY PRODUCER

Producers in the importing country are better off as a result of the tariff. The increase in the price of their product increases producer surplus in the industry (+A in figure 2.4). The increase in price also induces an increase in output of existing firms (and perhaps the addition of new firms), an increase in employment, and an increase in profit and/or payments to fixed costs.

2.3.1.3 TARIFF EFFECTS ON IMPORTING COUNTRY GOVERNMENT

The government receives tariff revenue as a result of the tariff (+C in figure 2.4). Who will benefit from the revenue depends on how the government spends it. These funds help support diverse government spending programs, therefore, someone within the country will be the likely recipient of these benefits.

2.3.1.4 TARIFF EFFECTS ON NATIONAL WELFARE

The aggregate welfare effect for the country is found by summing the gains and losses to consumers, producers and the government. The net effect consists of two components: a negative production efficiency loss (B in figure 2.4), and a negative consumption efficiency loss (D in figure 2.4). The two losses together are typically referred to as 'deadweight losses'. Since, there are only negative elements in the national welfare change, the net national welfare effect of a tariff must be negative. This means that a tariff implemented by a "small" importing country will eventually result in reduced national welfare.

Therefore it can be concluded that whenever a "small" country implements a tariff, national welfare falls and the higher the tariff, the larger will be the loss in national welfare. In addition, the tariff causes a redistribution of income. Producers and the recipients of government spending gain, while consumers lose. Due to the fact that the country is assumed "small," the tariff has no effect upon the price in the rest of the world. Therefore there

are no welfare changes for producers or consumers around the globe. Even though imports are reduced, the related reduction in exports by the rest of the world is assumed to be too small to have a noticeable impact.

2.3.2 LARGE COUNTRY SCENARIO

Lets assume that there are only two trading countries, one importing 'large country' and one exporting country. The supply and demand curves for the two countries are shown in figure 2.5. P_w is the free trade equilibrium price. At that price, the excess demand by the importing country equals excess supply by the exporter.

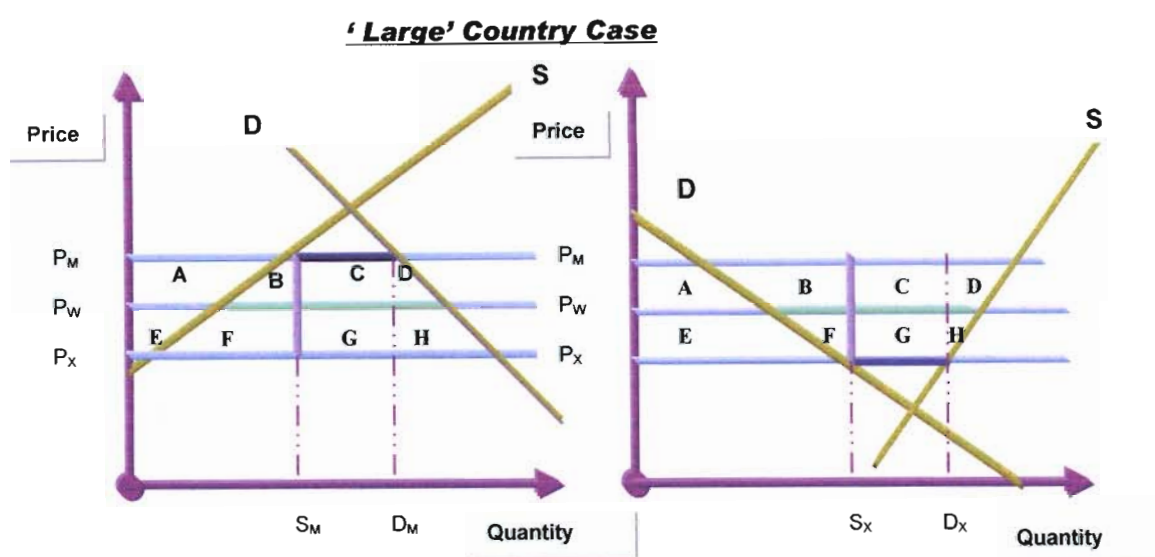


Figure 2.5: Large Country case

The quantity of imports and exports is shown as the green line segment on each country's graph. When a large importing country implements a tariff it will cause an increase in the price of the good on the domestic market and a decrease in the price in the rest of the world. Suppose, after the tariff, the price in the importing country rises to P_M and the price in the exporting country falls to P_X . If the tariff is a specific tax then the tariff rate would be equal to the difference between P_M and P_X (Figure 2.5).

2.3.2.1 IMPACT OF TARIFF ON CONSUMERS

Consumers in the importing country suffer a reduction in welfare as a result of the tariff. The increase in the domestic price of both imported goods and

the domestic substitutes reduces the amount of consumer surplus in the market, equivalent to the area $A+B+C+D$ (Figure 2.5).

Consumers in the exporting country experience an increase in welfare as a result of the tariff. The decrease in their domestic price raises the amount of consumer surplus (+e see figure 2. 5) in the market.

2.3.2.2 IMPACT OF TARIFF ON PRODUCERS

Producers in the importing country experience an increase in welfare as a result of the tariff, producer surplus increases by the area A (in figure 2.5). The increase in the price of their product on the domestic market increases producer surplus in the industry. The price increases also induces an increase in output of existing firms and perhaps the addition of new firms, increase in employment, and increase in profit.

Producers in the exporting country experience a decrease in welfare due to tariff. The decrease in the price of their product in their own market reduces producer surplus in the industry equivalent to the area e,f,g,h in figure 2.5. Decline in price also induces a reduction in output, employment, and in profit and payments to fixed costs.

2.3.2.3 IMPACT OF TARIFF ON GOVERNMENT REVENUE

The government receives revenue as a result of the tariff. Who benefits from the revenue depends on how the government spends it. Typically the revenue is simply included as part of the general funds collected by the government from various sources. In this case it is impossible to identify precisely who benefits. However, these funds help support many government spending programs, which presumably helps most people in the country, as is the case with public goods. Thus, someone within the country is the likely recipient of these benefits.

2.3.2.4 IMPACT OF TARIFF ON NATIONAL WELFARE

The aggregate welfare effect for the country is found by summing the gains and losses to consumers, producers and the government. The net effect on importing country consists of three components: a positive terms of trade

effect (G in figure 2.5), a negative production distortion (B in figure 2.5), and a negative consumption distortion (D in figure 2.5).

For the reason that there are both positive and negative elements, the net national welfare effect can be either positive or negative. The interesting result, however, is that it might be positive. This means that a tariff implemented by a "large" importing country may raise national welfare.

The aggregate welfare effect for the exporting country is found by summing the gains and losses to consumers and producers. The net effect consists of three components: a negative terms of trade effect (g in figure 2.5), a negative consumption distortion (f in figure 2.5), and a negative production distortion (h in figure 2.5).

Since all three components are negative, the importer's tariff must result in a reduction in national welfare for the exporting country. However, it is important to note that a redistribution of income occurs, i.e., some groups gain while others lose. In this case the sum of the losses exceeds the sum of the gains.

Usually, if a "large" country implements a small tariff, it will elevate national welfare but if the tariff is set too high, national welfare will fall. One important thing to remember is that there will be a positive optimal tariff that will maximise national welfare.

However, it is also important to note that everyone's welfare does not rise when there is an increase in national welfare. Instead there is a redistribution of income. Producers of the product and recipients of government spending will benefit, but consumers might end up losing. A national welfare increase implies that the sum of the gains exceeds the sum of the losses across all individuals in the economy. Economists generally argue that, in this case, compensation from winners to losers can potentially alleviate the redistribution problem.

2.3.2.5 TARIFF EFFECTS ON WORLD WELFARE

The effect on world welfare is found by summing the national welfare effects in the importing and exporting countries. By noting that the terms of trade gain to the importer is equal to the terms of trade loss to the exporter, the world welfare effect reduces to four components: the importer's negative production distortion (B in figure 2.5), the importer's negative consumption distortion (D in figure 2.5), the exporter's negative consumption distortion (f in figure 2.5), and the exporter's negative production distortion (h in figure 2.5). Since each of these is negative, the world welfare effect of the import tariff is negative. The sum of the losses in the world exceeds the sum of the gains. It can be concluded that an import tariff results in a reduction in world production and consumption efficiency. In other words trade liberalisation increases production and consumption efficiency and therefore national welfare.

Protecting industries through tariffs is costly on consumers. World Bank Reports (Internet 3) established that, consumers pay, on average, \$155,000 for every job “saved” in a protected industry. At the same time, such protectionist measures harm economies by diverting resources away from the most productive sectors. For example, in United States, steel tariffs raise the cost of steel, harming automobile manufacturers and other steel consuming industries, which employ 10 times as many workers as the steel manufacturers. These productive sectors of the economy also benefit when trade opens new markets across the globe for their products. Expanding trade means more output, which in turn leads to employing more workers. Consequently, liberalisation of trade and elimination of tariffs lead to increased employment, lower prices leading to growth and development in the long run.

2.4 NON-TARIFF BARRIERS

Even though many tariff barriers have been flagged in the last few decades, leading to a more integrated world, countries continue to use many mechanisms to restrict imports. Non-tariff barriers such as quotas,

embargoes, administrative delays, licenses and economies of scale still remain (Joseph Stiglitz: 2003).

What happens if these barriers are imposed? What happens to domestic production? What happens to equilibrium price? What is the effect on consumers and producers?

Quotas, a form of trade barriers is a physical limit imposed upon the amount of a good that may be imported. They have the effect of restricting the total supply to the domestic market. In addition, they also have the effect of raising prices higher than they would otherwise be in the home country if free trade was permitted (Sindhwani: 2003). They enhance the market shares of "protected" domestic producers and limit the volume of goods and services exported into the country from foreign production. Prohibitive tariffs and non-tariff barriers can preclude and eliminate imports of some products altogether.

Trade barriers are the natural consequence of self-interest and political influence. Domestic producers and their workers tend to favour trade barriers as a shield against foreign competition or in order to protect infant industry. Consumers and society can benefit from free trade and suffer from protectionism. In addition, at present many of the trade barriers are the legacy of post WWII economics literature that recommended, "import substitution" as a dynamic trade strategy for developing countries (Internet 1). Trade barriers were especially favoured for manufactured products, so that less developed countries could create their own industrial sector and emulate the historical experience of the industrialised economies.

2.5 IMPLICATION FOR INDUSTRY

The essence of globalisation lies in the industries within a country since they are affected the most. An industry generally has to alter its strategies in order to remain competitive. Globalisation along with other things brings with it, competition, which at times can be crucial for companies to improve their quality, standard and efficacy. Global competition also calls for evaluation of

strategic planning and encourages strategic alliances across companies (Hisrich and Peters: 2000).

2.5.1 COMPETITION

As indicated by Sindhvani (2003), a line of reasoning, which emerges from the economic restructuring in terms of liberalisation, is increase in competition in the given industry stemming from both national and international players. Without a doubt, domestic and external competition is likely to grow and escalate where the producers chase the buyers and not the other way around, which has been very evident in the past two-three decades in the world economy. Liberalisation in foreign investment, abolition of import licenses, de-licensing of the industries, and eradication of other such barriers are likely to lead to more competition relative to 'pre-liberalised era', stemming from both domestic industry as well as foreign industry. This is a major impact of deregulation and a key characteristic of a freer economy with all its pressures for efficiency and its pain of transition. Today industries across the world can expect that the day of the sellers market, which prevailed under the licensing regime, is by and large over and the day of the consumer has arrived. This is, of course, of great advantage to the consumer, and producers for purpose of achieving long-term competitiveness of industries.

2.5.2 STRATEGIC ALLIANCES

With the globalisation of the world economy, companies are growing by, strategic alliances to contain costs and stay competitive. Pressure on prices has made Multinational Companies (MNCs) to resort to joint ventures, mergers and acquisitions and other forms of strategic alliances in order to contain cost and enhance research and development. Joint ventures and other forms of strategic alliances have occurred between U.S and foreign firms in order to penetrate international markets and have been a good mechanism for a company to enter an international market. The last few decades has witnessed strategic alliances between rival companies such as General Motors and Toyota or General Electric and Westinghouse (Hisrich and Peters: 2000: 532). Another example of alliance between Boeing,

Mitsubishi, Fuji, and Kawasaki shows how businesses enter into strategic alliances with the intention of sharing technology and cutting costs.

Strategic alliance may take any form of business organisation, which allows resource pooling and cost sharing with the organisations involved. Alliances may have the following advantages (refer to figure 2.6): -

Market Penetration

Makes market penetration easier for both domestic and multinational firms. For example, a joint venture allows a multinational to enter the local market and at the same time allows domestic firm to penetrate the foreign markets (Sindhwani: 2003).

Knowledge of Market information

For example, the local partner will be valuable in providing knowledge of local markets and influence governments and other institutions, which affect the business.

Production Facility

The availability of production facilities of the domestic partner helps to minimise the problems associated with starting a new production unit.

Capital Resources

Providing smaller firms who have limited financial resources with an opportunity to gain access to capital and foreign investment.

A Conceptual Framework for Strategic Alliances

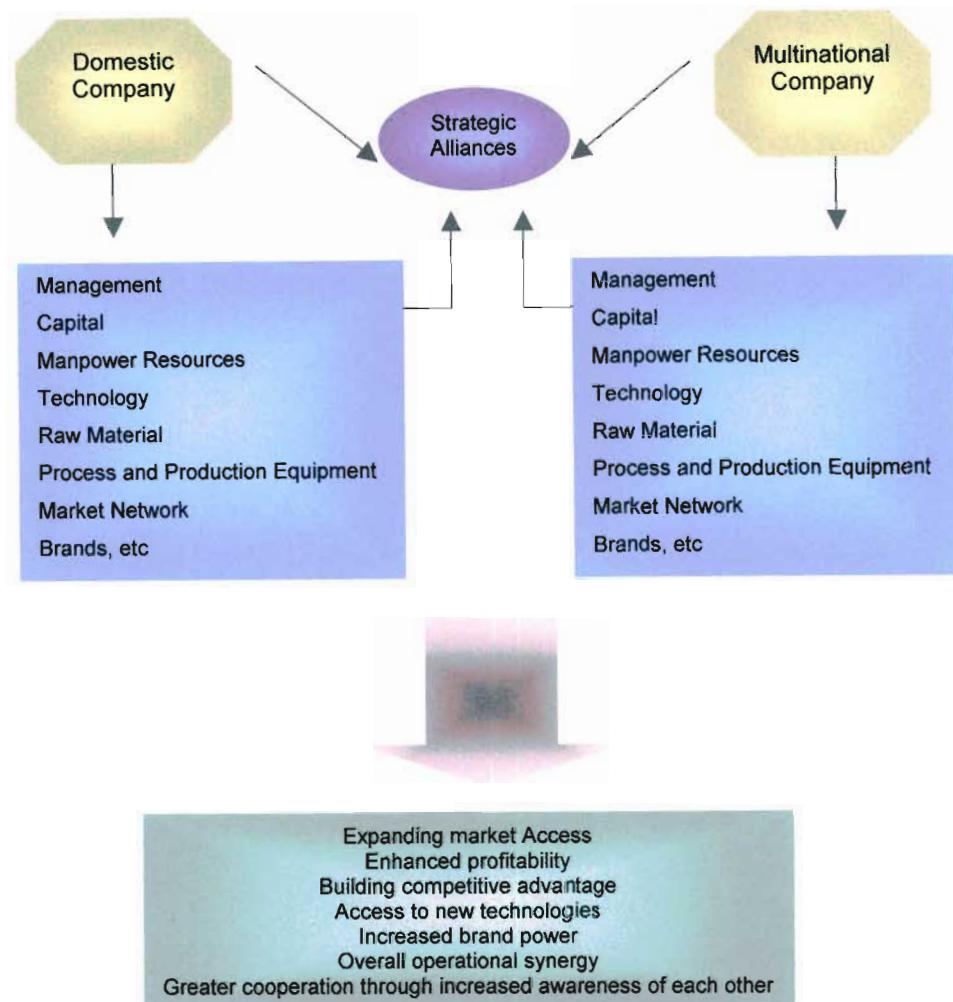


Figure 2.6: A conceptual framework for strategic Alliances

(Source: Sindhvani: 2003)

2.6 OVERVIEW OF GLOBALISATION

Globalisation is a process of increasing interconnectedness of individuals, groups, companies and countries. Over the past 2 decades, foreign trade and the cross-border movement of technology, labour, goods, ideas and capital have been substantial. The technological, economic and political changes have not only brought people closer together but have also generated serious concerns over the terms of that integration. These concerns have been generated by the realisation that while globalisation has led to benefits for some, it has not led to benefits for all.

According to the international trade theory (as discussed before), globalisation should equalise factor prices across countries. Due to trade in

goods, services, and capital mobility, labor wages should equalise in advanced and developing countries. If this holds true, then globalisation should have been beneficial to workers and consumers in developing countries. Unfortunately, globalisation has coincided with higher unemployment, poverty in some areas and widening income inequality. Therefore, is it correct to say that perhaps globalisation is responsible for these trends despite of what the international theorists argue?

For some, all the commotion about the negative impact of globalisation on workers and employment is just a disguise to support protectionist policy, and to introduce new blockage to the free flow of goods, services and capital across countries.

2.6.1.GLOBALISATION DEBATE

Before jumping to any conclusion regarding globalisation and liberalisation regime, it will be interesting to look at some of the arguments in favour of and against globalisation

2.6.1.1 PRO-GLOBALISATION



The growth in trade between nations has contributed to lifting 3 billion people out of poverty over the past 50 years. Reducing tariff barriers, which makes it easier for nations to trade with each other, lifts the wealth of all nations by allowing them to concentrate on those areas where they have greatest expertise (Internet 19).



The Poor countries that have adopted a liberalisation regime have in fact gained increases in employment and national income due to labour and capital shifts from import-competing industries to expanding, newly competitive export industries. In addition to providing jobs, companies moving to developing countries often export higher wages and working conditions compared with those in domestic companies operating in the country. The experience

in countries like Korea is that as countries develop, their wage levels rise and the focus shifts from labour intensive to more capital and knowledge intensive industries (Internet 1).



It is true that there has been some contraction in employment in labour intensive industries such as textiles and footwear in developed countries over the past 20 years as production has moved to countries where labour is cheaper (Internet 3). However this is part of the process of development. It would be condemning less developed countries to even greater poverty to restrict their ability to compete in industries like textiles in developed markets.

2.6.1.2 ANTI-GLOBALISATION

Critics of globalisation say that rising inequality is the inevitable consequence of market forces, which give the rich the power to add further to their wealth. Hence, large corporations invest in poor countries only because it enables them to make greater profits from low wage levels and access to their (poor country's) natural resources (Joseph Stiglitz: 2003). It is believed that the free market does nothing to address re-distribution of wealth. It presumes that wealth will spill over to the poor.



Globalisation results in the exploitation of millions of workers in countries that do not give workers rights to organise. For example, a woman who sews a \$200 Liz Claiborne jacket sewn in El Salvador is paid just 74 cents – less than half of one per cent. In the US, the labour cost to sew a garment is typically 10 per cent of the retail price (Internet 19).



Workers in poor countries may have to work 12 hours a day, seven days a week with few protections for health and safety. In some countries, globalisation leads to the exploitation of child, and prison labour (Internet 3).

- Goods produced in developing countries under conditions highlighted above undermine those produced in the industrialised nations. The result has been a call for 'fair trade', as opposed to 'free trade'.
- Within richer countries, there is growing inequality as unfair competition from countries repressing workers' rights to organise pushes down the earnings of the less skilled sections of the workforce.
- It is believed and mentioned by Joseph Stiglitz (2003) that, the WTO is interested in defending intellectual property and investors' rights, but not those of workers.

2.7 EFFECT OF LIBERALISATION AND GLOBALISATION ON WAGES

International trade theories suggests that trade affects the prices of goods in both exporting and importing countries. Which in turn affects the wages (which is the price of labour) within countries by influencing the demand for labour. Changes in prices of goods due to competition from imports alters the profit prospects facing the firms. They in turn respond by shifting resources away from loss-making sectors towards industries in which profitability has gone up. Trade flows, thus, bring about shifts in the demand for labour, as additional workers are required in newly profitable sectors and fewer in loss-making sectors. If the supply of labour is fixed, changes in demand will bring about a rise in wages, given that workers will demand a premium for switching into more profitable industries.

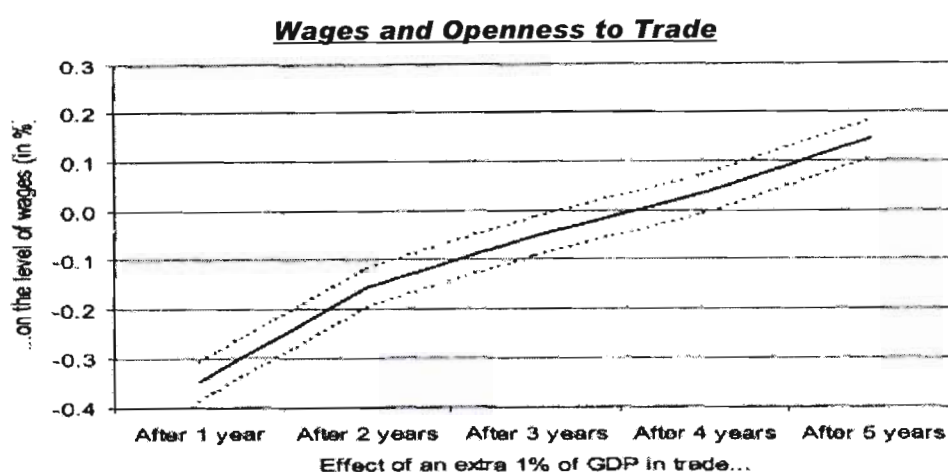


Figure 2.7: Wages and Openness to Trade

(Source: Martin Rama 2003)

International trade theories suggests that competition generated from imports lowers the price of products (such as apparel and footwear) made by unskilled labour relative to the price of products (such as computers and software) made by skilled labour, so that domestic firms shift toward production of skill-intensive goods. However, does the prices of goods in the developed countries exhibit this? If the answer is yes, then trade might have contributed to rising income inequality, but it must first be shown that changes in product prices are the result of trade rather than other purely domestic and internal factors such as, government regulations, labour laws and so on.

Post 1980 Globalisers

Post-1980 globalizers	
Argentina	Jordan
Bangladesh	Malaysia
Brazil	Mali
China	Mexico
Colombia	Nepal
Costa Rica	Nicaragua
Côte d'Ivoire	Paraguay
Dominican Republic	Philippines
Haiti	Rwanda
Hungary	Thailand
India	Uruguay
Jamaica	Zimbabwe

Table 2.4: Post 1980 Globalisers

(Source: Dollar and Kraay: 2000)

A great deal of research has been undertaken by WTO and the World Bank on this issue, and although the conclusions are not robust, there appears to be little evidence of larger price increases in skilled-labour-intensive products in advanced countries; if anything, price increases were larger in the unskilled-labour-intensive industries. Rapid technology change seems to have led to relative price declines in skill-intensive industries rather than the price decreases in unskilled-labour-intensive industries one would expect in the face of import competition from developing countries. In most cases, trade with developing countries have played only a small role, if any, in raising income inequality in the advanced economies.

Figure 2.7 helps in illustrating that the globalisers (table 2.4) have in fact been able to increase their wages with openness to trade and not the other way around. The graph shows that wages move in tandem with openness to trade but provides no evidence for whether the wages have increased for skilled or unskilled labour. Therefore, at this point it becomes important to discuss the effect of liberalisation on income distribution.

2.8 EFFECT OF LIBERALISATION ON INCOME DISTRIBUTION

Even though the growth benefits of trade are progressively getting more recognised, many analysts are reasonably concerned about the effects of trade liberalisation on income distribution and the issue of income inequality. Research undertaken by World Bank indicates (internet 3) that, however, the growth benefits of increased trade are, on average, widely shared no evidence has been found of a systematic tendency for inequality to increase due to increase in international trade (Dollar and Kraay: 2000). Figure 2.8 helps to illustrate this point by plotting changes in a measure of inequality, the Gini coefficient, which ranges from 0 to 100, with a higher coefficient indicating greater inequality on vertical axis and changes in trade volumes on the horizontal axis (Schiller 2000: 672). This figure shows a picture of about 100 developed and developing countries with regard to changes in trade and changes in inequality measures over periods of at least five years in order to examine the medium-to-long-run relationship between trade and inequality. Figure 2.8 exhibits a striking absence of any such relationship.

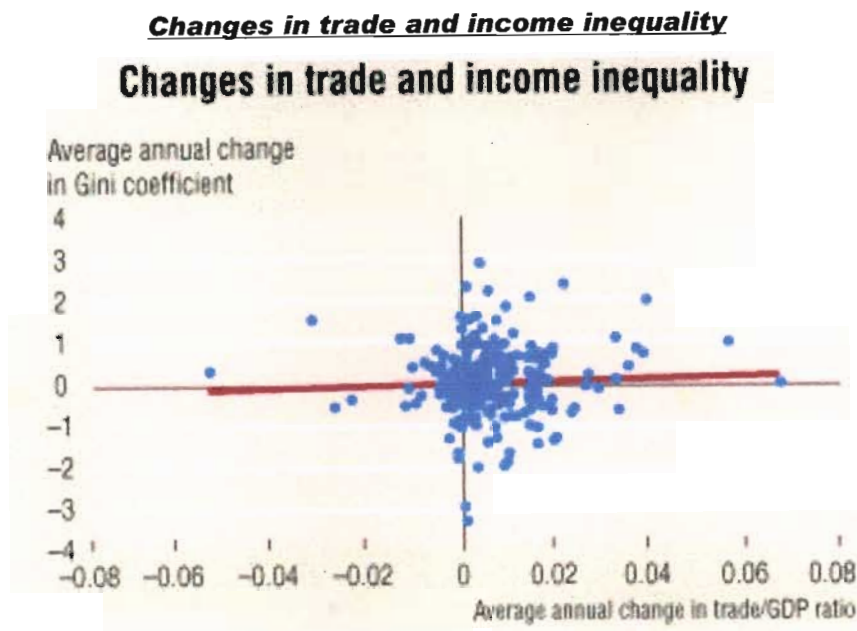


Figure 2.8: Changes in trade and income inequality

Source: Dollar and Kraay; 2003

The conclusion that emerges from this discussion is, that there is little evidence of a systematic trend for income inequality to either increase or decrease with increased international trade.

This evidence is also consistent with the experiences of the post-1980 globalisers (figure 2.4). While several of the globalisers have experienced increases in inequality most notably China, where the Gini coefficient increased from around 32 in the early 1980s to 40 in the mid-1990s, several others have seen decreases for example, Malaysia, where the Gini coefficient fell from 51 to 48 during the same period. In many countries, large shifts in income distribution can arguably be linked to influences beyond international trade (Internet 4). For example, in China, domestic liberalisation, restrictions on internal migration, and agricultural policies have played a much larger role than increases in international trade (Mathew and Swagel: 1997).

2.9 EFFECT OF LIBERALISATION AND GLOBALISATION ON POVERTY

Increases in growth and little systematic change in inequality among the globalisers have significantly boosted efforts to reduce poverty. For example, "In Malaysia, the average income of the poorest fifth of the

population grew at a robust 5.4 percent annually. Even in China, where inequality did increase sharply and the income growth rate of the poorest fifth lagged behind average income growth, incomes of the poorest fifth still grew at 3.8 percent annually” (Dollar and Kraay: 2000). The fraction of the population of these countries living below the \$1 a day poverty line fell sharply between the 1980s and the 1990s: from 43 percent to 36 percent in Bangladesh, from 20 percent to 15 percent in China and from 13 percent to 10 percent in Costa Rica, (Martin Rama: 2003).

2.10 GLOBALISATION AND GAP BETWEEN THE RICH AND THE POOR COUNTRIES

It has already been established that the income gap within countries is likely to decrease with the increase in trade. What about the gap between the rich and the poor countries? Is it widening due to globalisation? Are the rich countries leaving the poor countries behind in this race towards globalisation? Evidence on the growth performance of the globalisers relative to the rich countries and the non-globalising developing countries provides mixed results. On one hand, the rapid growth of the globalisers relative to the rich countries indicates that the globalisers are narrowing the per capita income gap. Moreover, countries like China, India, Bangladesh and Malaysia were one of the poorest countries in the world a few decades ago but today they are growing at a much faster rate, which has been a force for narrowing worldwide inequality. At this point it will be useful to look at figure 2.9 indicating the gap within and between countries. The top panel of figure 2.9 provides a rough estimate of trends in worldwide inequality over the past forty years, using the mean log deviation measure of income gap.

The Globalisers and the Worldwide Inequality

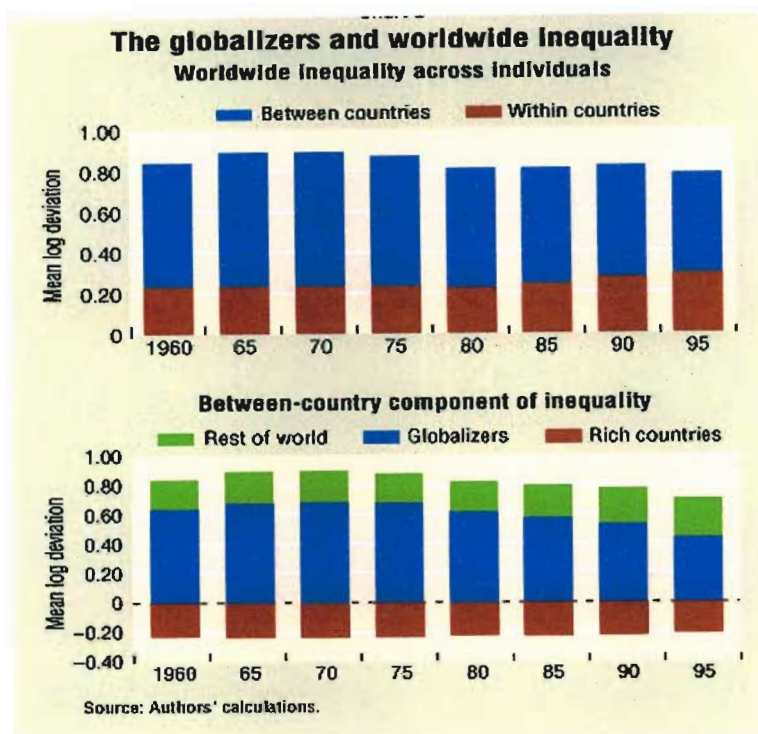


Figure 2.9: The Globalisers and the Worldwide Inequality

Source: Dollar and Kraay: 2000

Figure 2.9 illustrates that worldwide interpersonal inequality has been quite stable over the past forty years, showing at most a weak downward trend, which according to Dollar and Kraay (2000) and Martin Rama (2003), is not of any statistical significance, given the immense difficulties of measurement inherent in such calculations. More relevant is the effect of the rapid growth of the post-1980 globalisers on this inequality measure. To show this, the top panel of figure 2.9 first divides worldwide inequality into inequality among countries and inequality within countries. Consistent with the findings of studies undertaken by World Bank, most worldwide interpersonal income gap can be attributed to the large differences in the purchasing power and inequalities in income between countries, rather than to inequities in the distribution of income within countries. Since many of the globalisers were initially poor, their rapid growth over the past twenty years has contributed to reducing income inequality between countries.

Other studies undertaken by Surjit Bhalla (2003), however, indicates that inequality trends are in line with the “fears of anti-globalisation protesters”.

Share of Income and Population across Global Regions

Region	Share of World Population				Share of World Income			
	1950	1960	1980	2000	1950	1960	1980	2000
China and India	41.1	36.5	37.7	37.6	8.4	7.9	6.5	16.8
Sub-Saharan Africa	6.6	7.4	8.6	10.9	3.2	3.2	3.0	2.5
Middle East & North Africa	3.8	4.4	5.1	6.2	3.0	3.5	5.1	4.7
Latin America	6.2	7.2	8.2	8.5	7.7	7.9	9.9	8.4
Eastern Europe	10.2	10.4	8.7	6.8	11.2	11.3	12.6	6.1
Other developing countries	31	35	39.2	43.7	20.4	21.4	26.0	25.6
Industrialised world	20.2	20.8	17.0	14.0	62.5	61.9	57.2	52.4

Table 2.5: Share of Income and Population across Global Regions
(Source: Surjit Bhalla 2003)

Table 2.5 suggests that there is in fact large contemporary correlation between globalisation and worsening country and inter country inequality. According to Kuznets curve (Surjit Bhalla: 2003), “this increase in inequality was entirely to be expected; that is, things get worse on the inequality front, with growth, before things get better”.

Some studies conclude that globalisation has not widened the gap between the rich and the poor countries, contrary to our belief it has helped in curbing that gap and others indicate entirely the opposite (as can be seen in table 2.5 and fig 2.9). However, important fact to take into account is that there are other factors attributable to widening gap, such as measures to protect domestic industry by putting in place barriers and internal regulations.

2.11 GLOBALISATION AND UNEMPLOYMENT

Even though globalisation prompts both job destruction and job creation, the timing of these two developments might not be linked (Martin Rama: 2003). During periods of trade liberalisation, and more generally of economic

restructuring, job destruction rates can be expected to proceed at a much faster pace than job creation. Globalisation could therefore be associated with higher unemployment rates. Furthermore, integration with international markets could intensify macroeconomic fluctuations. Instability of the terms of trade and speculative capital flows could lead to booms and busts, increasing the variability of unemployment rates. Even if the average unemployment rate remained unchanged over the business cycle, job turnover possibly will swell, and with it the feeling of economic uncertainty (Internet19). Before addressing the impact of globalisation on unemployment, it is important to highlight that the very concept of unemployment is somewhat ambiguous in many developing countries. According to the definition given in Schiller (2000), unemployment can be attributable to seasonal changes (seasonal unemployment), movements in between jobs (frictional unemployment), mismatch of job seekers and the requirements of available jobs (structural unemployment) or lack of job vacancies (cyclical unemployment). These definitions are problematic in countries where the salaried relationship is not prevalent, and employment in household enterprises and farms is common.

The countries that are getting poorer are those that are not open to world trade, notably many nations in Africa. China's opening to world trade has brought about growth in income from \$1460 a head in 1980 to \$4120 by 1999 (Internet 3). In 1980, American's earned 12.5 times as much as the Chinese, per capita (Internet 4). By 1999, they were only earning 7.4 times as much. The gap between rich and poor is also shrinking with most nations in Asia and Latin America. People tend to believe that exports create jobs whereas imports are a source of job destruction and therefore it makes sense to put in place barriers against imports. This so called 'philosophy' led to the Great Depression in 1930, because so many countries adopted import substitution policies that global trade fell with catastrophic consequences. Most exports also use some imports. To take a simple example, a country might export packaged sugar, but import the packets. Lowering import barriers makes export industries even more efficient and competitive in world markets. Countries that lower trade barriers concentrate

their national energies in industries they are good at, where they have an international advantage. Import barriers encourage countries to focus efforts in industries where they do not have any advantage, which leads to inefficient use of resources. There is evidence that developing countries that have adopted import substitution policies have experienced slower growth in incomes compared to the countries that were more outward oriented.

Figure 2.10 reports the unemployment rates of four successful globalisers, Poland, Mauritius, Chile and Sri Lanka during the first 20 years of their reform process. Unsurprisingly, economic policies were not always perfect in all of them. Chile had a failed experience of exchange rate based stabilisation, leading to a massive financial crisis. Mauritius was dependent on its export-processing zone, which is not, theoretically, the most efficient way to globalise. Poland and Sri Lanka maintained their protection of bloated and inefficient industries and state-owned enterprises. Still, on average the economic management of these countries is probably close to the best that can realistically be expected (Dollar and Kraay: 2000).

Unemployment Rates in Successful Globalisers

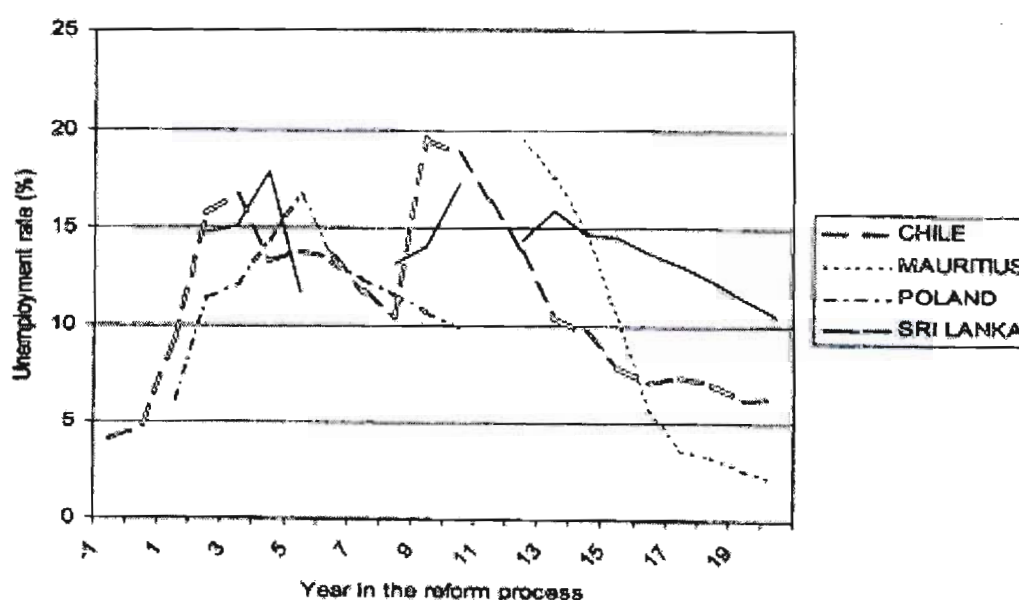


Figure 2.10: Unemployment Rates in Successful Globalisers

(Source Martin Rama 2003)

All four successful globalisers have in common a long period of high rates of unemployment after the having launched their respective economic reforms.

In the long run, open economies do not appear to have higher unemployment rates, as suggested by figure 2.10. If anything, their unemployment rates are lower. However, to the extent that country and period-specific biases are independent from the degree of openness of the economy, the pattern described by the figure should be basically correct. This pattern is one of high dispersion of unemployment rates in more closed economies, and convergence towards a relatively narrow range in more open economies (Internet 19).

2.12 GLOBALISATION AND NATIONAL SOVEREIGNTY

Does globalisation shift economic power away from nation governments towards organisations like, the World Trade Organisation, European union, and the United Nations. It is argued that these organisations impose policies on democratically elected governments, thus undermining the sovereignty of those economies and limiting their ability to administer its own nation. According to Ralph Nader (Hill: 2003:28),

Under the new system, many decisions that affect billions of people are no longer made by local or national governments but instead, if challenged by any WTO member nation would be differed to a group of unselected bureaucrats sitting behind closed doors in Geneva (which is where the headquarters of the WTO are located). The bearcats can decide whether or not people in California can prevent the destruction of the vast virgin forests or determine if carcinogenic pesticides can be banned from their foods; or whether European countries have the right to ban dangerous biotech hormones in meat...at risk is the very basis of democracy and accountable decision-making.

However, Governments who choose not to globalise, are at liberty to choose that road, nevertheless there will be a cost. They may choose the degree of

their participation in this process. In spite of their integration into the global economy, governments are still at a liberty to put in place their own regulations within the wider areas of economic policy such as fiscal, monetary, budget and exchange rate policies.

The more a country is entwined into the world economy, the more it is affected by economic and political events around the world. Globalisation shifts the debate about market mechanisms and competition from the national to the international level.

National sovereignty per se is not threatened given that there is no coercion in this process. There may be some pooling or sharing of sovereignty. The degree of sovereignty-sharing involved is limited when compared to, say, the real pooling of sovereignty required of the 11 governments whose currencies now form part of the euro single currency zone. Membership of NATO involves a considerable curtailment of sovereignty, although in a well-defined and limited sector (Internet 2).

Governments can help retain local control over certain aspects of economic decision-making by empowering companies or regional authorities to run their affairs with more freedom and flexibility by applying the principle of subsidiarity. This allows decisions to be taken at the level where they will be most effective. Governments in this manner can limit their action by ensuring a level playing field for companies and acting against anti-competitive behaviour. Moreover, when governments are restricted because of international commitments, companies may be able to act more freely to develop their business and pursue their international goals.

As the scope for individual action becomes narrower, the need for efficient governments focusing on crucial tasks will increase. In such a case, sovereignty may lose in quantity but gain overall through the increased quality of the actions governments take.

2.13 CONCLUSION

The study undertaken by World Bank and WTO (Internet 3 and Internet 4) shows that the 24 developing countries who increased their integration into the world economy over two decades ending in the late 1990s achieved higher growth in incomes, longer life expectancy, higher GDP and better schooling. These countries enjoyed an average 5 percent growth rate in income per capita in the 1990s compared to 2 percent in the developed countries (Internet 4). Many of these countries such as China, India, Hungary and Mexico have adopted domestic policies and institutions that have enabled people to take advantage of global markets and thus, have sharply increased the share of trade in their GDP. These countries have been catching up with the more advanced countries and their annual growth rates increased from 1 percent in the 1960s to 5 percent in the 1990s (Internet 3). People in these integrating countries saw their wages rise, and the number of people in poverty declined.

The shrinking globe due to the integration of the world economy over the past two decades has been very impressive. The experiences of the post-1980 globalisers show that the process can be very favorable, acting as a catalyst for rising incomes, falling poverty and enabling some of the poorest countries in the world to catch up with richer countries. The real losers from globalisation are those developing countries that have not been able to seize the opportunities to participate in this process and have hidden themselves under the blanket of barriers. They live under the delusion that they are protecting their industry, their people, and their national sovereignty. However, development, prosperity and growth has been undermined not by globalisation per se but the way they have treated it, like a disease from which they have to protect themselves.

It has already been established that, 'Globalisation' is a process, which involves economic inter-dependence of countries worldwide removing all barriers for economic integration as if the whole world is a single village. Together with that concept it is also believed that, in this process, the rich nations with their superior financial power, control the scenario and the poor

developing nations are forced to integrate surrendering their economic independence knowing fully well what they are forced to accept is really prejudicial to their own interest. In this process the world financial institutions like the World Bank, IMF and now the WTO advance the interest of the rich countries alone. The Transnational Corporations (TNCs) and the Multinational Corporations (MNCs) are practically controlling the world assets.

As far as developing countries are concerned, there is enough evidence to suggest that openness is a necessary condition for rapid growth. However, one can surely find examples of countries opening up without experiencing growth. So where does the problem lie? Well, because openness by itself is not sufficient to promote growth, factors such as macroeconomic stability, policy credibility and other government policies must accompany it.

So where does this leave a nation? Should they liberalise or not? If yes what policy measures should they take up and where does this leave the domestic industries and what is their destiny? Can they possibly survive in this environment, which seems to be dominated by the MNCs and the TNCs? Lets try and analyse the scenario of 'globalisation' for the pharmaceutical industry in India, which might help in understanding the bigger picture that will emerge from it.

"Globalisation is much like fire. Fire itself is neither good nor bad. Used properly, it can cook food, sterilize equipment, form iron, and heat our homes. Used carelessly, fire can destroy lives, and towns"(Internet 19).

CHAPTER THREE: OVERVIEW OF THE INDIAN PHARMACEUTICAL INDUSTRY

3.1 INTRODUCTION

In the past, the Indian government established that a developing country like India possibly could not afford expensive patented drugs. Subsequently process patents came into existence but product patents failed to find a place in the Indian pharmaceutical industry. This inadvertently, gave rise to a robust domestic pharmaceutical industry and took joy out for multinational pharmaceutical companies. In view of the fact that India's legal system would not protect product patent infringements, MNC blockbuster drugs were never introduced in the market and the 'me too' versions flooded the market (Gina Singh: 2003). This was evident from the fall in market share of multinational companies from 70% in the 'era of product patents' (before 1970) to 24% in 1970 (Internet 10).

Now that the winds of liberalisation have caught India and being a signatory to the World Trade organization (WTO), it will recognise product patents from 2005 onwards (Gina Singh: 2003). That is why international industry has once again moved their attention towards India. However, due to the nature of the industry and progress of the domestic industry, it is believed that it will take the foreign players at least five years or so after 2005 before they start showing significant gains.

3.2 GLOBAL INDUSTRY STRUCTURE

At the global level, the pharmaceutical industry is divided into two segments, the innovative firm and the producer of generic drugs (refer to figure 3.1). The innovative or patent protected firms rely heavily on patent protection. These firms believe that patents protection is essential to carry out the



intensive research required to produce new products. Since, patents provide period of exclusivity, it leads to higher drug prices. As a result of this phenomenon, they are predominant in the developed countries. Alternatively, generic drugs are not subject to patent protection. They are only subject to government regulation. Generic firms emerge at the expiration of the patents. Since, technology is in public domain and anyone is free to capitalise on it and manufacture the product, usually generic drugs are available in the market at a lower price than the original patented version. Due to their nature, they are predominant in the developing countries such as India (figure 3.1).

Structure of the Pharmaceutical industry at a Global level

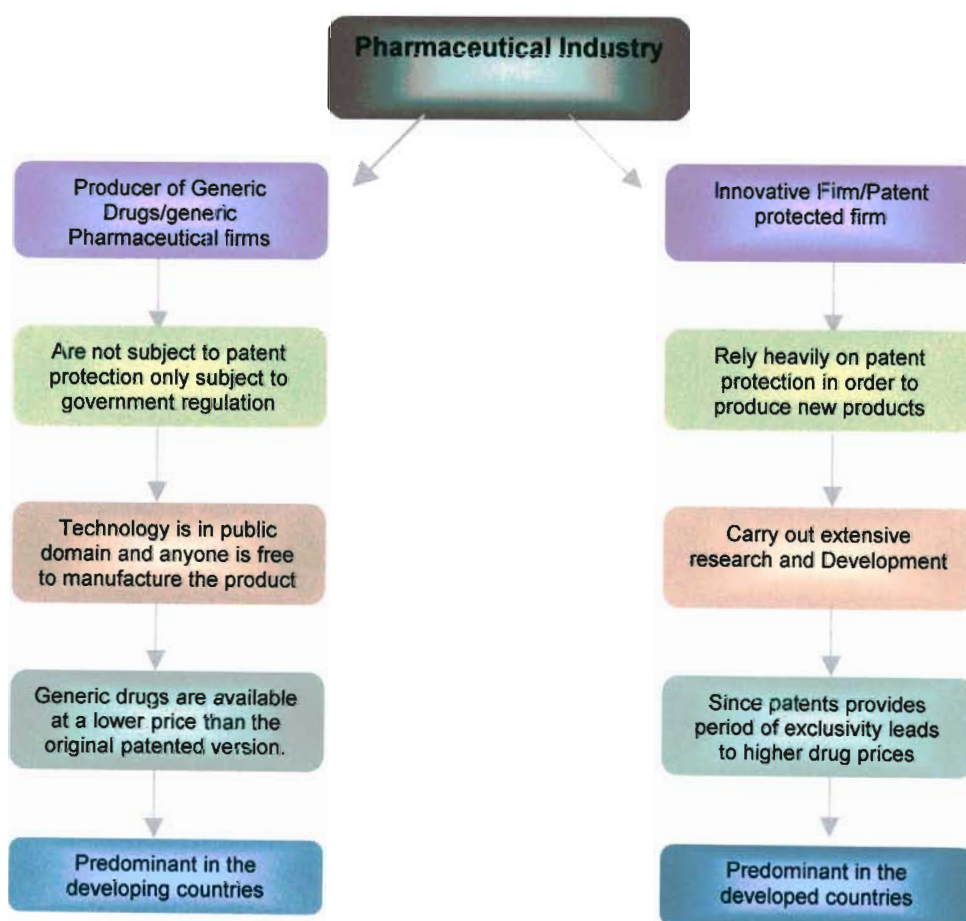


Figure 3.1: Structure of the pharmaceutical industry at a global level

(Source: Robert Tancer and Srinivas: 2000)

3.3 OVERVIEW OF THE INDIAN PHARMACEUTICAL INDUSTRY

The Indian pharmaceutical industry is a success story providing employment for millions and ensuring that essential drugs at affordable prices are available to the vast population of this sub-continent. However, the new 'trade' rules of the World Trade Organisation now pose a serious threat to the industry and to the millions who are dependent on it for their health and livelihood.

(Richard Gerster: Internet 5)

India has an extremely efficient pharmaceutical industry, which has been experiencing robust growth attributable to the virtual absence of patent protection of medical drugs (Gina Singh: 2003). This allows the firms to produce relatively cheaper drugs, for example, AIDS drugs are sold relatively cheaper than the original products from overseas. It is now believed and indicated by reports of the Chamber of Indian Industries (Internet 10), that the new policies of the World Trade Organisation (WTO) benefit the pharmaceutical multinationals from countries such as the USA, Great Britain and Switzerland, and threaten India's achievements (Internet 6).

Despite the winds of liberalisation and turbulence due to the new patent regime, Indian pharmaceutical industry has advanced perceptibly and is getting ready to withstand global competition. "The industry has expanded at annual rates ranging between 15% and 20% against global growth rates of 6%"(Internet 5).

India ranks 12th among the drug producing countries in value terms, and 5th in volume terms, with an 8% share of the global pharmaceutical production market and with a global market share of 1.2% (Internet 5). Today it is in the front rank of India's science-based industries with wide ranging capabilities in the complex field of drug manufacture and technology. A highly organised sector, the Indian Pharmaceutical Industry is estimated to be worth \$ 4.5 billion. It ranks very high compared to the other third world countries, in

terms of technology, quality and range of medicines manufactured. From simple headache pills to sophisticated antibiotics and complex cardiac compounds, almost every type of medicine is now made indigenously (Internet 9). The number of pharmaceutical companies in India multiplied dramatically from 3000 in 1977 to 24,000 in 1997 (Robert Tancer & Srinivas Josyula: 2000).

India is self-sufficient in all most all its formulation and bulk drug requirements, exporting around 33% of its annual production. India imposes strict control on drug prices in order to ensure availability of medicines at relatively low prices through the rigid provisions of the Drug Price Control Order (DPCO), which trims down the profitability of the industry. Currently, 74 drugs are under DPCO and 260 formulations that use these bulk ingredients (Internet 8).

“India's lack of product patent laws further hindered foreign direct investment and deterred the MNCs from investing in India” (Robert Tancer & Srinivas Josyula: 2000). Introduced in 1970, the Indian Patent Act recognised process, but not product patents making the market highly competitive with extremely low drug prices, at the same time discouraging Indian companies from developing new drugs. Post 2005, product patents will come into force (Gina Singh: 2003).

Research and development expenditure by Indian companies are small relative to the global scenario. Nevertheless, it has been growing at a CAGR (compounded annual growth rate) of 14% (Internet 6).

The Indian Pharmaceutical sector is highly fragmented with more than 20,000 registered units. It has expanded significantly in the last 20 years. The leading 250 pharmaceutical companies control 70% of the market with market leader holding nearly 7% of the market share (Internet 9). It is an extremely fragmented sector with severe price competition and government regulation of price.

The pharmaceutical industry in India meets around 70% of the country's demand for bulk drugs, drug intermediates, pharmaceutical formulations, chemicals, tablets, capsules, orals and injectibles. There are about 250 large units and about 8000 small-scale units, which form the essence of the Indian Pharmaceutical industry (including 5 Central Public Sector Units). These units produce the complete range of pharmaceutical formulations, i.e., medicines ready for consumption by patients and about 350 bulk drugs, i.e., chemicals having therapeutic value and used for production of the pharmaceutical formulations.

Indian Pharmaceutical Market: Market Share Based on Country of Origin

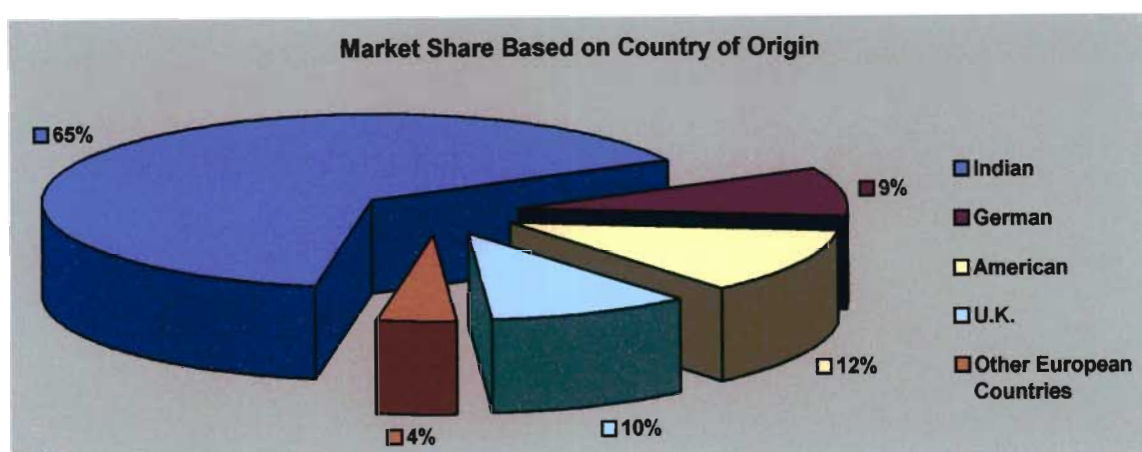


Figure 3.2: Indian Pharmaceutical Market: Market Share Based on Country of Origin

(Source: Robert Tancer & Shrinivas Josyula)

Following the de-licensing of the pharmaceutical industry, licensing for most of the drugs and pharmaceutical products has been done away with. Companies are at a liberty to produce any drug, approved by the Drug Control Authority. Technologically strong and totally self-sufficient, the pharmaceutical industry in India has maintained a low production cost, low R&D costs, innovative scientific manpower, strength of national laboratories and an increasing balance of trade. The Pharmaceutical Industry, which consists of affluent scientific talents and research capabilities, sustained by Intellectual Property Protection regime, is well set to take on the international market.

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3.3.1 INDUSTRY STRUCTURE

The industry is classified into the organised and unorganised sectors. There are around 250 manufacturing units in the organised sector, which account for 70% of total sales (Internet 9). The organised sector can be further classified, on the basis of management control, MNCs and Indian domestic companies. Indian firms producing 63% of the industry sales, multinational firms producing 35%, and public sector producing 2% of sales (see figure 3.3).

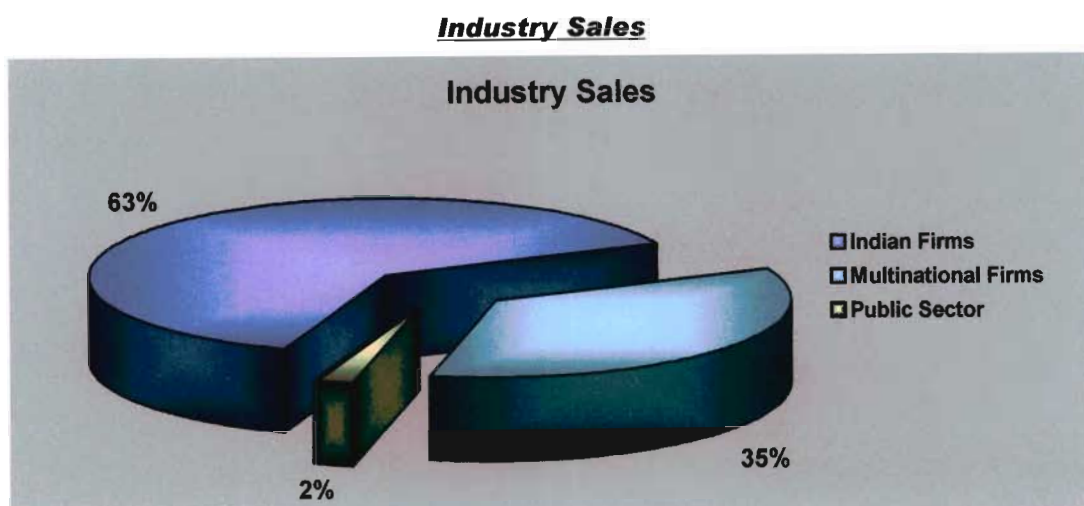


Figure 3.3: Industry Sales

(Source: Internet 9)

Foreign firms, especially U.S, U.K and German firms are more active in formulations or branded products in contrast to Indian firms, which concentrate more in bulk and generic drugs. Indian manufacturers market under their own brands and manufacture drugs in virtually every therapeutic category of the market. For example, in the anti-ulcerant therapeutic category Zinetac the Indian brand name for Zantac (Ranitidine, the molecular form) was manufactured by Glaxo (Internet 5). There were nine subsequent “me too’ drugs introduced by the Indian firms within a few years. As a result, the prices dropped by about 50% (table 3.1).

Price Comparison of certain Drugs in US & India

Brand Name	Generic Name	Dosage	US Price per Tablet (\$)	Indian Price per Tablet (\$)
Prilosec/Astra Merk	Omeprazole	20 mg	\$3.76	\$0.09
Prozac/Eli Lilly	Fluoxetine	10mg	\$2.28	\$0.63
Zocor/Merk	Simvastatin	10 mg	\$2.07	\$0.21
Zantac/Glaxo Wellcome	Ranitidine	150 ml	\$1.72	\$0.02

Table 3.1 Price Comparisons of certain Drugs in US & India

(Source: Robert Tancer & Srinivas Josyula: 2000)

3.3.1.1 PHARMACEUTICAL SALES AND DISTRIBUTION STRUCTURE

Figure 3.4 depicts the Indian pharmaceutical sales and distribution structure. Overall, pharmaceutical sales (fig 3.4) and marketing systems are amongst the most complex and challenged across industries. Among the most fragmented, expensive sales and marketing systems will pose a huge management challenge

Pharmaceutical Sales and Distribution Structure

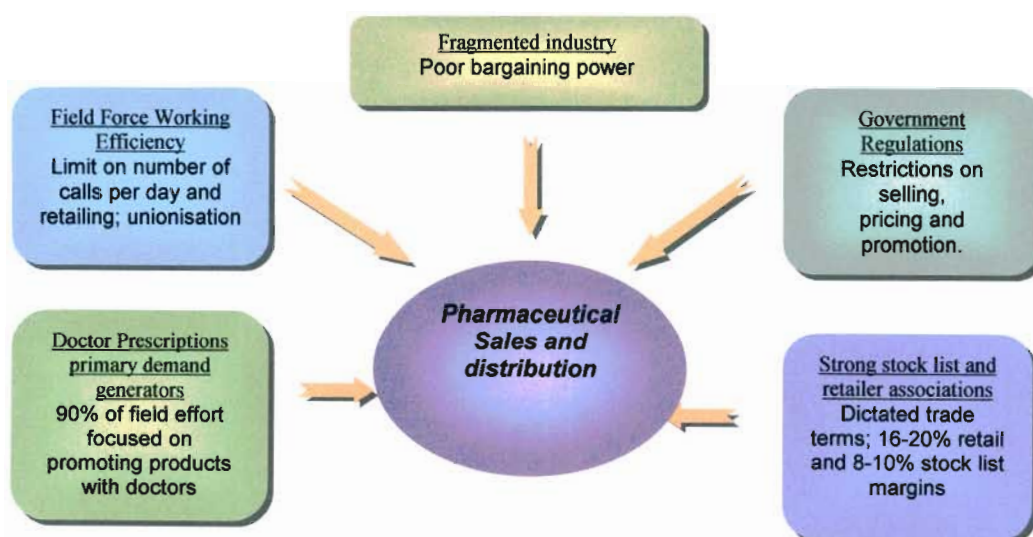


Figure 3.4: Pharmaceutical Sales and Distribution Structure

(Source: Confederation of Indian Industry: 2000)

3.3.1.2 MARKET SHARE

The share of MNCs, who once dominated the Indian pharmaceuticals market, has dropped from 75% in 1971 to 35% in 2000. Among the MNCs, American, German and UK firms have most of the market share (figure 3.2).

Table 3.2 depicts the market share of the top firms in India, both domestic and MNCs. The market share of the MNCs might increase since foreign investments are permitted up to 74% through the automatic approval route.

Indian Pharmaceutical Market: Market Share of Top Companies

Ranking	Company	Value in (00's Indian Rupees)	Market Share (%)
	Total Market	113018645	100
1	Glaxo Wellcome	7477107	6.62
2	Cipla	4783702	4.21
3	Ranbaxy	3985928	3.51
4	Hoechst-Roussel	3576615	3.17
5	Torrent Pharma.	2648258	2.34
6	Wockhardt-Merind	2642186	2.34
7	Alembic	2640003	2.34
8	Lupin Labs	2428777	2.33
9	Knoll Pharmaceuticals	2501779	2.21
10.	Pfizer	2495387	2.21
11.	Nicholas Piramal	2456205	2.17.
12	Zydus Cadila	2294898	2.03.
13	Novartis India Limited	2194014	1.94.
14	Cadila Pharma	2138017	1.89.
15	Wyeth Lederle Limited	2026379	1.79.
16	Alkem Laboratories	1980530	1.75
17	Smith Kline Beecham	1917397	1.70.
18	Aristo Pharma	1885731	1.67
19	Sun pharma	1821173	1.61.
20	Parke Davis	1717831	1.52
21	E Merck	1654896	1.46
22	Dr Reddy's Laboratory	1593352	1.41
23	Unichem Labs	1551258	1.37
24	Himalaya Drugs	1402590	1.24
25	German Remedies	1354380	1.20

Table 3.2: Indian Pharmaceutical Market: Market Share of Top Companies

Source: Robert Tancer and Srinivas

3.3.1.3 PRODUCTS OF THE INDUSTRY

The products of pharmaceutical industry can be broadly classified into bulk drugs and formulations. The Indian market has more than 10,000 drugs and around 2,400 licensed manufacturers. Bulk drugs constitute nearly 19.1% of the market and formulations account for the remaining 80.9% (Internet 5). The share of bulk drugs and formulations has remained relatively stable over the years.

Formulations prepared using a bulk drug under patent are called branded formulations. Formulations, which do not contain any patented bulk drug, are known as generics. In developed countries, where the patent structure is regulated, generics can be manufactured only after the expiry of a patent. However, in India, the patent system is yet to be implemented (Business world 2003).

The total size of the domestic formulations market is Rs 159.6 billion (approximately \$ 3.192 billion). The market is characterized by fragmentation with respect to therapeutic segments (figure 3.5). The antibiotics segment is the largest, accounting for around a 17% share of the domestic retail market. Vitamins and mineral supplements come next, with a domestic retail share of 7%. Currently, the top 18 therapeutic segments account for around 88% of the domestic retail (figure 3.5).

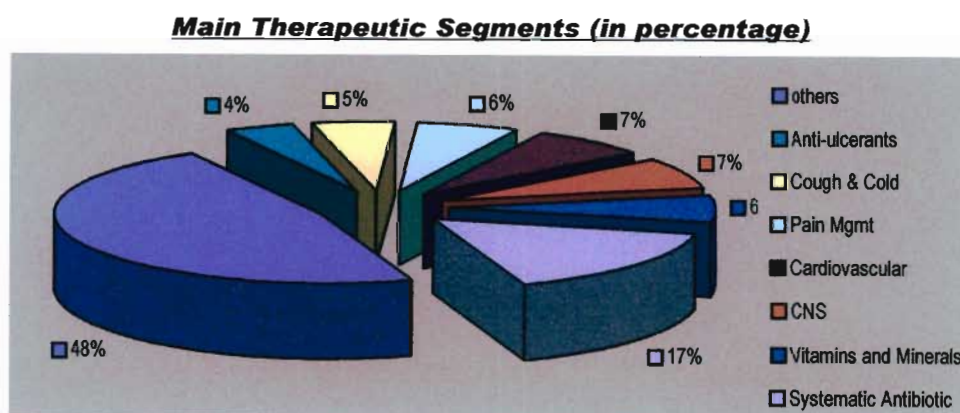


Figure 3.5: Main Therapeutic Segments (in percentage)

(Source: Internet 9)

With increased life expectancy and industrialisation, the industry is witnessing an increasing tilt towards high margins, lifestyle therapeutic segments. The large and traditional antibacterial plus systemic antibiotics segment of the market has grown by a mere 5.9% in 1999, compared to 15%, 27% and 20 % in 1996, 1997 and 1998 respectively (Internet 9).

3.3.2 PHARMACEUTICAL INDUSTRY PRIOR TO THE ADVENT OF INDIAN PATENT ACT

At the time of independence, the total drug production in India was around Rs 100 Million. During that time the MNCs with the help of the colonial Patent and Designs Act, 1911 exploited India's drug market. Engaging mainly in the import of drugs from their country of origin. Between 1947-57, 99% of the 1704 drugs and pharmaceutical patents in India were held by foreign MNCs. During that time the MNCs who were controlling 80% of the market did not come forward with financial investment and technological help to establish drug production centres in India. Drug prices in India were amongst the highest in the world. In 1954, the first public sector drug company Hindustan Antibiotic Ltd. (HAL) was established with the help of WHO and UNICEF (Internet 9). The Indian Drugs and Pharmaceutical Limited (IDPL) was established in 1961 with help from the Soviet Union (Internet 8). The establishment of these two public sector units and the coming into force of the Drug Policy of 1978 had been mainly responsible for the availability of drugs and medicines at relatively lower prices in India.

3.3.3 INDIAN PATENT ACT 1970

The Patent Bill was first introduced in Parliament in 1967, which came into force in 1972. The act does not allow product patents on medicines, agricultural products and atomic energy. This is considered to be the most suitable patent act for the developing world whereby process patents are allowed for 5-7 years. Owing to the patents act, today India is self-sufficient in the production of basic drugs covering various groups of drugs. Indian companies are now among the world leaders in the production of bulk drugs from basic stages. At present, drugs in India are very competitively priced compared to other countries. According to Confederation of Indian Industry

(Confederation of Indian Industry: 2000), India is identified to produce its own drug needs with its own technology and manpower. After 1970, Indian businessmen established many new pharmaceutical firms. At present, around 23 thousand small, big, and medium firms are producing drugs in India.

Attempts to alter the Indian Patent Act 1970 are a part of this globalisation programme. It is believed that the imposition of an unequal trade treaty like the World Trade Organisation (WTO) is a step towards globalisation in favour of the MNCs of rich and developed nations. With its help, the market of the developing nations is forced open for the developed countries. Most of the developing countries were forced to sign the WTO agreement without realising its implication: as a result, the developed countries are the gainers. Already, at the dictates of the IMF, World Bank and WTO, the Government of India is slackening all barriers in order to invite the MNCs in all industries including the pharmaceutical industry. Foreign Exchange Regulations Act (FERA) and Monopolies and Restrictive Trade Policies Act (MRTP) have been amended. Customs duties and corporate taxes have been lowered (Internet7). Relief, concessions and facilities have been extended to the MNCs as to Indian companies. All these, already, had an adverse impact on the indigenous Pharma industry. As per the requirement of WTO guidelines for the product patent regime, the availability of new drugs in India may be delayed depending on the desire of the patent holders. As per the guidelines, a product patent is granted 20 years and a process patent another 20 years (Internet 7). At present, newer drugs are made available in India within a 4-6 years period. Prices of drugs will go up by 5 to 10 times as it is evident from the prices of drugs in India and other countries like Pakistan, U.K. and U.S.A. where product patents are in force. In India, Ranitidine manufactured by Glaxo is put on the market at Rs. 7.20. In Pakistan and United States the same products by the same company is priced at Rs 65 and Rs 545 respectively (Internet 10). Similarly, the anti-viral drug Aciclovir costs Rs. 33.75 in India while the same drug is sold in Pakistan at Rs. 363 (Internet 5). There are many such examples. The drug prices in the U.S.A., U.K. and other developed countries have gone up so

high that the health care expenditure in those countries is predominantly funded by insurance companies at a very high premium. In those countries people cannot think of treatment without insurance coverage. Product patent regime will definitely hamper India's drugs exports, as countries will be forced to purchase from patent holders only (Gina Singh: 2003).

3.3.4 DILUTION OF DRUG POLICY AND DRUG PRICE INCREASE

Unlike consumer goods, drugs are not purchased by the preference of a person, but on a doctors' prescription. Prices of drugs are increasing by leaps and bounds along with the prices of other commodities in recent times. The drug manufacturers are flouting the Drug Price Control Order (DPCO). The DPCO was first introduced in 1970. In 1970 most of the drugs were under price control. In 1987 this was diluted and the number of drugs which were restricted declined to 347, in 1987 it was brought down to 163 drugs and in 1994 only 73 drugs were under DPCO (Internet 9). The industry wants the control to be abolished altogether. They have already demanded decontrol of 17 bulk drugs and further recommended full decontrol within 3 years time (Confederation of Indian Industry: 2000). Many developed countries in Europe and United States control drug prices directly. In the U.K., the government determines the profit level of drugs supplied by individual companies. A company has to reimburse excess profits to the Department of Health.

A recent study by the Confederation of Indian Industries (2001) shows that the prices of many life-saving bulk drugs have gone up precipitously. Drug policies in India are not decided by the need, the pattern of diseases or the purchasing capacity of the individuals, but by the profit motive of the industry and the Central Government is playing the role of a silent onlooker.

Given below (figure 3.6) are the prices of twelve essential drugs and the percentage increase in the prices after the liberal decontrol of DPCO.

**Percentage Increase in the Drug Prices over the
Period 1995-2000**

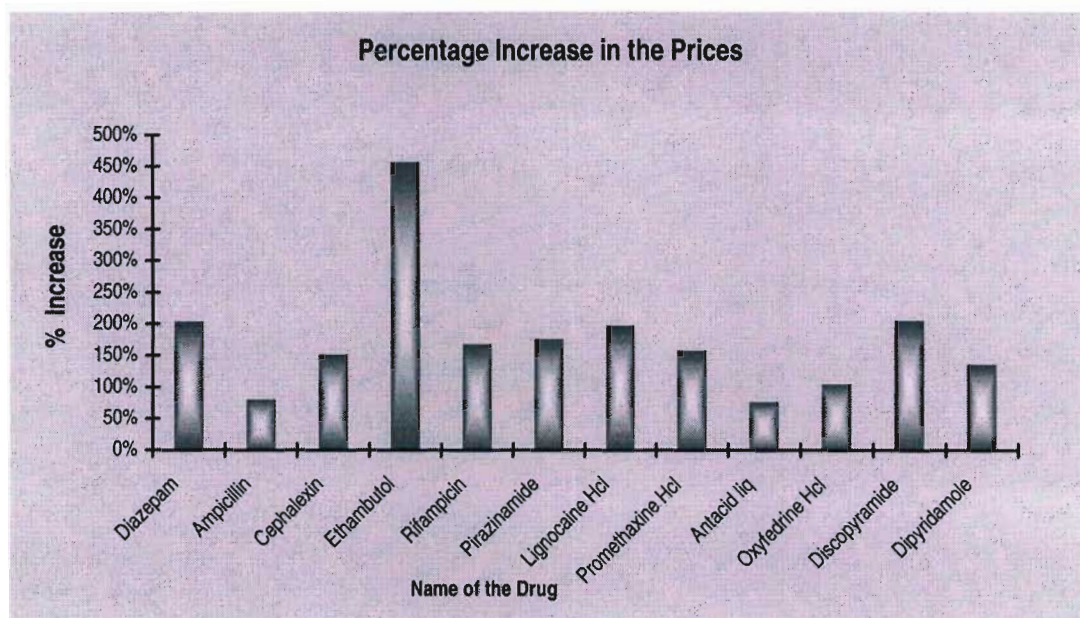


Figure 3.6: Percentage Increase in the Drug Prices over the Period 1995-2000

(Source: Internet 5)

Figure 3.6 is only indicative, hundreds of such examples can be given. Further, under the WTO agreement and the imposition of a products patent regime, the prices of all new drugs (patented) will go up without any control of domestic law. The DPCO will become further irrelevant and Indian people's accessibility to newer drugs will be restricted only to the rich of the country. Table 3.3 presents the high prices of some of the new drugs introduced in 1997 in the Indian market.

Prices of some of the New Drugs Introduced in 1999 in the Indian Market

Drug	Company	Strength	Pack	Price in Rs
Sporanox	Ethnor	100 mg	4 tablets	173.00
Lumicil	Novertis	250 mg	14 capsules	1247.00
Spariex	Sun Pharma	200 mg	6 tablets	154.00
Rispid	Panacea	50 ml	1 mg/ml capsule	141.00
Livial	Infar	2 G	28 tablets	1225.00
Pipracil	Cyanamid	2 G	Vial	215.78
Amate	Mesco Pharma	50 mg	12 tablets	180.00
Adnoject	Inca	3 mg	2 ml. vial	210.00
Roxisara	Sarabhai	300 mg	6 tablets	165.00
Celex	Glaxo	250 mg	4 tablets	140.00

Table 3.3: Prices of some of the new drugs introduced in 1999 in the Indian market
(Source: Internet 5, 11,12,13 and14)

3.3.5 TRADE

Domestic and international trade are both important indicators in providing a picture of the competitiveness of a particular industry. They not only provide a picture of the competitiveness but also tell a story with regards to the tariff and non-tariff barriers. The countries openness to trade indicates that there are fewer barriers in place. Similarly, with regards to the Indian pharmaceutical industry, it can be seen that over the past decade both exports and imports have gone up both in terms of world trade and domestic trade (refer to table 3.4 and 3.5 and figure 3.7).

World Trade in Pharmaceuticals 2000

World Trade in pharmaceuticals 2000			
	Exports	Imports	Balance
Germany	12,879	8,046	4,833
UK	12,101	8,183	3,918
USA	11,608	13,422	(1,814)
France	10,392	6,802	3,591
Switzerland	9,112	4,738	4,374
Italy	5,930	5,436	494
Netherlands	4,711	4,105	606
Sweden	4,255	1,418	2,837
Spain	1,782	3,520	(1,738)
India	1,588	824	764
Canada	1,323	3,801	(2,478)
Australia	1,134	2,361	(1,227)
Japan	903	1,834	(930)

Table 3.4: World Trade in Pharmaceuticals 2000

(Source: Internet 10 and 6)

3.3.5.1 DOMESTIC TRADE

More than 85% of the formulations produced within the country are sold in the domestic market. As far as formulations are concerned, India is largely self-sufficient. However, some life saving, new generation under-patent formulations continue to be imported, predominantly by MNCs, which are then marketed in India. Overall, the size of the domestic formulations market is around Rs 160 billion (approximately \$ 3.2 billion) and continues to increase at a growth rate of 10% per year (Internet 10).

3.3.5.2 EXPORTS AND IMPORTS

More than 60% of India's bulk drug production is exported. The remaining is sold locally to other formulators. India's pharmaceutical exports account for approximately Rs 87bn, of which formulations contribute nearly 55% and the rest of the 45%, comes from bulk drugs. In financial year 2000, exports grew by 21% (Internet 10).

Imports accounted for about Rs 20.3bn in the years 2000-2001. Imports have registered a CAGR of only 2% in the past 5 years. Import of bulk drugs have slowed down in the recent years (Internet 5).

During the years, 1997-98 exports accounted for Rs 49,780 million. From as little as Rs 460 million worth of Pharmaceuticals, Drugs and Fine Chemicals exports in 1980-81, it has climbed to about Rs 6,6310 millions in 1999-2000.

Growth Indicators

Growth Indicators

(Rs. Millions)

	1965-66	1999-00
Capital Investment	1400	2,5000
Production:		
Formulations	1500	15,9600
Bulk Drugs	180	3, 7770
Import	820	3,4410
Export	305	6,6310
R&D Expenditure	30	3200

Table 3.5: Growth Indicators
(Source: Internet 5 and 10)

Indian pharmaceutical exports have been on the rise continuously over the past few years (figure 3.7 and table 3.5). The low prices of drugs in India have enabled domestic producers to be cost effective and competitive, which has resulted in growth of export at a CAGR of 26.7% in the period between 1990-1991 and 1999-2000 (Internet 10).

Due to the fact that India is endowed with natural resources best suited for manufacturing drugs other related medication, MNCs have identified India

as a source base for their raw material requirements. The current export targets are China, USA, UK, Brazil, South East Asia and other developed countries.

Drugs and Pharmaceuticals Export

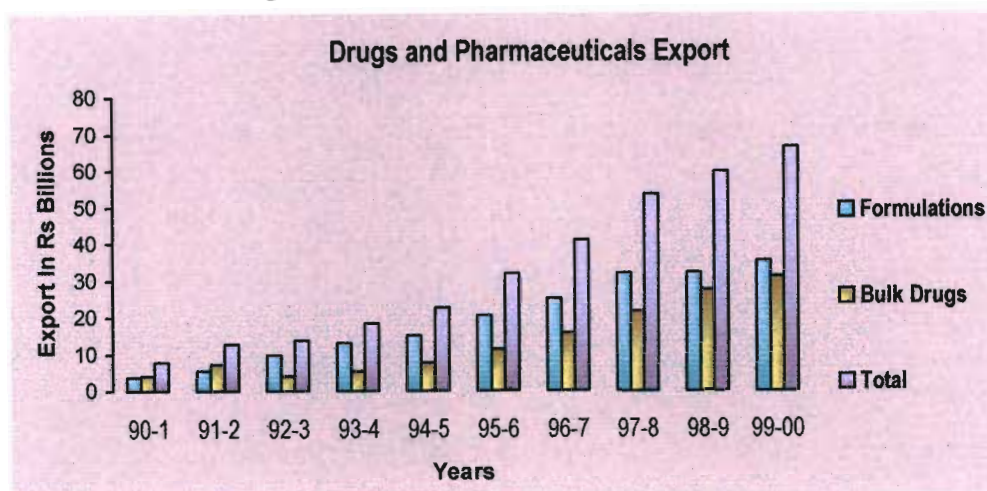


Figure 3.7: Drugs and Pharmaceutical Export

(Source: Internet 10)

3.4 THE CONSOLIDATION WAVE

With the advent of globalisation the industries are hit by consolidation wave. As already discussed in chapter two, with the globalisation of the world economy, companies are growing by joint ventures, mergers and acquisitions and other forms of strategic alliances to stay competitive, cut costs, share resources both human and capital, share technology, expertise and network. Similarly, the pharmaceuticals industry, both global and domestic, has been hit by the consolidation wave (table 3.6).

3.4.1 STRATEGIC ALLIANCES

International and national level mergers; acquisitions, takeovers and other forms of strategic alliances have now become a common phenomenon in the pharmaceutical industry. American Home Product merged with Cyanamid, SKB with Sterling, Rhone Poulenc took over Fashions, BSF with Boots, Glaxo with Burroughs Wellcome, Ciba Geigy with Sandoz, Warner Hindustan with Parke Davis, Hoechst with Rhone Poulenc etc. are some of the examples of big mergers and acquisitions (Internet 10 and 11). By this

form of strategic alliance, these companies became even larger compared to their competitors by further adding to their financial resources (See Table 3.6 for the top pharmaceuticals of the world).

Some top Pharma Company mergers in the world

Company	Merger	Year of merger	Value of merged company
Dow Chemicals	Marion Labs	1986	\$ 6.21 bn.
Bristol Myers	Squibb Corp	1989	12.09 bn.
Beecham group	Smith, Kline & French	1989	7.9 bn.
American Home Products	American Cynamide	1994	9.7 bn.
Hoffman La Roche	Syntex Lab.	1994	5.3 bn.
Eli Lilly	PCS Health System	1994	4 bn.
Sandoz	Gerber	1994	3.7 bn.
Smith Kline Beecham	Sterling	1994	2.9 bn.
Glaxo	Burroughs Wellcome	1995	14.2 bn.
Hoechst	MMD Roussel	1995	7.2 bn.
Pharmacia	Upjohn	1995	7 bn.
Rhone-Poulenc Rorers	Fison	1995	2.7 bn.
BASF	Boots	1995	1.3 bn.
Ciba Geigy	Sandoz	1996	30.1 bn.
Hoffman la Roche	Comage Ltd.	1997	11 bn.
Hoechst A.G.	Rhone Poulenc	1998	
Astra	Zeneca	1998	67 bn.

Table 3.6: Some top Pharma Company Mergers in the World
(Source: Internet 10 and 11)

3.4.2 BRAND ACQUISITION

There have been a large number of brand acquisitions in the Indian pharmaceutical sector. Ranbaxy, which focused largely on anti-infectives acquired brands from Gulfic, Crosslands, and Vorin Labs, which provided them presence in dermatology, cardiology, CNS to name a few. In 1999, Dr Reddy's acquired five brands from Dolphin Laboratories and the same year Nicholas Piramal Acquired two brands, Omnatax and Haemacell from Hoechst (Internet 9, 10, 11). This trend is likely to continue with larger companies continuing to look for acquisitions from smaller players.

3.5 RESEARCH AND DEVELOPMENT

Research and development is the backbone of the pharmaceutical industry. In India, despite the large base of scientific manpower, investment in research and development as a whole has been low, at around 2% of the turnover, whereas worldwide, 15-20 percent of the total turnover is invested in research and development (Internet 10).

In consequence of the Indian patent law introduced in 1970, which recognized only process patents, India's R&D forte has been in synthetic organic chemistry and process development. A few new drugs, using conventional screening techniques, have emerged from Indian R&D, but none have been as successful as they would have liked to be without product patents, domestic firms have grown their indigenous market through creation of different processes. The low investment in R&D is attributed to small size of the companies and low levels of profitability.

Trends in R&D expenditure In India (in Rs ten million)

Year	R&D expenditure
1981-82	29.3
1983-84	40
1995-96	160
1996-97	185
1997-98	220
1998-99	260
1999-2000	320
As a percentage of sales	2%

Table 3.7: Trends in R&D expenditure (in Rs '00 million)

(Source; Internet 5)

The scenario is however, changing. Pharmaceutical companies such as Ranbaxy, Cipla, Cadila and Wockhardt now spend between 4%-7% (table 3.8) of their turnover on research and development.

<u>Percentage of turnover invested in R&D during 1998-2000</u>	
Pharma Companies	Percentage of turnover invested in R&D
Ranbaxy	6%
Cipla	4%
Cadila	4.45%
Panacea Biotec	5%
Zydus Cadila	7%
Dr Reddy's Laboratories Limited	5%
Unichemindia	4%
Wockhardt Limited	8%
RPG life Sciences Limited	4%

Table 3.8: Percentage of turnover invested in R&D during 1998-2000

(Source: Internet 11-18)

In the last one decade, the focus of R&D has shifted from process research to discovering new products, hence driving companies towards original research. A few domestic companies for instance, Dr Reddy's Laboratories (Internet 15) and Ranbaxy have already ventured into basic research (Internet 14).

Drug innovation is a drawn-out and expensive procedure. It takes about 10-12 years for a molecule to reach the market, from the time it is discovered. The whole process can cost up to \$200-500million. The success rate of drug innovation is around 0.1% and few drugs even recover average development costs. In India however, the cost of discovering a drug could be as low as Rs 1.4-2 billion (Internet 10). This provides great opportunity

and competitive strength for drug discovery within the country. India currently contributes to just 0.1% of the global new drug delivery market, currently worth \$24 billion. With the market expected to increase to \$74 billion, post-2005, the drug delivery market will offer immense scope for Indian pharma players (Confederation of Indian Industry: 2002).

Lack of knowledge of clinical trials procedures and high cost of overseas clinical trials result in Indian companies tying up with MNCs for carrying out clinical trials, pre and post clinical studies, under licensing arrangement/milestone payment. In this arrangement cost of clinical trials in developed countries is borne by the licensee. Dr Reddy's is the first Indian company to license its two anti-diabetic molecule to an MNC, Novo Nordisk for clinical trials (Internet 15).

Percentage of Drug Production and World Population in Some Countries

Country	% Of world drug production	% Of world population
USA	28.2%	4.7%
Germany	7.7%	1.5%
France	7.1%	1.1%
U.K.	3.4%	1.1%
Brazil	1.7%	2.8%
India	1.2%	16.1%

Table 3.9: Percentage of Drug Production and World Population in Some Countries

(Source: Internet 5 and Internet 10)

3.6 CONCLUSION

The focus of this chapter was to provide an overview of the Indian pharmaceutical industry both in terms of national and global scenario. Brief illustration of global industry and where Indian industry fits in was presented. Current situation and situation dating back to the 1970s was discussed with

regards to domestic trade, exports, imports and strategic alliances. The next chapter will focus on the analysis of some of the aspects discussed in this chapter, against the literature discussed in chapter 2.

CHAPTER FOUR: CASE ANALYSIS OF THE INDIAN PHARMACEUTICAL INDUSTRY

4.1 INTRODUCTION

The structural adjustment program introduced by the government of India at the behest of the IMF, World Bank and WTO created a serious impact on India's drug industry, health care system, the workers engaged in the industry and ultimately on the people of the country. These reform policies are mainly - the reduced role of the Government, cut in subsidy in the social sector, increase in administered prices, liberalisation of trade, providing incentives for foreign investment, privatisation of the public sector, equating foreign companies with Indian companies, de-regulating the labour market and so on. This is aimed at the withdrawal of the state intervention from the social and welfare sectors like health, education and public distribution.

4.2 IMPACT OF TRADE LIBERALISATION

With the advent of WTO and Uruguay Round of talks, the Indian pharmaceutical companies will have the right to patent products as well as processes. This in turn would give access to international technology, foreign investment, research and development and global marketing. However, most alarming results arising from 'trade liberalisation' or WTO agreement would be hike in drug prices and fierce competition from the multinational companies.

4.2.1 IMPACT OF LIBERALISATION ON DRUG COMPANIES

According to Indian Reserve Bank, liberalisation has made companies like Ranbaxy, Cipla and Zydus Cadila, more competitive and efficient (Internet 5). De-licensing means that the companies can now produce as much as they want and export freely. Thus removing major obstacle to growth. The indigenous companies can now invest overseas more freely and remit funds to foreign partners, enabling Indian business to grow internationally.



However, bureaucratic obstacles and mindsets remain. Indian corporate houses still lack the financial resources to compete with global giants. Rabbaxy for instance cannot compete with Glaxo. This has led to major mergers, acquisitions and other forms of strategic alliances with the foreign multinationals that have the much-needed financial resources. The government can help by providing research and development support.

4.2.1.1 IMPACT ON COMPETITION

An essential concern that emerges from the economic restructuring and the liberalisation of the pharmaceutical sector is increase in competition. The Indian Pharmaceutical firms faced a similar situation prior to 1970, that is, before the advent of Indian Patent Act 1970. However, the pharmaceutical sector was still in its infantile stages and, therefore was hit badly by foreign competition. As a result, most of the companies closed down or went into liquidation.

Even though, the Indian patent act of 1970 (which recognized process but not patents) made the market highly competitive by encouraging low drug prices and protecting the Indian industries from competition. Nevertheless, it discouraged Indian companies from developing new drugs.

However, at present, the scenario is different mainly due to the nature of Indian pharmaceutical sector, which is more developed in terms of expertise and infrastructure. Furthermore, has the ability to develop new drugs. It seems that competition will make the domestic firms more efficient, innovative, facilitate more efficient use of resources and improve the overall standard and quality. Eventually, this would benefit consumers in the form of better and more efficient health care system that will emerge from the competition.

4.2.1.2 STRATEGIC ALLIANCES

It was established in chapter three that the industry is witnessing a consolidation phase, with the companies increasingly looking to step up growth by mergers, joint ventures, acquiring companies or brands. As India

is slowly moving towards the WTO norms, the consolidation pharmaceutical companies will increasingly become similar to that of the global trend.

It has already been established in chapter two that, 'pressure on prices has made Multinational Companies (MNCs) to resort to mergers and acquisitions and other forms of strategic alliances in order to contain cost and enhance research and development'. Joint ventures and other forms of strategic alliances have occurred between Indian and foreign pharmaceutical firms to gain access to financial resources for co-marketing, gain access to international technology, brand building or sharing technology and to enter international markets.

A Conceptual Framework for Strategic Alliances with regards to the Pharmaceutical industry in India

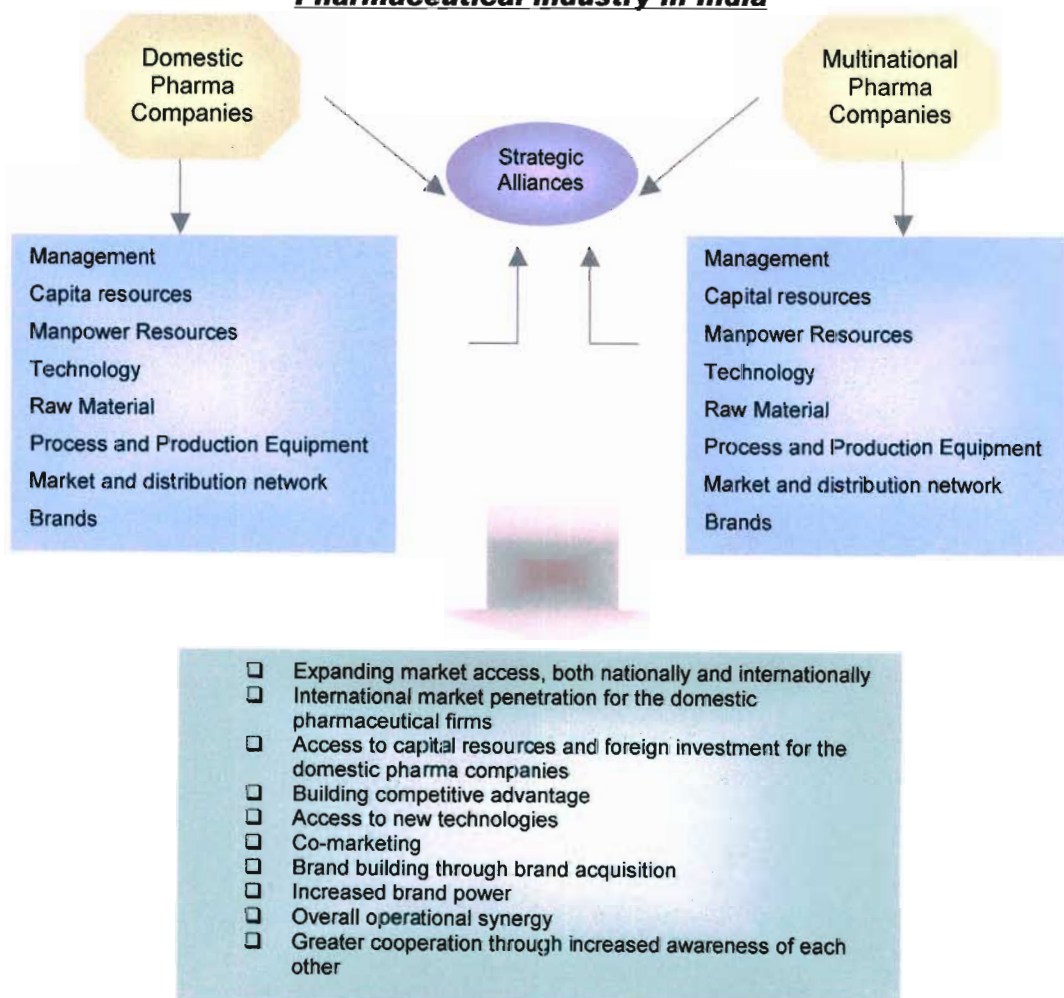


Figure 4.1: A conceptual framework for strategic Alliances

(Source: Sindhwani: 2003)

For example Zydus Cadila, with the acquisition of German Remedies Limited and Banyan Chemicals, Zydus Cadila's manufacturing premises now comprise 9 plants including its existing plants at Moraiya in Ahmedabad and Ankleshwar. The Zydus Byk Healthcare plant at Navi Mumbai also commenced commercial production in 2001-02, taking the group's tally to nine fully operational, state-of-the-art manufacturing plants spread over three states of Gujarat, Maharashtra and Goa (Internet 13). This further shows, how the pharmaceutical companies are forming strategic alliances in order to capitalise on each other strengths and hence leading to growth of the company. Figure 4.1 helps to illustrate how companies pool their resources, capital, human and capitalise on each other's strengths, helping each other penetrate markets, which are otherwise inaccessible. It is clear from the example of Zydus Cadila (refer to fig 4.1 & 4.2), how with the help of acquisitions it is now operation 9 state of the art plants and marketing its products efficiently.

Strategic Alliances: Zydus Cadila

Companies	Alliances For
Green Cross Vaccine Corporation, Korea	Vaccines
Bio Sidus, Argentina	Erythropoietin, GCSF
Shimizu, Japan	Diet Product
Guilin Pharma, China	Anti-malarial
Ethical Holdings, UK	Transdermal patches
Berna Biotech Ltd., Berne	Vaccine
Aventis Behring, USA	Blood products
Acta Services, Italy	Diagnostics

Table 4.1: Strategic Allinaces: Zydus Cadila

Source: www.zyduscadila.com

Co-Marketing: Zydus Cadila

Companies	Molecular Name	Alliances For
Ranbaxy	Ofloxacin	Zanocin-OD
E-Merck	Pioglitazone Clopidogrel	Precitrol Orawis
Nicholas Piramal	Atorvastatin Rofecoxib	Stator Rexib
Unichem	Pioglitazone Clopidogrel	G-Tase Clodrel
Sun Pharma	Desloratadine	Neoloridine

Table 4.2: Co-Marketing: Zydus Cadila

(Source: Internet 13)

In future, with the help of international financial companies, the MNCs will capture and take control of Indian companies to control the Indian market. To match the situation created by international mergers and takeovers, Indian companies are adopting the same path. For example, Wockhardt took over Merind and Tata Pharma, Ranbaxy took over Croslands, Nicholas Piramal took over Roche, Boehringer, Sumitra Pharma. The inevitable results are job loss of workers. Because of overlapping of jobs large numbers of workers are declared surplus and thus retrenched. After merger Glaxo-Wellcome and Ciba-Sandoz announced a reduction of 15 thousand and 10 thousand of their work force respectively worldwide. Upjohn and Pharmacia decided to close 24 of their 57 plants in different countries after their merger (Internet 6).

Some countries are adopting the 'buy and grow' method (Internet 5). Which means taking over some popular brands and increasing business. SKB took over Crocin from Duphar, Ranbaxy took over 7 leading brands from Gufic, Dr. Reddy's Lab purchased 6 products of Dolphin and two each from Pfimex

and SOL Pharma. Sun pharma purchased all leading brands of NATCO, after selling the popular brands the companies are becoming unprofitable and closing their shutters throwing the workers on the street.

The government's policy to grant permission to the MNCs to enter the Indian market with 100% equity as a consequence of the WTO and Uruguay round of talks, have threatened the existing companies and their employees. Through the process of mergers, acquisitions and takeovers MNCs will gradually perpetuate their grip on the Indian industry by the creation of a limited number of mega companies having monopoly control and domination worldwide. In the absence of competition, people will have to pay any price as it happens in the sellers market.

Over the last 6 years, the market share of the top 20 players has increased to 50% from 35% in the Indian industry. To leverage costs and increase market presence both in India and globally, the coming year will see the takeover of medium and small players by the large players. Domestic players and multinationals would enter into alliances of all conceivable kinds like technical, marketing and contract research and manufacturing, licensing arrangements.

4.2.2 ECONOMIC DEVELOPMENT: R&D, INTERNATIONAL TECHNOLOGY AND FOREIGN INVESTMENT

In a recent World Bank report, 81% of US research-based pharmaceutical companies complained, 'intellectual property protection is too weak in India to permit licensing of their newest or most effective technology and zero percent would invest in research and development' (Internet 3). Therefore, strengthened patent protection is expected to encourage foreign direct investment in India. The study stresses that an environment hospitable to foreign innovative technology sets in motion a range of other dynamics such as licensing, co-marketing and joint ventures, generating multiple effects that befits local drug manufacturers which could prove very helpful for further development and growth of pharmaceutical industry. For example, in Malaysia, the level of foreign direct investment increased significantly as a

consequence of TRIPS (Trade Related aspects of Intellectual Property Rights) agreement. Currently the foreign direct investment in Malaysia is 11 times that of India (Internet 3).

Deregulation, patent protection and inflow of foreign direct investment, could improve the quality of medical care in India, as the country progresses from a copying or a 'me too' culture, towards one that induces local innovations. However, the extent to which liberalisation and intellectual property regime will have a direct impact in stimulating research and development remains to be seen. Nevertheless, it is estimated to go up to 7-10% of the turnover or sales (Internet 5).

It is believed that profits generated from patent protection and international trade will be invested in research and development by indigenous firms, thereby stimulating innovation and competitiveness of the domestic industry.

In addition, greater inflow of foreign capital is essential for overall economic development of a country.

4.2.3 REDUCTION OF WORK FORCE

Many drugs manufactured in India have become unfeasible in the Indian market compared to the foreign drugs as a consequence of reduction of the trade barriers on foreign imports such as customs duties. As a result, factories are either being closed down altogether or downsizing leading to the retrenchment or throwing the workers out of employment.

Messrs. Boehringer Mannheim, and Parks Davis who were the lone producers of Chloramphenicol in India stopped their production, as its prices in the international market were cheaper than the cost of production in India. M/s. Sarabhai Chemicals closed their Vitamin 'C' plant for a similar reason. Like Chloramphenicol and vitamin 'C' many other drugs like, paracetamol, metronidazole, ampicillin, amoxycillin and so on manufactured overseas are available at a cheaper price in India due to the lowering of the customs duties.

In their attempt to shift the production to the third party manufacturing, Hindustan Ciba Geigy, Roche, Abbot, Boehringer Mannheim, Boots, Park Davis, Unichem etc. have closed their factories and offered a voluntary retiring scheme (VRS) to workers. Apart from these closures, Pfizer, Rhone Poulenc, Hoechst, Glaxo etc. have reduced their work force. These companies are manufacturing their products with the help of loan licenses. Some of the companies have opened new smaller factories in new places and appointed workers with lower wages. More casual workers are being appointed. According to one source, “In the last two years in the Mumbai. Thane region of Maharashtra around 30,000 workers have lost their jobs in the pharmaceutical industry” (Internet 5).

Apart from the factory workers, the distribution workers are gradually being replaced by Cost & Freight agency system. In this system, the original company does not have any responsibility for the workers. They are employed by agencies with lower wages. In the last decade around 15 thousand distribution workers have lost their jobs in the pharmaceutical industry (Internet 7). Moreover, through the agency system, the government is deprived of sales tax as well.

In marketing also, the field workers or the sales promotion employees are facing tremendous attacks in the name of franchise, co-marketing, appointment of communicators etc. many permanent sales promotion employees are losing their jobs. Many others are appointed in the name of so-called executives to remove them from the fold of the union. More casual and contractual workers are being recruited.

Reduction of Workforce

Company	Year	Reduction of Workforce
Glaxo	1995	1564
Hoechst	1996	1049
Knoll Pharma	1995	600(all workers)
Smith Kline Beecham	1995	208
E. Merck	1995	194
Rhone Poulenc	1996	700
Hindusthan Ciba Geigy	1993	907
Duphar Interfran	1996	154
Bayer	1996	590
Abbott	1996	All workers
Roche	1996	320 (All workers)
Boehringer Mannheim	1997	335 (All workers)
Park Davis	1997	650 (All workers)
Pfizer	1995	215
Unichem	1997	All workers

Table 4.3: Reduction of Workforce
(Source Internet 5)

Thus, the total payment on voluntary retirement schemes by firms like Glaxo, Hoechst, Pfizer, Knoll Pharma, Rhone Poulenc, Park Davis, Smith Kline Beecham, Duphar, Bayer etc. are more than Rs. 2000 million in the last three financial years. The key aspect is that employment opportunities in these units have been reduced gradually.

4.2.4 PRICES AND IMPACT ON SOCIAL WELFARE

Is it true to say that economic development is being achieved at the expense of social welfare? On one hand deregulation and patent protection are considered necessary encouragements for research and development, inflow of foreign investment and overall economic development. At the same time their immediate impact could be social upheaval, resulting from increase in the price of essential drugs, and the lifting of price controls could have a more serious impact on drug consumers. Recent market trend seem

to confirm this, “the price of Alludrox (an ant-acid) and Lanoxin (a cardiovascular) drug rose by 114% and 105% respectively after the new drug policy was implemented” (Internet 6).

Poverty is widespread in India, according to Uma Kapila (2001), 15% of the population is living below the poverty line, and around 20-30% live on or slightly above the poverty line, which means that if drug prices swell to about 20%, then 40-50% of the Indian population will no longer be able to afford proper medication and health care for themselves. Is this what was intended by WTO agreement and Uruguay round of talks or the so-called ‘globalisation’? Well, the government will have to step in and put in place policies for redistribution of this income generated in the economy, to provide medical aid to people who no longer will be able to afford it once the prices go up.

The international trade theories suggested that prices fall as a result of free trade. However, in the case of Indian pharmaceutical industry the opposite seems to hold that is higher drug prices after adhering to WTO and Uruguay Round of trade negotiations. Well in that case, what will happens to the vision of former Prime Minister Indira Gandhi of providing health care to every citizen of the country at affordable prices and that ‘there will be no profiteering from life and death’? It is believed that costs of medicines will swell as a result of royalty payments and increased price for products manufactured under license. Therefore, there is a implication for drug prices going up due to patent protection as a consequence of WTO.

Looking at it from short-term point of view, yes some prices will go up but not all, some in fact would go down. As we established in chapter 2 that market forces, not intellectual property and trade barriers, drives prices. Therefore, to combat market denomination, higher prices and monopolistic trends, government would have to step in with reforms such as price controls and mechanisms for fair redistribution of wealth benefiting all. It was established in chapter two that in order to go the global route and be successful in achieving overall growth, it is important for the government to assume its role where needed, leaving rest to the market forces to correct

itself. If prices go up in the future, the DPCO can regulate them to create equilibrium. Moreover, market forces don't permit profiteering for too long. Sooner or later, a cheaper competitor will break the monopoly. It is a myopic view that multinationals will dominate the industry, as players are emerging at all levels.

Another aspect of welfare is that competition generated by the MNCs will improve the standard of health care system in India, making it better and more efficient benefiting all.

4.3 IMPACT ON PUBLIC SECTOR DRUG COMPANIES

With the reduced role and function of the government under 'globalisation', the public sector drug companies are faced with serious problems including imminent closures. Public sector drug companies like Indian Drugs and Pharmaceuticals Ltd. (IDPL), Hindustan Antibiotics Ltd. (HAL), Bengal Chemicals and Pharmaceuticals Ltd. (BCPL), Bengal Immunity (BI) and Smith Stanistreet Pharmaceuticals Ltd. (SSPL) played an important role in the production of essential drugs at affordable prices. Under the globalisation process the role of the public sector has been reduced. Attempts have been made to either privatise or close them. The Penicillin Plant in HAL, the biggest in the country, has been handed over to private sector. Its Streptomycin plant also has been leased to a private company in order to manufacture other drugs. IDPL, which has the biggest pharmaceutical plant in Asia, has been shut down since 1996 due to the lack of financial assistance from the government. The public sector drug companies were supplying the raw materials to the small-scale sector companies. Currently, these firms are facing difficulties in procuring raw materials. Similar is the state of affairs of BCPL, B.I. and SSPL. These three units were taken over by the government after they were made unprofitable by the private owners. Proper utilisation of their capacity could not be made due to lack of will on the part of the government, mismanagement at the administrative level and high level corruption. It is not because of any inherent weakness but due to the lack of political will, deliberate efforts to

destroy them, corruption and mismanagement that these public sector units have been rendered commercially unviable.

Furthermore, the numbers of workers engaged in these units have been reduced drastically. When IDPL was established, it had more than 15,000 employees. At present, the number of employees is less than 7,000 (Internet 10).

With the pharmaceutical industry taking a leap towards biotechnology development worldwide, only the public sector drug companies, with the backing of the Central Government, could have faced the challenge effectively from the MNCs in the new situation.

4.4 EVALUATING INDIAN PHARMACEUTICAL INDUSTRY AGAINST PORTERS DIAMOND

With the use of the Porters Diamond it can be determined whether Indian pharmaceutical industry has the required attributes to withstand international competition to achieve international success.

According to Porter (Svend: 2001), four broad attributes of a nation shape the environment in which homegrown firms compete and these attributes promote or impede the creation of competitive advantage (see figure 4.2).

Determinant of National Competitive Advantage for the Indian Pharmaceutical Industry: Porter's Diamond

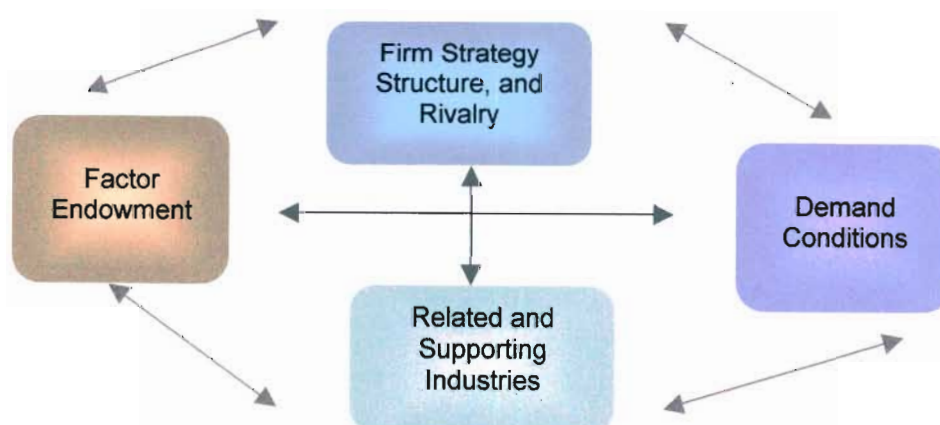


Figure 4.2: Determinant of National Competitive Advantage of Indian Pharmaceutical Industry: Porter's Diamond

(Source: Svend: 2001)

4.4.1 FACTOR ENDOWMENT

India has the natural resources and raw ingredients, which makes it self-sufficient in manufacturing most of the bulk drugs and formulations. Apart from the basic factors (such as natural resources, climate, location and demographics), Indian pharmaceutical sector is endowed with well-developed infrastructure, abundance in human intellectual capital and state of the art research facilities. These elements are imperative for India's success in the Pharma industry.

4.4.2 DEMAND CONDITIONS

It was stated by Porters (1995) as cited in Hill (2003) that home demand plays a very vital role in upgrading the competitive advantage of a particular industry because firms are more sensitive to the needs of their closest consumers specifically their domestic consumers. Therefore, the nature of local/ domestic demand is fundamental in terms of improving the quality and encouraging innovation. Demand conditions in India are as such that it motivates the manufacturers to introduce the latest drugs at the lowest possible prices. Which has led to 'me too' drugs and today the market is flooded with these kinds of drugs. It is not that the Indian pharmaceutical sector or industries don't have the technical know how, or lacks research capabilities, but the fact remains that due to governments past policies and the drug price authorities, the people are accustomed to lower drug prices. So, even though in India the demand for drugs and latest drugs is ever on the rise, this factor alone doesn't encourage the manufacturers to produce them, especially if they can easily copy them without having to invest in research and development. However, the tables will turn, 'post 2005 patents protection', the multinationals will enter the Indian market and the domestic firms will have to comply with the patents, and it seems that in that scenario the demand conditions will play a very significant role, encouraging innovation and quality. Thus, increasing the competitive advantage of India, which will allow Indian pharma firms to compete nationally and internationally.

4.4.3 RELATING AND SUPPORTING INDUSTRIES

As discussed in chapter 2, the third characteristic that provides national and international competitive advantage is the presence of supporting or related industry that is internationally competitive. Some of the relating and supporting industries for the pharmaceuticals is, hospitals with well-developed infrastructure, skilled and efficient doctors, widespread pharmacies (distribution channel), efficient and innovative chemical producing industries. These industries provide Indian pharmaceutical industry with a competitive advantage. These industries provide a basis for the success of pharmaceutical industry.

4.4.4 FIRM STRATEGY, STRUCTURE AND RIVALRY

According to Porters (Svend Hollensen: 2001), strategy, structure, and rivalry of firms within a country is the fourth broad attribute responsible for competitive advantage. In Indian pharmaceutical industry, vigorous rivalry within the industry especially in the past three decades has encouraged firms to look for ways to improve efficiency and quality, which makes them better international competitors. This is illustrated by the increase in international trade both in terms of exports and imports in the last couple of years; exports have gone from Rs 3,050 million to Rs 6,6310 million in 1965-66 and 1999-2000 respectively. On the other hand imports have gone up from Rs 8,200 million to Rs 3,4410 million in 1965-66 and 1999-2000 respectively (Internet 5).

4.5 CONCLUSION

At present, there is so much opportunity for the Indian pharmaceutical industry, such as tapping on the generics market internationally and new product innovation. This can provide Indian firms with a competitive advantage. Other upcoming areas in pharmaceutical research are genomics and biotechnology, where Indian firms can excel. In addition to this, free trade regime will bring about increased trade, inflow of foreign investment and MNCs. This will open new doors for the Indian firms in the form of strategic alliances. Thus providing the domestic firms with the much need financial and other resources to compete internationally.

Similarly, government policies and regulations can improve national advantage or can do the total opposite. On one hand deregulation and patent protection are considered necessary for encouraging research and development, inflow of foreign capital and overall economic development. Looking at it from the other side of the coin, they are considered detrimental with regards to social welfare leading to increase in prices of drugs and unemployment. In this situation it is imperative for the government to reform its policies and regulation in order to protect the social welfare. Changes in government policies and regulations, and recommendations relating to competition, strategic alliances and international competition will be discussed in the next chapter.

CHAPTER FIVE: RECOMMENDATIONS AND CONCLUSION

FOR THE INDIAN PHARMACEUTICAL INDUSTRY

5.1 INTRODUCTION

The liberalisation of the Indian economy is transforming the Indian businesses as they begin to emerge from domestic markets and prepare themselves for global competition. The Indian pharmaceutical industry is a prime example of an industry that is being forced to re-examine and re-evaluate its long-term strategy as it begins to open its borders to global trade.

The protectionist policies that India has implemented over the last three decades have had a significant impact on its pharmaceutical sector, which has resulted in the development of considerable expertise in reverse engineering of drugs. Consequently, the Indian pharmaceutical industry grew rapidly by developing inexpensive versions of several original drugs for the domestic market and eventually entered aggressively into the international market with generic drugs, once the patents expired.

The present government is bringing out a bill to change the Indian patent act of 1970 in order to abide by the WTO liberalisation policies. It is believed that the change in the act is not in the interest of the society at large, which will lead to price hike, job loss and worsen unemployment. According to the industry sources it is also assumed that the patents have become an object of businesses instead of development. Considering the wide gap of industrial and technological development between developed and developing countries, monopoly rights through the patent system should not be allowed to the rich nations. Today the transnational companies and the multinational companies of the rich nations are controlling 85% of the patents. According to the world development report (1997), "Globalisation is



hurting poor people, not just the poor countries, in this process poor countries and poor people will become increasingly marginalized”.

The question is why this pressure and hurry - the main aim is to impose policies of WTO and to change the Indian Patent Act since MNCs need more markets and are eyeing Asia which is the largest continent of the world where 60% of the world population lives but contributes only 20% of the world pharmaceuticals business. With a high rate of population growth it is expected that the need of drugs will tremendously increase in the third world countries including India in the next millennium. According to Confederation of Indian industries (2002), India contributes 16.1% of the world population, but it produces only 1.2% of the world drug production. Therefore the foreign firms are trying to have more control over the pharmaceutical markets of the developing nations. Developed countries are backing their big companies to capture markets in other countries even at the expense of the interest of their own people.

5.2 RECOMMENDATIONS

However, the pharmaceutical industry will have to reassess their strategies as they begin to step into a borderless world. At the same time the government will have to revise its regulations and policies in order to create a balance, so that everybody benefits in the long run. Therefore, the role of the government would be to ensure that the pendulum doesn't swing to the extreme right or extreme left but eventually, as the policies and regulations come into play, the pendulum come to its middle position. Together with the suggestions for the government, let's consider some recommendations for the Pharmaceutical industry to survive the winds of liberalisation and help in making India a global industrial base.

5.2.1 STRATEGIC ALLIANCES




In order to survive and create a place for itself in this era of globalisation, Indian indigenous companies will have to tie up with the western companies for global reach. The market is expected to become fiercely competitive in

another five years time. This is expected to result in a spate of consolidation moves in the form of mergers and acquisitions.

The Indian pharmaceutical companies should formulate strategic alliances in the area of contract manufacturing, co-marketing and licensing. Strategic alliances will assist companies to capitalise on each others strengths and help Indian firms to gain access to financial resources and international technology, for co-marketing and to enter international markets. Consecutively, to leverage costs and increase market presence both in India and globally, the coming years will see the takeover of medium and small players by the large players. Domestic and multinational companies would enter into alliances of all conceivable kinds like, technical, marketing, licensing arrangements, and contract research and manufacturing. Strategic alliances with the foreign players will also improve their distribution channels, which will help the indigenous firms to strengthen their sales, marketing and distribution network and penetrate international markets.

5.2.1.1 RESEARCH AND DEVELOPMENT

Research and development has always taken the back seat as far as Indian pharmaceutical companies are concerned. In an attempt to stay competitive in the future, they will have to refocus and invest in research and development. This will help the Indian industries in developing new molecules or strong reverse engineering skills to keep their product portfolio young. In order to enhance R&D activities by the Indian companies, the following steps should be undertaken:-

-  Increase cross border collaborative research
-  Increase funding for R&D
-  Create the necessary infrastructure for development of R&D work in the country

5.2.2 GENERIC MARKET

The global generic market presents substantial opportunities for Indian pharma companies. In most European countries and U.S, the generics sector is growing at a rapid pace as more and more branded products are coming off patent protection. Therefore India has an opportunity to tap on the global generic market and a well-developed domestic generic market to support that.

The global market is transforming itself. Drugs that accounted for sales of nearly \$90 billion in 1995 will come off patents between the years 2002 and 2005. With generics priced at 15-25% of their patented precursors, the generics market is believed to swell. The global market for generic drugs is estimated at around \$20 billion currently, and is expected to rise to \$ 30 billion by 2000-2005 (Internet 8).

This increase represents a potential gain for Indian pharmaceutical companies, as their generic products will now find increased opportunities in the global marketplace. According to a recent study by the Indian Drug Manufacturers Association, within the next 10 years, patents of most of the world's top 100 drugs will expire and India is well positioned to capture the opportunities presented by the generic market.

5.3 RECOMMENDATIONS FOR THE GOVERNMENT

Job loss, hike in prices and increasing unemployment are detrimental to the social welfare of the country. So what is the solution to curb all of this? Should the policy makers put in place barriers in order to discourage multinationals from entering the domestic market? End all ties with the WTO and consequently be left behind in the race of 'globalisation'? All these measures can be adopted, but whether they are suitable and at the same time feasible is the most important question. It is apparent, after discussions about trade liberalisation and its impact on an economy that the above measures, perhaps, would prove to be even more detrimental to the growth and economic development. Eventually this will lead to more job losses,

widespread unemployment, poverty and rise in inefficient and uncompetitive industries.

Does this mean that we are caught in a vicious circle? Well the answer is not really. Economies should realise two things, firstly, protectionist policy can actually impede the growth prospects and secondly, government should assume some responsibility to redistribute welfare and profit in order to benefit the society at large. One milestone has been reached, and that is doing away with the protectionist policies and liberalisation of the economy. However, the second milestone is as difficult as the first one, and that is government's role. The state should, therefore step in (not control) and put in place policies for redistribution of the income generated in the economy due to 'globalisation' to provide medical aid to people who no longer will be able to afford it once there is a hike in prices. In addition to this, the government will have to step in to create more jobs.

5.4 CONCLUSION

The liberalisation process and adherence to the WTO agreements will probably help India to develop policies that are focused on attracting capital from overseas, and making India a global industrial base. The inflows of foreign direct investment and technology transfers will create an environment for dynamic growth and increased competitiveness of Indian industries. India is slowly moving into global markets and competing with international quality standards and prices.

Issues such as poverty, unemployment and rising prices, seem a short run phenomenon, which are part and parcel of trade liberalisation and can be handled through sound government policies. If the government and the Indian industries work in unison, economic growth, prosperity, social welfare, poverty reduction, and all that globalisation promises, can be achieved and sustained over the long run.

Privatisation, along with trade liberalisation needs to be part of a more comprehensive program, which entails creating jobs in tandem with the

inevitable job destruction. Macroeconomic policies including low interest rates that help create jobs have to be put in place.