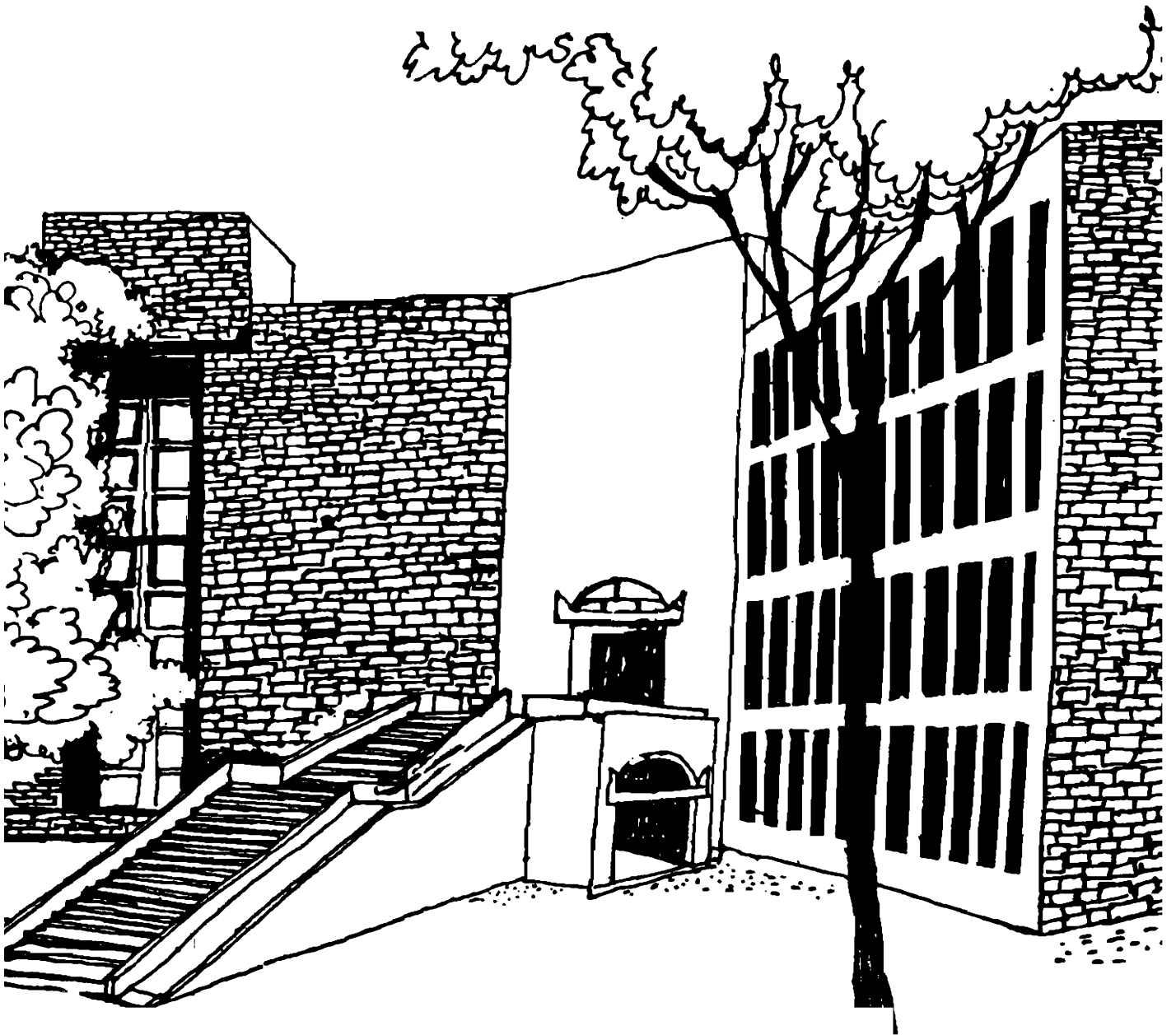




Working Paper



The Competitiveness Conundrum: Literature Review and Reflections

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The Competitiveness Conundrum: Literature Review and Reflections¹

Shekhar Chaudhuri and Sougata Ray

Abstract

The concept of competitiveness has been studied by researchers from a variety of perspectives using different methodologies. Though there is a large volume of literature on the subject, there seems to be a dearth of systematic reviews of the extant literature. This paper is an attempt in that direction. It presents a classificatory scheme using two dimensions - level of analysis (nation, industry and firm) and types of variables used to explain and measure competitiveness. The implicit and explicit research questions addressed and issues related to definition, measurement and sources of competitiveness at various levels are also discussed. It is suggested that given its complexity an eclectic approach combining different schools of thought and using multiple measurement schemes would be appropriate for doing research on competitiveness.

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The Competitiveness Conundrum: Literature
Review and Reflections
Shekhar Chaudhuri and Sougata Ray

1. Introduction

The subject of competition between nations has long been in the domain of economics. During the last decade or so the term "competitiveness" has gained prominence as a subject of study by management scholars too. The initial stimulus for research on competitiveness came during the eighties when the United States, for the first time since World War II, experienced sustained economic decline. Till the eighties most U.S. industries had operated in oligopolistic markets for a long time. The situation however, started changing in the late seventies and it became worse for them during the 80s and 90s owing greatly to the rise of Japan and other East Asian countries. As American firms started losing ground all over the world in strategically important industries such as automobile, shipbuilding, electronics and steel researchers began focusing attention on country and industry level competitiveness. Though a large number of research studies have been conducted on this subject by researchers worldwide, efforts to synthesize them have not been adequate.

Researchers have used a variety of perspectives and methodologies owing to their respective academic backgrounds in studying competitiveness. The diversity of perspectives has enriched this field of inquiry, but at the same time it has added to its complexity. Though Nelson (1992) provides a critical review of the extant literature on competitiveness, we feel at this juncture there is a great need for a more systematic and comprehensive review of the literature in order to provide a foundation for future theory development. This paper is an attempt in that direction.

It brings together relevant literature from various fields and disciplines that address the issue of competitiveness to develop a broader perspective for future research. It is divided into four broad sections. The first section provides a broad understanding of the concept of competitiveness; the second outlines the sources of controversy and disagreement among scholars; the third presents the viewpoints of different schools of thought; and finally the paper attempts to provide a synthesis of the existing literature. We must hasten to add, however, that it has some limitations. Given the enormous volume of literature on competitiveness, we do not claim this paper to be comprehensive. We have, however, tried to cover the major themes.

2. What Is Competitiveness?

According to Webster's English Dictionary, the word "competitiveness" originates from the Latin word "competer" which means 'involvement in a business rivalry for markets'. The term in business parlance, however, generally means 'the ability to compete'. The meanings of the term as used in academics and practice, however, are quite divergent.

The concept of competitiveness, even after many years of its existence has remained elusive. One of the main reasons for this is that writers on this subject have frequently avoided defining the term precisely in their discussions. They have invariably left it to be interpreted by readers. To discuss and understand any concept meaningfully it is extremely important to start with an explicit definition. Competitiveness is a complex, multidimensional, and relative concept. It is linked to a large number of interdependent variables thus making it difficult to sense and define it. Defining competitiveness is itself a research problem. So is measuring competitiveness, it being a relative concept without bearing any direct relationship with economic performance indicators (Jones and Teece, 1988a).

Academicians have dealt with this problem by coining two separate but related concepts, viz., comparative advantage and competitive advantage. Enderwick (1995) observes that comparative advantage corresponds to specific factors both for sourcing inputs and marketing outputs such as relative factor costs, availability, price and quality of products, and the size, growth and accessibility of markets. On the other hand competitive advantage corresponds to the notion of firm specific assets and describes the proprietary elements of the firm that determine what activities it should undertake and what distinguishes it from its competitors. Comparative and competitive advantage are not fully independent as comparative advantage of a country may contribute to the competitive advantage of firms originating or located in that country. The real difference between these two terms in existing literature seems to lie in their levels of analysis. While the literature on comparative advantage deals with the issue of competitiveness of nations and their industries writers on competitive advantage are more concerned with firm level issues.

3. Categorising the Literature

Competitiveness has been addressed by researchers and writers from three perspectives or levels - nation, industry and firm. The indicator and explanatory variables used in the analysis of

competitiveness across various levels are found to be of three types - variables pertaining to whole economy, sector or industry and individual firms. We have classified the extant literature on the basis of these two dimensions - level of analysis and variables used. Table 1 shows nine categories of literature classified on the basis of this framework. In the following section we discuss these categories.

Table 1 is about here

3.1 *Categories 1, 2 and 3*

Literature in categories 1, 2 and 3 have dealt with issues related to competitiveness of nations. Researchers in the first category have used economy wide indicators in defining competitiveness, and argued for recognition of various economic and other macro level factors such as exchange rate, savings rate, investment rate, national culture and government policy as the determinants of national competitiveness.

Literature in the second category considers variables pertaining to sectors of an economy such as manufacturing, agriculture, and service or a specific industry within the sector for the analysis. Researchers have used various types of productivity as the measure of competitiveness. Writers in this category argue that cluster of firms or industries located in nations that compete amongst themselves in international markets and not nations. Therefore they prefer industries as the unit of analysis for studying national level competitiveness. They also argue that competitiveness in a number of strategically important and sunrise industries such as steel, automobile, electronics and telecommunication determine national competitiveness.

The third category explores the firm level variables and treats firms as the unit of analysis in the analysis of national competitiveness. Authors in this category argue that it is the individual firm in a nation and not the nation or the industry located in that nation that compete in the global market. Researchers in this category have used single or composite measures of firm level performance variables such as price, quality, and brand image, and have argued that cumulation of competitiveness of firms of a country leads to national competitiveness.

3.2 Categories 4, 5 and 6

Though literature in category 4, 5, and 6 has dealt with competitiveness of sectors or industries, the variables used for analysis are different for each category. Literature in category 4 compares sectors or industries across different nations, explores the role of past and present national environments comprising basic and advanced factors, home demand, government policy, institutions, culture, etc., in shaping their competitiveness. Literature in category 5 focuses on international competitiveness of industries located in a country and comparisons are made across industries within the same nation or same industries across nations. Researchers have used price, world trade share, productivity, etc., as measures of competitiveness, and highlighted how structural characteristics of the domestic and global industry such as nature of competition, interfirm relationships, and collaboration among firms shape industry competitiveness.

In the literature belonging to category 6 firms in an industry have been considered as the unit of analysis and firm level variables are used for assessing the industry's global competitiveness. It has mainly used the firm level characteristics to explain competitiveness of the industry. This category of literature also provides historical accounts of firms in a particular industry, their capability development, management policies and practices such as relating to management of supply relationships and collaborative research and development in explaining the evolution of globally competitive industries in a nation.

3.3 Categories 7, 8 and 9

Literature in categories 7, 8 and 9 deals with the competitiveness of individual firms, mostly transnational firms. However, the national context of parent country of the firms under investigation gets predominance in the literature belonging to category 7. This category of literature while comparing national or transnational firms argues that the national environment shapes and determines the competitiveness of these firms and continues to play a dominant role even when they become transnational.

Characteristics of global industries and industry level factors in the parent country of subject firms are focussed upon in literature belonging to category 8. This category highlights structural characteristics of the domestic and global industry such as customer convergence, economies of scale, scope, learning, competitive and collaborative intensity, role of trade associations, supplier

and buyer relationships in the domestic market in discussing global competitiveness of subject firms.

Literature in category 9 while dealing with the competitiveness of individual firms focuses on variables internal to firms, their product and organizational characteristics, historical evolution, resource endowment, intraorganizational mechanisms, etc., to explain differences in competitiveness.

It should be noted, however, that some authors have addressed competitiveness at multiple levels simultaneously and used multiple units of analysis. These works have been included in more than one category of literature as can be seen in Table 2 where a categorization of some notable writings on competitiveness has been presented.

Table 2 is about here

4. Competitiveness : A National Perspective

Scholars belonging to category 1 have used various definitions of competitiveness. The following three alternative definitions of national competitiveness have been frequently used in literature (Jones and Teece, 1988a):

1. Competitiveness is the ability of an economy's GNP and GNP per capita to grow as fast as another major economy.
2. Competitiveness is the degree to which a nation, in a world of open markets, produces goods and services that meet the tests of the market place while simultaneously expanding GNP and GNP per capita at least as fast as any other major trading economy.
3. Competitiveness is the degree to which a nation can, under free and fair market conditions, produce goods and services that meet the tests of international markets while simultaneously maintaining or expanding the real income of its citizens.

The first definition has a big drawback as growth rate of an economy depends on its absolute size. Thus one may get a distorted picture of the growth rate if a large economy is compared with a smaller one. The last two definitions make the crucial assumption that the world economy operates on the free market principle, which is extremely doubtful as abundant evidences of nonmarket interferences are available (Amsden, 1989; Tyson, 1992). Competitiveness may

perhaps be better understood by viewing it as the combination of comparative advantage and market distortions (Tefertiller and Ward, 1995). Blaine (1993) provides a general, but somewhat more comprehensive, definition of a nation's competitiveness. He defines national competitiveness as ability to produce and distribute products and/or services that can compete in international markets, and simultaneously increase the real incomes and living standards of the nation's citizens. Measures of national competitiveness frequently used by the above scholars are net trade balance, share in world trade, and import penetration ratio.

Most trade theorists have not defined competitiveness explicitly and precisely. However, the implicit definition of competitiveness that comes through in the category 2 literature is that it is synonymous with absolute or relative productivity advantage in producing a particular commodity. Variables used for measuring competitiveness are labour productivity, total factor productivity, etc. Some authors other than trade theorists belonging to this category (e.g., Porter, 1990) argue against using balance of trade indicators as measures of competitiveness of a nation and underplay the role of macroeconomic variables such as exchange rate as sources of competitiveness. According to them the right indicator of economic prosperity of a nation, which is the surrogate of national competitiveness, is high and rising standard of living of citizens which is again determined primarily by national productivity. These authors consider competitiveness to be synonymous with productivity and productivity growth measured respectively by output per unit of labour and capital, and their rate of growth. Productivity is assumed by them to capture quality and product feature as well as production efficiency. In the absence of international trade productivity of one country would be independent of productivity of other nations. International trade enables countries to export products, which they can produce at a higher level of, productivity (as compared to other nations) and import products for which their manufacturing productivity is relatively low. This will lead to increase in average productivity of the nation. They argue that the focus of analysis should be on determinants of productivity and rate of productivity growth at the level of industry in a nation (Porter, 1990).

Literature in the third category defines national competitiveness as the cumulation of competitiveness of all firms operating within a nation's boundary cutting across industries or groups of industries (e.g., Chesnais, 1986 as quoted in Papadakis, 1994). Researchers have conceptualised firm level competitiveness as competitive position of a firm vis-a-vis its

competitors in international markets. This is determined by three sets of interrelated factors, viz., delivered cost, product characteristics, and users' perceptions about the match between a product/service and their needs. This has been measured by factors like cost and quality of product and/or service, speed of delivery, brand image, etc., or a composite factor.

4.1 Factors Contributing to Competitiveness

In identifying sources of national competitiveness writers belonging to the first group are more concerned with macroeconomic issues; factors; fiscal and monetary policies of the government, exchange rates, interest rates, fiscal and budget deficits, geopolitical situation of the subject nations, performance of the national and global economies and the economic agenda of trade blocks etc.

Many economists are of the opinion that competitiveness of a nation is determined by exchange rates (Tyson, 1988). Krugman (1983, 1991) argues that increasing returns to scale resulting from superior technology, higher volume and continuous innovation plays an equally important role along with comparative factor advantage to enhance competitiveness of one nation over other. Other authors have also made similar observations (Teece, 1983, 1987; Tyson, 1988). They argue that technological innovation and diffusion are the major factors contributing to national competitiveness.

Researchers who have studied the issue of national competitiveness since the early eighties in connection with the issue of declining competitiveness of the US in international markets have come up with different explanations. According to some authors (e.g., Hatsoupolous, et al. 1988) it is the macroeconomic factors that determine the competitiveness of a population of firms in a nation and individual firms do not have much choice and freedom. According to them firm level behaviour is strongly influenced by macroeconomic factors. For example, short term profit orientation of firms in the U.S. is a result of higher cost of capital due to low private savings rate. Some writers (e.g., Baumol and McLennan, 1985) attribute the phenomenal rise of Japan and the creeping decline of the US and some West European countries in international trade to interlinked macroeconomic factors such as long run productivity growth, higher saving and investment rates, government's emphasis on quantity and quality of education and investment in public infrastructure. Some authors (e.g., Abramovitz, 1986; Baumol et al., 1989) present the

argument of a natural catch up process and the phenomenon of macroeconomic convergence as explanation for declining competitiveness of the U.S. in comparison to Japan and many European nations. According to them highly productive and unexploited opportunities because of pre-World War II technological developments started bearing fruit during the two decades after the war leading to an extremely high productivity growth in all these countries. This growth has slowed down since the 1970s. But as the U.S. economy was healthier and bigger in comparison to the economies of Japan, West Germany, and some other European nations which were badly damaged during World War II, it exhausted the growth opportunities faster than its rival economies which had to cover up a larger gap. Thus though the productivity growth rate fell for all these nations, other economies maintained a faster productivity growth rate than that of the U.S. economy, thus causing a competitiveness crisis since the early eighties.

Citing the cases of the Newly Industrialised Countries (NICs) some authors (e.g., Scott, 1985; Tyson, 1988; Vogel, 1979, 1988, etc.) have argued that government policies can shape national competitiveness over a period of time by either directly or indirectly influencing the quality and quantity of human resource, capital, technology and information to foster technological innovation and its diffusion.

The first theory to explain trade between nations was proposed in 1776 by Adam Smith who argued that absolute advantage in the cost of production of commodities is the basis of trade between nations. However, the law of comparative advantage proposed by David Ricardo in 1817 provided a sounder logic for the existence of international trade that withstood the test of time for more than a century. He flawed the theory of absolute advantage by showing how exchange of goods between two nations could be possible even when one nation had absolute advantage in all commodities over the other. According to him relative prices between commodities and therefore comparative advantage should be the basis for trade between nations. A nation should specialise in only those products that it could manufacture more efficiently and barter them for products that it could manufacture less efficiently. The law of comparative advantage as put forth by Ricardo was fundamentally based on differences in labour productivity between nations in similar industries. This difference in labour productivity could be attributed to differences in production technology, which was assumed to be different across nations.

As some of the crucial assumptions made by Ricardo lost their relevance in the changed context of international trade in the twentieth century, a neo-classical version of comparative advantage trade theory popularly known as Heckscher-Ohlin (H-O) theory of trade came into being. This new theory was based on the idea that all nations could have equivalent technologies but differ in their factor endowments such as land, labour, capital, and natural resources, and this difference in factor endowments across nations would determine the flow of trade.

However, subsequent authors (Vernon, 1966; Krugman, 1983, 1986; Porter, 1990) have argued that while factor advantages were important in the eighteenth and nineteenth centuries, economies of scale, technological change, comparable factor endowments, cheaper transportation costs, and international flow of capital and other factors have pushed firms toward exploiting factor advantages of multiple nations, thus leading to the emergence of a large number of multinational firms. They observe that it is the deployment of factors rather than the factors themselves which determines international competitiveness. To put it in another way the main criticism against the comparative advantage theory has been that none of the variations gives sufficient attention to the throughput, i.e., the technology and the processes through which inputs are transformed into outputs by adding value at each stage of the value chain. It was observed that value addition by firms during transformation processes was substantial and varied widely across nations.

Though subsequent researchers have acknowledged the role played by comparative factor advantage in determining trade patterns, they highlight the fact that there exist competitive industries in many countries not endowed with comparative advantage in the relevant factors. Their argument is that comparative advantage in factors of production is not sufficient to explain competitive advantage of a nation (see Porter, 1990 for detailed discussion).

Vernon (1966) in his product cycle theory explains how diffusion of technology over a period of time could shift comparative advantage from the pioneering countries to late adopting countries as some of the firms from the pioneering countries became multinational. Krugman (1987) has argued that because of 'linkage externality' of some strategically important industries such as steel, semiconductor, and shipbuilding with many industries in an economy, promotion of these industries by the government could improve the economic condition of a nation.

Some writers (e.g., Dertousos et al., 1989; Kanter, 1983; Hays and Wheelright, 1983) belonging to the third category of literature attribute the competitiveness problem of the U.S. to micro or firm level developments such as lower emphasis on manufacturing and operation, product and process innovation, short term orientation of corporate managers, and less emphasis on technology development.

Of late another factor has figured as an important explanatory variable for the competitive advantage of nations. Some authors (e.g., Fruin, 1992) observe that the most outstanding and distinctive feature of the NICs is the unique form of enterprise system founded on the principle of mutual interdependence and network relationships amongst firms, close interaction between firms and government, significance of non-governmental organizations, institutions etc. These factors, according to the above authors, provide an explanation for country level competitiveness.

5. Competitiveness : An Industry Level Perspective

The three categories of literature that have addressed the issue of competitiveness from the perspective of industries have a relatively short history. Literature in category 4 has compared the same sector or industry across different nations to identify country level factors that determine international competitiveness. Literature in category 5 has focused on international competitiveness of individual industries in a nation and relative competitive advantage across industries within the same nation. This category of literature has received particular importance in determining national industrial and trade policies (Nelson, 1992). The sixth category of literature has focused on firms in the subject industry while assessing its global competitiveness. Researchers in this category have highlighted firm level characteristics, interfirm relationships, etc., as the determinant of competitiveness of the industry.

These categories of literature do not provide explicit definitions of competitiveness. The implicit definition it seems is the ability to export or substitute imports. Difference between a product's domestic market and international prices, share in world trade of a particular industry, import penetration ratio in the domestic market, total factor productivity, etc., have been used as measures of an industry's competitiveness.

5.1 Sources of Competitiveness

Category 4 authors have sought to show through examples and analysis how national environments shape competitiveness of industries. Some authors (e.g., Porter, 1990) have highlighted how different industry level factors such as size and quality of home demand, factor conditions, and nature of competition shape industrial competitiveness. Moreover, there are scholars (Abramovitz, 1986; Nelson, 1990, 1992, etc.) who have focused primarily on the competitiveness of the U.S., while trying to explain her loss of competitiveness in some industries like textile, steel and automobiles. They have argued that the U.S. never had competitive advantage in these industries and as the economies of different nations started coming up, these industries got exposed and lost their erstwhile competitive positions.

Some writers (e.g., Amsden, 1989; Borrus et al., 1983, 1986, Tyson, 1988, 1992, etc.) have given prominence to the role of government. This school is gaining prominence particularly in academic circles of developing countries as increasing information is available about how governments of NICs have nurtured infant industries and shaped the competitiveness of firms in these industries to gradually enter the global market and gain prominence over firms from the more developed nations. These authors disagree with the notion that the rising share of Japan and other East Asian economies in world trade first in labour intensive industries like textile, then in capital intensive industries such as steel, ship building and automobile, and finally in high technology industries like electronics, computer and telecommunication is the result of a natural catch up process as posited by some authors. Their contention is that governments of these countries have played a direct and significant role. The policy choices exercised by them directly aided the industries in achieving competitiveness. They argue that American industries suffered at the hands of the Japanese because of a lack of industrial policies and government support in the U.S.

The historical accounts of successful NICs by some authors (e.g., Amsden, 1989; Jhonson, 1982, Ouchi, 1984, etc.) have brought to the fore the importance of the state as an institution in attaining global competitiveness in certain strategically important industries. The market promotion policies of the government in these countries have focused on those industries which have spill over effects on the entire economy because of 'linkage externality' (Krugman, 1987) and on which the future competitive success of various other industries depend (Tyson, 1988).

6. Competitiveness : A Firm Level Perspective

There are three streams of literature, which focus their inquiry primarily on individual firms. Some authors (Kogut, 1991, 1993; Francis, 1992, etc.) give primacy to national environments of firms competing in global markets to explain their competitiveness. Another group of authors (e.g., Amsden, 1989; Porter, 1986 a & b. Tyson, 1992) investigates the characteristics and dynamics of an industry in domestic and world markets, industrial policies and regulations to understand their level and sources of competitiveness. The third group of authors (e.g., Bartlett and Ghoshal, 1989; Prahalad and Doz, 1987; Prahalad and Hamel, 1990) focus on individual firms and their strategies for global operations, resource positions, etc., to identify the real sources of their competitiveness. These writers treat competitiveness (competitive advantage in their terminology) as essentially a firm level issue. According to them competitiveness subsumes quality differences, relative prices, manufacturing and distribution costs, the ability to market, and the efficiency of the supporting marketing and distribution systems. They argue that firm level competitiveness may be conceptualised as competitive position of a firm vis-a-vis its competitors both in national and international markets in terms of three sets of interrelated factors, viz., delivered cost, product characteristics, and users' perceptions about the match between a product/service and their needs. It can be measured by a composite scale of cost and quality of product and/or service, speed of delivery, brand image, etc. In understanding competitive advantage they advocate that market segmentation, product differentiation, economies of scale, technology differences, quality of products, features of products and innovation should be taken into account.

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6.1 Sources of Competitiveness

A firm's competitiveness and competitive behaviour results partly from its possession of a set of attributes, involving institutional arrangements within the firm built over a substantial period of time, and partly due to the exogenous factors attributed to the national environment (Francis, 1992). However, writers belonging to category 7 and 8 emphasise the role of exogenous factors in explaining the competitiveness of firms.

Shan and Hamilton (1991) observe that there are large institutional, cultural, and technological differences between markets, and hence firms may derive competitive advantage over foreign firms in the domestic market. The advantage may come from institutional differences between

markets; a firm's position in the network of organizational relationships crucial for the efficient and effective operation of a business: from its familiarity with the local culture, customs and market characteristics or from simply being an indigenous firm which enjoys preferential treatment by the local government. If the domestic market is large enough to subsidise the loss due to low margins in the global market then firms can derive substantial long term competitive advantage by aggressively acquiring market share in foreign markets to rapidly go down the experience curve and exploit economies of scale (Tyson, 1992).

Some researchers (Shane, 1994; Murtha and Leenway, 1994, etc.) observe that organizational structure of governmental and political institutions and societal expectations though relatively stable with a country show wide variations across countries which contribute to differences in competitiveness of firms across nations. This view is supported by Brahm (1994) and Jones and Teece (1988b), who observe that firms build their structures and capabilities on the foundation provided by government policy and national institutions.

There is an emerging school of thought (e.g., Kogut, 1991, 1993), concerned with firm competitiveness that transcends the boundary the firm to encompass social, technological and institutional factors of nations. They emphasize that the speed by which a firm adopts and integrates new technologies and ways of organizing resources needs to be understood in the context of regional and national networks of firms and institutions. It is based on the notion that these processes take place within specific institutional arrangements among firms, and that these institutions are peculiar to a particular nation (Francis, 1992).

The basic argument of this school is that every firm has a country of origin and different countries have their own way of organising work and technology which is distinct and difficult to change. National organising principles pertain to how activities in the workplace, the corporations and the institutions are organised. The embodiments of such national organising principles are evident in the artisan and organized factory system in Europe, system of mass production in U.S., and the lean, flexible production system in Japan (Kogut, 1993, Kogut and Parkinson, 1993). They observe that historical evolution is a major determinant of firm level differences, and these differences are partly attributable to country of origin effects. Significant differences do exist among institutional arrangements of different countries/societies and both

governmental action as well as historical accident have large roles in explaining how a society's institutional arrangements evolve over time.

The concept of "country capabilities" as put forward by Kogut (1991) brings to the fore the importance of effects of political institutions, national differences in ideology and culture, labour relations, legal, financial and distribution systems that affect the strategies firms can pursue. It is important to understand the relation between societal institutions and economic action, because the interdependent process of functioning of a society's institutional system has an influence on how firms act. Differences in the norms that prevail in the society leads to different internal governance structures which affect learning, competitive behaviour and performance, despite identical economic opportunities (Kogut, 1993). Since regional and national institutions like schools, colleges, universities, unions, government and religious agencies generate isomorphic pressures on firms to adopt similar organizing principles and practices (Powell and DiMaggio, 1991) firms even after becoming multinational cannot get rid of all these organising principles born as a result of institutional heritage of the nation of origin.

Some researchers argue that national culture is of peripheral importance in understanding the competitiveness of firms or nations, but studies (e.g., Hofstede, 1994; Jain and Trever, 1995, etc.) show that national culture does matter. Casal (1994) argues that competitive behaviour of firms can be driven by a combination of certain cultural factors adopted to the contemporary world. There are differences between cultures with reference to attitude towards the future which lead to adoption different management practices by MNCs from different countries (Jain and Trever, 1995). Yawata (1994) observes that Japanese enterprises' emphasis on production technology and applied research may be explained by Japanese society's traditional emphasis on Confucianism which advocates pragmatism in daily life.

As many upcoming and dominating firms in international business have their roots in the NICs, most notably Japan and South Korea, the search light of recent research on competitiveness has been focused on firms originating from these countries. The degree of vertical integration in Japanese companies is very high, which facilitates cross subsidization between/among products; provides an internal demand to cushion erratic external demand; ensures an assured supply of inputs, and tailor made equipments for down stream use. The Keiretsu system lends some

advantages to Japanese manufacturers. Because of stable share holdings, take over threats and short term fluctuations do not dictate business strategies. Intra-Keiretsu sales provide a breather that helps achieve economies of scale and develop technological expertise, and eventually the cutting edge through lower production cost in certain industries which help to reduce import penetration by foreign manufacturers (Tyson, 1988, 1992). Similar arguments have been provided by Amsden (1989) with respect to Korean chaebols.

There is a strong argument by some authors (e.g., Tyrni, 1994) that inter-organizational interdependence and the importance of institutional interrelationships within and across institutions and firms owes much to the late-development effect in these countries. The cooperative and collaborative mode of business in Japan and other upcoming NICs has been propelled by the need for dependence on foreign technology. Pressures to absorb technology, modify the same to suit local consumer preferences and reduce the time lag in the race of catching up with western firms have necessitated the culture of interdependency. The institutional means to organize and exploit resources in these countries appeared in two forms: interfirm and intrafirm coalitions. Intrafirm and interfirm networks have been recognised as very important factors contributing to global competitiveness (Tselechar, 1994). Surveys show that Japanese enterprises in the West prefer to rely on domestic suppliers for components and materials. Firm-level analysis (Tyrni, 1994) has shown that interfirm links, intrafirm understandings among people and specific business practices help Japanese firms to reduce costs, improve quality and speed up innovation. These intrafirm ties affect international competitiveness as Japanese firms transplant the benefits by retaining the ties through subcontracting even for products produced on the soil of other countries (Tselechar, 1994). It is widely recognized that cooperation at the national level was a means for these firms to achieve competitiveness in the global market. Without cooperation, given the scale and capability requirements to survive in global competition, these enterprises were unlikely to be able to garner sufficient tangible and intangible resources, take a foothold, survive and become world leaders.

The emergence of a large number MNCs in the last couple of decades which have distributed different activities in their value chains in different parts of the globe and are operating in multiple nations has prompted researchers to explore factors that have led to their competitive advantage. A group of scholars basing their research on these firms have emphasised the role of

factors internal to the firms such as firms' strategies, structures, competencies and capabilities to innovate, and other tangible and intangible resources for their competitive success (e.g., Bartlett and Ghoshal, 1989; Doz and Prahalad, 1987; Hamel and Prahalad, 1989 and Prahalad and Hamel, 1990). The essence of their argument is that, as the environmental factors are more or less uniform for all competing firms, competitiveness arises or results from management, leveraging, and stretching of resources (Hamel and Prahalad, 1993). While discussing the success of Japanese multinational firms some authors (e.g., Fruin, 1992; Hamel and Prahalad, 1989; Womack et al., 1991) argue that apart from the contribution of the external factors organizational learning, effective building, mobilization and motivation of human resources; achievement of layers of competitive advantage through continuous development of capabilities and competence to move from low cost position to industry technology leadership by incremental process and product innovation have also contributed a great deal to their rapid and overwhelming success in the global market.

7. Some Reflections and Comments

In each category of literature discussions, arguments and emphasis revolve around three issues - definition, measurement, and source of competitiveness. These issues are related to each other and hence disagreement on one issue among researchers invariably lead to disagreement on others. This disagreement primarily stems from differences in their disciplinary bias and educational background. This divide in academics has led to the development of a plethora of theories and explanations of competitiveness. However, it is apparent that given the complexity of the subject no particular school can provide comprehensive explanations. Despite the potential benefits of integration, little progress has been made in synthesizing the various theories (Nelson, 1992). As a first step towards integrating the extant literature it is important to classify it. This has been attempted in this paper.

7.1 Questions Addressed by Researchers

It may be seen that academic discussion on competitiveness at the national level revolves around questions such as - Which nations have relatively high value of foreign trade, are competitive across wide industries, and are the national bases of a large number of globally competitive firms? Why have they been able to do so, and how have they developed such superior competitive positions over most other nations? Discussions on industry level competitiveness

revolve around questions such as - How do factors, crucial for achieving competitiveness vary across industries? What are the structural dynamics of various industries in global markets? What roles do national governments play in shaping industry competitiveness? And discussions on firm level competitiveness revolve around questions such as - Why are firms originating in some countries more competitive than others? What are the roles of home country environment, government policies, institutional set up, culture, structure of domestic and global industry, firm's internal characteristics in shaping the competitiveness of firms? How is competitiveness developed and sustained in successful firms?

7.2 Measurement of Competitiveness

7.2.1. Indicator Variables

One of the predominant issues that add fuel to controversy in literature relates to measurement of competitiveness. We have already mentioned that the dictionary meaning of the word competitiveness is the ability to compete. However, the review of literature shows that very few authors have taken this approach to measure competitiveness. Authors have often used the post facto performance data to measure competitiveness of either firms, industry or nations. It is observed that various types of productivity have been most frequently used. A summary of the various definitions and variables for measuring competitiveness is presented in Table 3.

Table 3 is about here

However, Some authors (e.g., Papadakis, 1994) have argued that productivity and growth of productivity though causally related to competitiveness, cannot be the proxies for competitiveness. Productivity, which measures the rate at which the quantity of inputs needed to produce a defined unit of output changes, does not easily accommodate factors like product innovation. Productivity may not account for the pricing of internationally traded commodities produced in a nation, as it is often a function of product quality and the degree to which a nation can appropriate value from its product innovations. Thus if a nation produces customised and differentiated goods, productivity measures are unlikely to capture the essence of competitiveness of a nation (Tece and Jones, 1988a). But Porter (1990) has a different opinion. He argued that productivity depends on quality and features of the product as well as the efficiency with which it is produced, and thus is the best measure of competitiveness at the national level.

We see that in the initial years when economists posited factor conditions as the main explanatory variable for the difference in competitiveness across countries, they were basically comparing the inputs to firms, being oblivious to the transformation processes within them. The subsequent authors by using performance data, i.e., adopting the output measure, tried to rectify this gap in measurement of competitiveness. By taking output as the measure of competitiveness they have been able to account for the difference in value additions during the transformation processes across subjects. However, this approach has its nuances too. As the performance data are available only after an event has occurred, the validity of the predictions made by using these information about the competitiveness of either firms, industries or nations is always questionable. The performance measure can explain the competitiveness in the past. But can it predict the competitiveness of the subject in future? Can one predict from national productivity analysis which nation is going to rule the emerging industries or industries yet to emerge in future? Can one predict with certainty that firms from which country are going to come up with new products that will be the winner in the world market?

The projections of the past to the future without taking into account the present have problems built in the measurement model. The present here constitutes with the tangible and intangible resources possessed by the subjects under investigation. Though past performance may have some predictive power, there is little doubt that present tangible and intangible resources collectively are a better predictor of competitiveness of subjects in future.

Only recently some authors have started addressing this problem by adopting capability or competence approach to measure competitiveness (e.g., Prahalad and Hamel, 1990 at the firm level and Kogut, 1991 at the country level). They have advocated the use of tangible and intangible assets as the measure of competitiveness. The main reasons for not using the capabilities or competencies as the measure of competitiveness might be two folds. Firstly the difficulty in operationalising and measuring these variables and secondly difficulty in getting the adequate information for carrying out such exercise.

7.2.2. Unit of Analysis

Another observation is that the treatment of competitiveness issue differs across categories may be due to the difference in unit of analysis. We have seen authors have used either nation,

industry or firm as the unit of analysis even in investigating the competitiveness of nations. Taking the nation or an industry as the unit of analysis leads to serious problems. If one focuses on the national level there is always the possibility of overlooking micro level distinctions which are also important for understanding competitiveness in totality.

Although by considering an industry as the unit of analysis instead of the nation one has a better opportunity to look into micro level issues, this approach also has problems. The boundary of an industry itself is very difficult to clearly demarcate; firms producing the same products may use different process technologies and management practices: they may produce different types of byproducts and waste matter, and may have different degrees of vertical integration and diversification. If we take the product approach of classifying an industry then the byproducts or products manufactured from the waste of firms belonging to one industry by some other firms or ancillary units may not fall in the same industry. But some of the byproducts and the products produced by recycling of waste may have good market value, may be internationally competitive, and earn valuable foreign exchange. Some questions therefore arise - should these earnings be considered as the earnings of the industry of primary products or that of the secondary products? How should these earnings be incorporated in our analysis of competitiveness of the industry?

Let us assume that all the steel plants in a country produce steel at a cost higher than that required to be competitive in international markets. There are several potential byproducts of steel plants - ammonium sulphate, benzol, naphtha, etc. Moreover the blast furnace and coke oven gas produced in steel plants can be used by gas based power plants to yield electric power. They also produce wastes like blast furnace slag, which may be used to produce building materials such as cement and chips. Let us assume the byproducts, power and the products from the waste are produced by some other ancillary firms at internationally competitive costs and quality, levels, which earn or save foreign exchange. According to analysts, who consider the industry as the unit of analysis for dealing with the issue of competitiveness, contributions of these ancillary units will not be considered while assessing the competitiveness of the steel industry. With this assumption it may be concluded that the steel industry would be considered to be uncompetitive. Many economists may argue that as steel produced in the country is costlier than that available in the international market, for the overall welfare of the country's economy it would be better to import steel rather than produce it. Let us assume that we can calculate the

total economic loss suffered by a country if it continues to produce steel rather than resort to wholesale import. If this economic loss is, however, well compensated by the earnings from the internationally competitive byproducts and products from the waste of the steel plants, should a country close down the steel industry and go for wholesale import of steel?

Let us look at the case from another angle. A firm in the steel industry of the subject country owns an integrated steel plant and apart from producing steel it also processes the wastes to produce byproducts, power and other products using the same technology and similar management practices as used by the firms in the steel and ancillary industries as mentioned earlier. This would imply that the actual cost of production of steel and byproducts from the wastes of this firm will be the same as for the other firms. Therefore, steel would be internationally uncompetitive but the byproducts would be competitive. But, being vertically integrated this firm can cross subsidise steel by its earnings from the byproducts and thereby reduce the selling price of steel to become globally competitive. Further if it is a diversified firm it may cross subsidise its steel business by its earnings from the other businesses too. In fact case histories of many Japanese and Korean firms (the zaibatsu of Japan and the chaebol of Korea) clearly reveal the incidence of cross subsidisation across businesses to attain global competitiveness (for detail see Amsden, 1989 and Tyson, 1992). It is evident therefore that if a researcher or an analyst restricts analysis to the industry level it would be extremely difficult, rather impossible, to grasp the complexity of the concept of competitiveness and draw a widely acceptable conclusion. The complexity increases further when a number of diversified firms are operating in multiple related and unrelated industries with enormous scope of cross subsidisation.

But then how should one measure competitiveness? What should be the unit of analysis?

From a theoretical standpoint there are two distinct choices available to researchers for measuring competitiveness, either to use a market based measure, i.e., from the point of view of the customer or a product based measure, i.e., from the point of view of the producer. The ideal unit of analysis in the first approach is a particular product which is bought by customers and the point of measurement is the moment of purchase. For adopting the second approach a firm as the unit of analysis is best suited. There are authors who argue that at the firm level competitiveness is easier to conceptualize as competitive position of the firm vis-a-vis its competitors. Three interrelated factors - delivered cost, product characteristics, and users'

perceptions about the match between a product/service and their needs can be used to determine a firm's competitive position. It can be measured by a composite scale of cost and quality of product and/or service, speed of delivery, brand image, etc. On further exploration it can be seen that the delivered cost of a product is governed by six broad categories of factors, viz., cost of output, cost of delivery to customer, premium for the quality of product and service and the brand image associated with the product, pricing behaviour of competitors, and finally direct and indirect subsidies provided by the government. It can be represented as follows:

Price of Product = f (cost of output; cost of delivery to the customer; premium for the quality of product and service and brand image, pricing behaviour of competitors; direct and indirect government subsidies).

To measure competitiveness it would be necessary to assign a value to each of the factors to develop a composite scale which is by no means an easy task. Apart from the difficulty of getting adequate information to calculate the various costs, there is the problem of quantification of factors like premium for quality and brand image and allocating the subsidies to individual products. Moreover, there may be ambiguity and controversy regarding the inclusion of subsidies indirectly provided by the government.

As discussed in a previous section the competitiveness of a nation has been conceptualised by some authors as cumulation of competitiveness of all firms operating within its boundary cutting across the distinction of industries or group of industries. However, projecting firm level competitiveness to the level of industry and nation is not free from problems.

Problem may be envisaged particularly in dealing with MNCs, which have different activities in the value chain located in different countries. The benefits of competitiveness of these MNCs do not accrue to only the nation of origin but several other nations. For example, Toyota, a Japanese automobile giant has manufacturing bases not only in Japan but in the US and some European countries. Thus it contributes to the productivity of each of these nations. It may be exporting vehicles from some or all of these manufacturing bases and hence contributing to foreign exchange earnings of these countries. While measuring the competitiveness at the national or industry level the contribution of Toyota has to be included for each of these nations. But what happens if Toyota being an integrated company cross subsidises operations in Japan through

its operations in the US leading to the accrual of more benefits to Japan than the US? It may happen the other way also. As a multinational firm, Toyota's objective may be to maximise its corporate benefits and to achieve that it may resort to cross subsidisation of operations in one nation by those in others without caring for whether it benefits Japan or the US or any other country for that matter. So long as the researcher does not have access to all the relevant information to normalise the benefits of the cross subsidisation of businesses across nations the cumulation of firm level competitiveness will not give a true picture of industry or national level competitiveness. With increasing globalisation of businesses and transnationalisation of firms the difficulty in extrapolating firm level competitiveness to the industry and national levels would also mount and be subject to error.

8. Conclusions

A firm may have several products and business units. It is also part of an industry, which is in turn a part of a national environment having a unique historical, institutional and cultural heritage. Thus other than its intraorganisational characteristics competitiveness of a firm depends critically on a variety of external factors such as government policies, institutional and industry structure, availability of factors such as finance and information, cultural heritage of the nation, interorganisational linkages with other firms and with supporting institutions such as R&D laboratories and universities of higher education, etc. Involvement of so many variables makes the subject of competitiveness extremely complex.

Given its complexity an eclectic approach may therefore be appropriate for doing research on competitiveness. For a complete understanding of the conceptual and theoretical underpinning of competitiveness it is necessary to look into the arguments put forward by different schools of thought irrespective of their methodological differences.

Moreover, the issue of competitiveness needs to be addressed at all levels not only for academic purposes of gaining a complete understanding of the subject but also from the perspective of practitioners. Policy makers are concerned about the issue from the perspective of the economy as a whole, or multiple industries, and sometimes of a single industry. Industry analysts and associations view competitiveness from the perspective of their respective industries. While firm owners, directors, and CEOs are more concerned with firm level analysis; managers and

consultants are more interested in business and product level analyses.

Given the complexity of the concept and the multiplicity of stakeholders the concept of competitiveness is likely to remain an important area of research in economics and management. Clarity regarding the definition, unit of analysis, variables under scrutiny, and the level at which the issue is being addressed would enhance understanding and facilitate the development of the subject further.

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Table 1: Classification of Competitiveness Literature

Level of Analysis--> Variables Pertaining to	Nation	Industry	Firm
Whole Economy	Category 1	Category 4	Category 7
Industry	Category 2	Category 5	Category 8
Firm	Category 3	Category 6	Category 9

Table 2: Categorising the Literature

Category	Level of Analysis	Variables Pertaining to	Notable Contributors
Category 1	Nation	Whole Economy	Baumol & McLennan (1985), Jones & Teece (1988), Scott and Lodge (1985), Porter (1990), Tyson (1983, 1988), Vogel (1979, 1988), Norton (1986)
Category 2	Nation	Industry	Ricardo and other trade theorists, Vernon (1966), Krugman (1986, 1987), Lall (1990), Papadakis (1994), Porter (1990), Weinstein et al. (1984)
Category 3	Nation	Firm	Amsden (1989), Fruin (1992), Lawrence (1984), Reich & Mankin (1986), Hayes & Wheelright (1984), Teece (1987).
Category 4	Industry	Whole Economy	Amsden (1989), Borrus et al. (1988), Howell et al. (1988), Jhonson (1982), Porter (1990), Shapiro (1993), Tyson (1992), Tyson & Yoffie (1993)
Category 5	Industry	Industry	Brande & Spencer (1985), Nelson (1982), Zysman & Tyson (1984),
Category 6	Industry	Firm	Collis (1993), Amsden (1989), Rukstad (1993), Victor & Yoffie (1993)
Category 7	Firm	Whole Economy	Amsden (1989), Brahm (1994), Francis (1992), Jain & Trewar (1995), Cazal (1994), Kogut (1991, 1993), Porter (1990), Tyson (1992)
Category 8	Firm	Industry	Amsden (1990), Porter (1986 a & b)
Category 9	Firm	Firm	Bartlet and Ghoshal (1989), Doz and Prahalad (1987), Hamel and Prahalad (1989, 1993, 1994), Prahalad and Hamel (1990)

Table 3: Definition and Measurement of Competitiveness

Category	Definition	Measurement
Category 1	Competitiveness is the ability to produce and distribute products and/or services that can compete in international markets, and which simultaneously increase the real incomes and living standards of its citizens	Net trade balance, share of trade in world market, and import penetration ratio.
Category 2	Competitiveness means absolute or relative productivity advantage in producing a particular commodity.	Variables used for measuring competitiveness are labour productivity, total factor productivity etc.
Category 3	National competitiveness is the cumulation of competitiveness of all the firms operating within a nation's boundary cutting across the of industries or group of industries	Cost and quality of product and/or service, speed of delivery, brand image, etc., or a composite scale.
Category 4	The ability to export or substitute import.	Price differential in the domestic market vis-a-vis international price of the products, share of that industry in world trade, import penetration ratio in domestic market, total factor productivity
Category 5		
Category 6		
Category 7	Competitive position of a firm vis-a-vis its competitors in national and international markets determined by three sets of interrelated factors, viz., delivered cost, product characteristics, and users' perceptions about the match between a product/service and their needs.	Measured by a composite scale of cost and quality of product and/or service, speed of delivery, brand image, etc.
Category 8		
Category 9		

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