

The double diamond model economics essay



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Define the Double Diamond Model and explain how it differs from the well-known Porter's Diamond Model. (10 marks – 400 words)

Answer: The Double Diamond Model consists of three kinds of extensions as compared to the Porter's Diamond Model. These are as follows.

It incorporates the multinational activities.

It enables to operation the domestic and international competitiveness paradigm.

It includes government as an important endogenous variable.

The difference between the traditional and the new trade theory (based on monopolistic competition) is that at the level of inter-industry trade, comparative advantage continues to be the dominant explanation of trade flows, whereas at the level of intra-industry trade, economies of scale

become the dominant explanation of trade flows in differentiated products. The similarity is that in both the traditional and the new thinking about trade, advantage comes through specialization. However, in the former, specialization takes place because of country differences, while in the latter; the inherent advantage of specialization is based on increasing returns

By using this model, we were able to examine the similarities and differences in industry structure and explain the different strategic approaches taken by Chinese and Indian automotive manufacturers. These approaches were built on the respective strengths of these three countries.

For example, Porter himself reached contradictory conclusions about the competitiveness of South Korea and Singapore. He argued in his book in 1990 that South Korea is more competitive than Singapore. However, when using the Double Diamond Model, the results are different. They reveal that even though South Korea has a larger domestic diamond than that of Singapore, Singapore has a much larger international diamond than does South Korea.

As a result, South Korea seemed less competitive internationally than Singapore. This suggests that in order to assess the global competitiveness, both, domestic and international determinants have to be taken into account to assess global competitiveness.

This is especially true in today's global environment, where multinational activities represent more than just an exogenous variable (Cho and Moon 2000).

Question 2

For each country, China and India, provide an analysis of the four attributes of the diamond and discuss the relative importance of domestic vs. international factors for the nation's competitiveness of the automotive industry. (20 marks – 600 words)

Answer: The Chinese and Indian automobile industry compared to that of South Korea, unless otherwise specified, we used the most recent available data for the three countries which was the year 2006. The four determinants considered in the Double Diamond Model that will be discussed in more detail in this section are:

- (1) Factor Conditions;
- (2) Demand Conditions;
- (3) Supportive and Related Industries;
- (4) Business Context

Factor Conditions

Factor conditions refers to inputs used as factors of production such as labor, land, natural resources, capital and infrastructure. Porter (1990) distinguished between (1) basic and (2) advanced factors. His basic factors include natural resources, climate, location, unskilled labor, semiskilled labor, and debt capital. Advanced factors are those that were not inherited but were created by the country. These include highly educated personnel such as engineers and scientists. All of these advanced factors often involve

heavy investment and are, therefore, more difficult to duplicate. Thus, their presence in a nation's economy leads to a competitive advantage.

Domestic factors

We used five proxies to assess the domestic production factors. (1) As a proxy for domestic production factor we take as a variable the average manufacturing wage per year. Low wages in manufacturing are a probable cause of expansion of the auto industry.

International factors

Two variables were used as proxies for international factors. We looked at (1) outbound and (2) inbound FDI. Outbound FDI indicates the external investments being made by domestic industry players, while inbound FDI shows the foreign interest in the domestic market.

A limitation here is that these measures aggregate all inbound and outbound flows and stocks of FDI. While they are not specific to the automotive industry, we use them as a proxy for the investments both domestically by foreign entities and abroad by domestic entities into various industries including the automotive and related industries. It is probably fair to assume that automotive and its related industries represent a proportion of these inbound and outbound FDI.

For the determinant of each country, we calculate three main figures: (1) the index value for domestic variables; (2) index value of international variables; and (3) the total global index for each of the four determinants of the Double Diamond Model of the three corresponding countries. We weight each

variable within each group as equally important. This is a limitation of the study and further research might calculate it with different weightings.

Question 3

Discuss the role of the Chinese and India governments in influencing each attribute of the system and in shaping and constraining the behavior of firms (trade policy, competition policy, regulations, domestic politics, etc.). (15 marks – 500 words)

Answer: Michael Porter set government's role and chance as exogenous variables. He argued that government's role should be a catalyst and challenger, neither a helper of industry with industrial policies nor a watcher. While Porter's original approach sets government's role as an exogenous variable, the Double

Diamond Model includes government in the model as an important endogenous variable which directly influences all four determinants. This is especially important in the case of the automotive industry where China's entry into the World Trade Organization (WTO) in 2001 led to a more gradual liberalization and hence increased China's competitiveness. Tariffs on Chinese vehicles declined from over 75% to about 25% by mid-2006, while parts tariffs shrank to an average of 10%.

Foreign auto companies gained the right to offer auto loans and to participate in car dealerships, though they were still restricted to no more than a 50 percent share in assembly operations, and a limit of two Chinese assembly partners. In 1993, India ended licensing of foreign automobile

ventures. In 2001 it lifted virtually all restrictions on direct foreign investment in the auto industry.

Tariffs remained extremely high on vehicles and just under 35% on parts, though preferential trade agreements with ASEAN, and Thailand in particular, led to some reduction in duties. India's government role in decreasing tariffs and allowing foreign entry is now helping the development of India's automobile industry.

Despite the fact that both, China and India are relative new players in the global automotive industry and focus mainly on their domestic market, both are emerging as global players. This is especially true for the Chinese automotive industry. When compared to South Korea, on all four determinants of the Global Diamond, the Chinese automotive industry seems more competitive than that of South Korean.

The automobile industry is paradoxical as China's has developed inwardly for the domestic market not outwardly through export contract manufacturing like many of their other industries. In the automotive industry China's hybrid economic system has facilitated conditions that helped build China into an industrial powerhouse in automotives in a different manner to how it grew to global dominance in other industries such as the toys, computer, bicycles, or microwaves where China is the leading producer already.

China's centralized political system has shown strength in its ability to make large-scale changes rapidly. When combined with a market system, as is the case with China, it can produce large-scale business shifts that are hard to match within other economic and political systems such as India and South

Korea. China has an advantage due to low manufacturing wages and high comparable productivity, but also most Chinese automotive companies have joint-ventures arrangements with foreign companies. These JV are about access, for Chinese automotive manufacturers to access and acquire knowledge and technical expertise much faster and for foreign partners to access the potentially largest and growing Chinese automotive market.

All of this is driven by the huge, rapidly growing domestic market in China which enables the domestic auto producers to profit from economies of scale even before entering international markets; which was not the case for South Korea. The Chinese automotive industry has the infrastructure and related and supporting industries to support the industrial challenge of developing a world-class automobile manufacturing industry. They have scale and growth consistent with dominant players worldwide. The business conditions within China also point to global success.

However, China's success stands in stark contrast to India where bureaucratic inefficiencies have crippled the international competitiveness of domestic industries. The high concentration of automobile production in few domestic firms has stifled growth of the industry. Bureaucratic regulations have slowed the entry of foreign firms which would transfer expertise and technology and strengthen collateral businesses. However, there are several interesting strengths with respect to India. The extremely low labor rates of India may create an opportunity to capture a strong industrial base for either the auto components or the automotive industry.

India's governmental efforts to reduce tariffs and bureaucracy have made it a more attractive destination for foreign direct investment recently. Although service related industries like software and call centers have had tremendous success in India, much less success is seen in manufacturing industries such as the automotive industry. Even though the labor costs are low enough to make India competitive with China there is still significant need for change in several of the other determinants discussed in the Double Diamond Model

Question 4

Explain how the international forces affect the competitiveness of the automotive industries in both China and India. (10 marks – 400 words)

Answer: China is much bigger in terms of automotive sales when compared to India and South Korea. In 2006 China produced five times as many automobiles as India or even South Korea, suggesting that Chinese firms may have scale advantages that may not be available to Indian and South Korean automotive manufacturers.

Scale advantages lead to higher bargaining power and might also give more choice of national and international manufacturing partners, closer relationships with components suppliers and preferential treatment.

Balakrishnan et. al. (2007) noted that there were significant scale advantages for domestic producers where they were close to strong component manufacturers.

However, while the automotive components industry is important and worthy of further study, this paper focuses primarily on automotive manufacturing industry. In terms of car ownership, not only are there more people in China than in India, but also the percentage of car owners is higher.

In China there are about 14.3 million cars (1.1% of the 1.3 billion total population) compared to about 8.8 million (0.8% of 1.1 billion) in India. However, compared to South Korea with 16.9 million cars (33.8% of 50 million), both China and India have fewer cars so far. This will most likely change in the near future especially in China as the current trajectory of car ownership will probably put China ahead of South Korea in a few years. Thus, for each 1% increase of ownership in China and India it would add another 11-13 million more cars to the domestic base of cars.

As a proxy for international related and supporting industries we used

(1) The volume of exports and

(2) Volume of imports of oil. We used this because oil consumption is heavily driving automotive industry.

(3) We take the number of bulk carriers and cargo carriers as a proxy for transportation demand and capacity as they allow us to measure the strength of the supply chain of the country and their ability to ship their products abroad. This is a useful measure as most cars are exported by cargo or bulk carriers. While there are some large international container fleets that do not reside in the major markets in which they are registered for

tax reasons, we still find this a useful proxy. Finally, as in the case of the Demand Condition, we used

(4) Export volume of auto components and

(5) Growth of auto components as a proxy of the size and the international importance of this related industry.

Industrial production growth rate is almost three times higher for China than for India and even South Korea. China is already a global leader in industries such as toys (70%), bicycles (60%), microwaves (50%) or shoes (50%) of world manufacturing. All of these items also require transportation. This creates additional scale advantages in the number of firms that are bulk carriers,

whereas China has more than either India or South Korea.

The lower transportation development (as measured in paved highways) is mainly due to China's larger size and very poor rural infrastructure compared to other countries. Most of China's highway developments have been around the larger cities and the eastern coast.

While the roads may be under developed, mobile phone usage is much higher in China per capita than in India. Additionally, while mobile phone usage does not have the same percentage penetration the absolute numbers of users in China has already surpassed that of South Korea. In the auto components industry, China exports more than South Korea and India and also employs more people.

This is another indication that the competitive landscape of the auto components industry is larger in China than in South Korea and India. Some reasons for that are the low wages in China with respect to South Korea, increased outsourcing to Chinese auto components companies as well as huge and growing Chinese automotive market compared to that of India.

Question 5

Select a leading industry in your home country and answer the following:

Using Porter's Diamond model, discuss its four attributes,

Using the Double Diamond model identify the international factors affecting the industry's competitiveness and

Discuss the role of your government in promoting the industry's competitiveness.

(25 marks – 800 words).

The industry selected is Iron and steel company. Increasingly, corporate strategies have to be seen in a global context. Even if an organization does not plan to import or to export directly, management has to look at an international business environment, in which actions of competitors, buyers, sellers, new entrants or providers of substitutes may influence the domestic market. Information technology is reinforcing this trend. Michael Porter introduced a model that allows analyzing why some nations are more competitive than others are, and why some industries within nations are more competitive than others

This model of determining factors of national advantage has become known as Porter's Diamond. It suggests that the national home base of an organization plays an important role in shaping the extent to which it is likely to achieve advantage on a global scale. This home base provides basic factors, which support or hinder organizations from building advantages in global competition. Porter distinguishes four determinants: Factor Conditions:

The situation in a country

This is regarding production factors, like skilled labor, infrastructure, etc., which are relevant for competition in particular industries. These factors can be grouped into human resources (qualification level, cost of labor, commitment etc.), material resources (natural resources, vegetation, space etc.), knowledge resources, capital resources, and infrastructure. They also include factors like quality of research on universities, deregulation of labor markets, or liquidity of national stock markets. These national factors often provide initial advantages, which are subsequently built upon.

Each country has its own particular set of factor conditions; hence, in each country will develop those industries for which the particular set of factor conditions is optimal. This explains the existence of so-called low-cost countries (low costs of labor), agricultural countries (large countries with fertile soil), or the start-up culture in the United States (well developed venture capital market). Porter points out that these factors are not necessarily nature-made or inherited.

They may develop and change. Political initiatives, technological progress or socio-cultural changes, for instance, may shape national factor conditions. A good example is the discussion on the ethics of genetic engineering and cloning that will influence knowledge capital in this field in North America and Europe.

Home Demand Conditions

The state of home demand for products and services produced in a country. Home demand conditions influence the shaping of particular factor conditions. They have impact on the pace and direction of innovation and product development. According to Porter, home demand is determined by three major characteristics: their mixture (the mix of customers needs and wants), their scope and growth rate, and the mechanisms that transmit domestic preferences to foreign markets. Porter states that a country can achieve national advantages in an industry or market segment, if home demand provides clearer and earlier signals of demand trends to domestic suppliers than to foreign competitors. Normally, home markets have a much higher influence on an organization's ability to recognize customers' needs than foreign markets do. The existence or non-existence of internationally competitive supplying industries and supporting industries.

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Normally, home markets have a much higher influence on an organization's ability to recognize customers' needs than foreign markets do. Related and Supporting Industries

The existence or non-existence:

This includes internationally competitive supplying industries and supporting industries. One internationally successful industry may lead to advantages in other related or supporting industries. Competitive supplying industries will reinforce innovation and internationalization in industries at later stages in the value system. Besides suppliers, related industries are of importance. These are industries that can use and coordinate particular activities in the value chain together, or that are concerned with complementary products (e.g. hardware and software). A typical example is the shoe and leather industry in Italy. Italy is not only successful with shoes and leather, but with related products and services such as leather working machinery, design, etc. Firm Strategy, Structure, and Rivalry

The conditions in a country:

That determine how companies are established, are organized and are managed, and that determine the characteristics of domestic competition here, cultural aspects play an important role. In different nations, factors like management structures, working morale, or interactions between companies are shaped differently.

This will provide advantages and disadvantages for particular industries. Typical corporate objectives in relation to patterns of commitment among workforce are of special importance. They are heavily influenced by structures of ownership and control. Family-business based industries that are dominated by owner-managers will behave differently than publicly quoted companies. Porter argues that domestic rivalry and the search for competitive advantage within a nation can help provide organizations with bases for achieving such advantage on a more global scale.

Porter's Diamond has been used in various ways. Organizations may use the model to identify the extent to which they can build on home based advantages to create competitive advantage in relation to others on a global front. On national level, governments can (and should) consider the policies that they should follow to establish national advantages, which enable industries in their country to develop a strong competitive position globally. According to Porter, governments can foster such advantages by ensuring high expectations of product performance, safety or environmental standards, or encouraging vertical co-operation between suppliers and buyers on a domestic level etc.