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## CONCEPTS OF NATIONAL COMPETITIVENESS

### ABSTRACT

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Today, many governments follow a strategy of national competitiveness for fostering economic development. However, there is no accepted theory of national competitiveness but just different concepts behind these policies. This article aims to provide an overview of the different concepts of national competitiveness, starting with a look at firm level competitiveness. The article distinguishes between four special concepts of national competitiveness and approaches of competitive advantage. It is argued that national competitiveness should be seen as a relative rather than an absolute concept that allows for a benchmarking of nations.

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*Key Words: national competitiveness, firm level competitiveness, diamond model, generic double diamond model*

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## THE NATIONAL COMPETITIVENESS DEBATE

Why some nations\* prosper and some not, has ever been one of the central questions in economics since the days of Adam Smith and competition is the driving force of markets. “The net effect of this competition is that efficient or innovative firms are more likely to increase their market shares, lower their average costs, and reduce prices for customers” (Greene, Tracey, and Cowling 2007, 5). If there were no competition, markets would not be as efficient and there would not be any pressure for improvements and innovations of goods or services offered.

This notion of firm-level competitiveness is clearly at the heart of economics. But nowadays, many policy-makers also apply this concept on the national scale with the USA, UK and Japan clear examples (Kitson, Martin, and Tyler 2004, 991). By doing so, policy makers typically assert that nations can be ‘competitive’ and thus follow policies for fostering national competitiveness on the meso (regional) and macro (national) level (Budd and Hirmis 2004, Bristow 2005a, Camagni 2002, Cellini and Soci 2002, Kitson, Martin, and Tyler 2004, Martin 2005, Thompson 2004).

Notwithstanding the policy fascination with the term, many authors (Cellini and Soci 2002, Krugman 1994, McFetridge 1995, van Suntum 1986) reject the application of the term competitiveness in the national context, with Krugman being the most prominent opponent. They argue that countries do not engage in trade as in a zero-sum game. Trade is not about absolute advantage and not about competitive advantage but about comparative advantage, that is the advantage in producing one good against another within an economy. This is based on Ricardo’s (1817) concept of comparative advantage. Ricardo showed that even if one nation is more efficient in producing all goods, it is advantageous for it to trade with other nations as they are then able to focus their production on the internally and relatively most efficient products, and trade these for these products where they do not have a relative comparative advantage.

When nations are treated like companies, one assumes that they compete with similar products in the same market. In the case of companies, Boeing competes against Airbus in the sector of large airplanes. They have the same possible customers and offer a similar solution. “But the major industrial countries, while they sell products that compete with

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\* The term nation here is used in the sense of a state or country, but not necessarily a sovereign state. For a discussion see Alesina and Spolaore (2003)

each other, are also each other's main export markets and each other's main suppliers of useful imports" (Krugman 1994, 29).

The next complaint is that "national economies do not go out of business such as uncompetitive firms" (Kitson, Martin, and Tyler 2004, 992). The question then becomes where the bottom line is. Corporations can go out of business, "Countries, on the other hand, do not go out of business. They may be happy or unhappy with their economic performance, but they have no well-defined bottom line" (Krugman 1994). Here, one could point to Argentina, a case highly influencing international finance in the early 2000s.

But indeed, the notion of competitiveness has some positive facets, one being that competition for investments as can be observed when companies look for new sites. In such a situation nations try to attract investors, e.g., with tax subsidies or the provision of infrastructure.

The important variable in the competitiveness equation then is factor mobility: "in the absence of factor movements, it makes almost no sense to talk about national 'competitiveness'." (Krugman 2003, 17). But if there are factor movements, national competitiveness plays an important role.

Besides this fundamental discussion, there "is not even an accepted definition of the term 'competitiveness' as applied to a nation" and competitiveness is anything but easy to define (Boltho 1996, Bristow 2005a, Greene, Tracey, and Cowling 2007, Martin 2005, Reich 1990, Thompson 2004).

Therefore this article will look at the different definitions and outline the most recent concepts of national competitiveness, starting with firm level competitiveness. Here, the two concepts of a 'resource based view' and a 'market based view' are employed to explain firm level competitiveness. We then review existing concepts in the field of national competitiveness, coming back to the discussion of the meaning of national competitiveness in the conclusion. We argue that national competitiveness can have a meaning if it is seen as a relative concept as a basis for comparisons, i.e. benchmarking of nations.

## **FIRM LEVEL COMPETITIVENESS**

Competitiveness is a concept most usually applied on the firm scale. When firms have to deal with such competition, we can speak of firm level competitiveness or the microeconomic level. Firm level competitiveness in general is seen as relatively easy to

observe (Bristow 2005a, 287; Porter 1994, 2), as firms face competition in their respective markets. They have to grow, which can be measured in turnover and market share; they have to be profitable, which can be measured in terms of profit and they must successfully meet their customer's expectations which can be measured by customer's satisfaction. In short, the more competitive a firm will be, the greater the market share will be (Martin 2005, 2-1). Uncompetitive companies therefore could be identified by declining market shares and would eventually go out of business. In general, indicators of competitiveness could be ratios concerning profitability and productivity of a company (Marniesse and Filipiak 2004).

To explain how competitiveness on the firm level then can be achieved, business theory provides two basic concepts: the market-based-view and the resource-based view.

The market-based view focuses on the environmental factors of a company to explain competitive advantages and goes back to the structure-conduct-performance-hypothesis based on ideas of industrial organization theory (Porter 1981). The fundamental idea here is that the structure of a market has an influence on the companies and their conduct, which further leads to different performances, based on the ability of firms to adjust the company's strategy according to market structures.

The resource-based view sees firm-level competitiveness as being based on the successful utilization of internal resources (Wernerfelt 1984). To gain competitive advantage, a company must ensure that the relevant resources like human resources are specific to the firm and not capable of easy imitation by rivals (Barney 1991). These resources in addition, must have certain attributes to be a source of competitive advantage. The currently popular core competencies approach propagated by Prahalad and Hamel (1990) is one of the concepts under the resource-based view, focusing on a firm's resources and leaving aside market structures.

Table 1 summarizes the two different concepts to explain firm competitiveness and compares them to each other (see e.g., Barney 1991, Braun, Coenenberg, and Günther 2004, Lockett and Thompson 2001).

Of course these models of strategic management still assume that managers are able to accurately adjust a company to enable it to be more competitive just as in a cockpit. This is questioned by organizational theorists who still see this as a "command and control model of management" (Scarborough 1998, 230).

**Table 1: Comparison of Market-based View and Resource-based View**

<b>Criteria</b>	<b>Market-based view</b>	<b>Resource-based view</b>
<b>Level of analysis</b>	Industry (processes as a black box)	Firm (environment as black box)
<b>Source of competitiveness</b>	Product-related cost or differentiation advantages, existing products	Utilization of core competencies, ability to create future products
<b>Factor of competitive advantage</b>	Positioning of firm according to the market structure Exogenous factors	Internal resources Endogenous factors
<b>Time period</b>	Short-run	Long-run
<b>Context</b>	Dynamic context	Static context (black box), seen as given
<b>Factor mobility</b>	Perfectly mobile, homogenous	Immobile, heterogeneous

So as firms compete for customers and resources and people compete for these jobs and goods, competition seems to be at the very heart of every capitalist society, if not of every society. But there is a considerable debate as to whether places compete in the same way firms do.

## CONCEPTS OF NATIONAL COMPETITIVENESS

As mentioned above, there is no pure competitiveness theory as such, but different concepts trying to provide a framework for competitiveness (for an overview see e.g., Budd and Hirmis 2004, Cellini and Soci 2002, Gersmeyer 2004, Kitson, Martin, and Tyler 2004, Marniesse and Filipiak 2004, McFetridge 1995, Mitschke 2000, Lall 2001, Walter 2005). In the following, broader concepts of competitiveness on the national level are presented, following the structure of Trabold (1995). These four concepts discussed are the ability to sell, the ability to earn, the ability to adjust, and the ability to attract. At last, the concept of competitive advantage concept is discussed.

### Ability to Sell: Costs and Trade Performance

The ability to sell view treats nations like companies and asserts that nations are playing a zero-sum-game, i.e. they compete internationally for market shares. “[A] country has become more or less competitive if, as a result of cost-and-price developments or other factors, her ability to sell in foreign or domestic markets has deteriorated or improved”

(Balassa 1962, 26) Two strands here can be distinguished: price based and non-price-based competitiveness (Marniesse and Filipiak 2004, McFetridge 1995, Mitschke 2000).

*Price Based Competitiveness*

“Ask any good international macroeconomist what key variables they most want to know in assessing a country’s overall macroeconomic position, and the “real” exchange rate [...] will often be near the top of the list” (Rogoff 2005, 104). Theorists who share this view seem to apply some kind of a business controlling approach which “focuses on the kinds of short-term macroeconomic management that affect relative prices of national goods and services relative to other countries” (Lall 2001, 1503). So, if home companies have problems selling their goods to foreign markets, the currency should be devalued and things will change for good as prices will be lower for foreign customers. To cite Boltho (1996, 2), “the desirable degree of international competitiveness in this context could be defined as the level of the real exchange rate which, in conjunction with appropriate domestic policies, ensured internal and (broadly defined) external balance.” But, as Porter (1990, 84) points out, many nations prospered despite appreciating currencies or high interest rates. Although this view was rejected by Daly (1993) who saw changes of trade flows based on exchange rate changes, devaluation must be seen as a double-edged sword. It could lower prices of export goods but at the same time increase prices of import goods. “Suppose that a country finds that although its productivity is steadily rising, it can succeed in exporting only if it repeatedly devalues its currency, selling its exports ever more cheaply on world markets. Then its standard of living, which depends on its purchasing power over imports as well as domestically produced goods, might actually decline” (Krugman 1994, 31).

Supporters of this idea also emphasize the importance of internal input prices, be it labor or other production factors, not clearly separable from the ability to attract view. They often argue that if costs are lower in a national economy, this would lead to a higher national competitiveness compared to other nations (absolute advantage). This is a direct application of firm competitiveness on the national level: lower costs are the basis of lower prices and lead to higher market shares. This asserts that demand price elasticity equals or is higher than one ( $\epsilon \geq 1$ ). Boltho (1996) calls this the “elasticity pessimism”. On the level of the national economy, lower wages also can mean lower demand for the

products these companies want to sell. Indicators in use here are relative unit labor costs or terms of trade, i.e. export prices compared to import prices.

Besides these points, this view also neglects the structure of exports and the kind of dependency on these products on the world market (Boltho 1996, 8). There are goods which are locally bounded and for which there will never be perfect competition on the world market, like oil or gas, as transportation costs – besides other factors – will limit trade and favor some nations.

### *Non-Price Based Competitiveness*

This approach is also called the classic or traditional view. In the words of McFetridge (1995, 28): “Some of the measures of good national trade performance suggested in the literature are (a) a shift in export composition toward higher value added or high-technology products; (b) constant or increasing world market shares; and (c) a current account surplus.”

Authors following the first measure like Magaziner and Reich (1982) point to the importance of high-tech industries and investments in technology for a nation to be competitive. But, as Krugman (1994) has shown, high value added comes back to the fact that some industries are more capital-intensive than others. One problem here is also the fact that only a few people are able to work in high-tech industries, as these industries require some special knowledge. But in reality, coffee shops or retailers employ a lot of low-skilled workers and are necessary to keep unemployment low. Discriminating these kind of industries is not adequate.

The second definition (b) here is similar to the one of the OECD, which sees the competitiveness of a nation as “the degree to which it can, under free and fair market conditions, produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the longer term” (OECD 1992, 237). One measure would be the share in world trade or world exports, measured, e.g., with a constant market share analysis. But, as Krugman (1994) points out, for some countries, exports stand only for a small fraction of GDP, which means these countries rely on home demand rather than external demand.

When following the third strand, a large account surplus is seen as a sign of strength, following the old mercantilist view of ‘good’ exports and ‘bad’ imports (Cellini and Soci 2002, Krugman 1996). The argument goes that countries with high exports are superior in

some industries just because there is a high demand for these products. This helps an economy to prosper and can also help an economy to overcome a weak domestic demand.

But an account surplus may also be a sign of national weakness, a deficit a sign of strength, dependent on the view one may have. To build up the balance of payments, surpluses in one or more sub-category must be balanced by deficits in one or more category. A surplus or deficit can just be a result of changes in exchange rates or interest rates and thus be unrelated to the strength of certain companies. “In sum, a current account deficit may be driven by fiscal or monetary policy rather than by an inherent failure of domestic firms in the traded goods industries to perform to international standards” (McFetridge 1995, 30).

Furthermore, if a company sells something abroad, it holds (foreign) currency, which at some time has to be exchanged for (foreign) goods, that is imports, as a country cannot use the foreign currency to buy goods in the home market. In contrast, capital imports can also be a sign of strengths, as investors may think that a country is worth investing with a sufficient return on investment.

### **Ability to Earn: Productivity and Performance Orientation**

Supporters of this view start by looking at the “results” of an economy as this will indicate the level of national competitiveness, i.e. it is assumed that a higher degree of competitiveness leads to a higher GDP or income and therefore to a higher level of standards of living (Begg 1999, Budd and Hirmis 2004, McFetridge 1995). The source for this is seen in productivity gains (Porter 1990).

When looking at this, one has to separate two definitions: one that focuses on the level of GDP per capita and one that focuses on GDP growth per capita. The level of GDP per capita, widely used when speaking about the well-being of nations, shows what is materially available for the people of a country. The growth rate of GDP per capita only shows the differences to previous periods. When comparing these two, one has to keep in mind that according to the catch-up hypothesis, countries with a lower GDP per capita can grow faster relatively more easily than those countries with a higher GDP. This is due to the fact that these countries have more and more easily accessible unutilized resources.

GDP per capita takes into account all measured material things like DVD players or cars. Non-material and non-tradable things like friendships, voluntary work or unpaid

housework are not included, which is a point of criticism. In addition, higher GDP can also be based on non-welfare circumstances like higher criminal rates. Dunford (2004, 3) estimates the non-welfare share of GDP in the USA at around 7-8%. Again, the question is, whether competitiveness is really a proxy for standards of living (Bristow 2005b, Greene, Tracey, and Cowling 2007, Morgan 2004). Even after accepting GDP as a proxy for competitiveness, the problem of inequality, that is the distribution of income, remains an open but important question (Kim 2006).

The problem with GDP is that often there are no better relatively objective measures of “success” and GDP then is the best one when focusing on “economic success”. In conclusion, to put it with McFetridge (1995, 26) “[p]er capita income growth is the best indicator of national economic success. The most important source of per capita income growth is TFP growth. In practice, either per capita income or TFP growth will serve as an indicator of national competitiveness.”

After concentrating on the outcomes, another strand of literature focuses on the adjustment to changes, as this is seen as the determinant of competitiveness. Often this is based on the application of new (basic) technologies or innovations in general, which is described in the following.

### **Ability to Adjust: Innovation and Flexibility**

"The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates" (Schumpeter 1942, 831). Based on this famous remark, the ability to adjust to changes in the environment is seen as being crucial for the competitiveness of nations as a whole. Two different concepts here can be summarized: the ability to adjust political procedures as well as the economic system as a whole (societal level) and the ability to adjust via innovations and technological change (business level). These two go hand in hand as innovations will only be meaningful and can only be applied, if a society is “open” to such changes, be it economically or in general. This also stresses out the importance of free markets, open economies and entrepreneurship.

Open markets are then seen as the best precondition to allow for economic adjustments when changes happen. This is true if someone follows the supply-side paradigm which emphasizes the inherent stability and self-stabilizing mechanisms of

perfect markets. Exactly this is questioned by the demand-sided paradigms and theories of imperfect markets.

Accepting this view means nations that are at the forefront of innovations and cope with technological change via open and free markets will be more competitive than others. They can apply these innovations and improve productivity or simply provide new products and employment possibilities. Nations that would be able to innovate constantly then could also provide better-paid jobs as value-added would be higher thanks to advances in technology (Magaziner and Reich 1982). Some researchers even argue that nations therefore must follow national strategies and engage in a “head to head” race in R&D (Thurow 1992).

This view usefully highlights the importance of innovation. Researchers like Schumpeter (1939, 1942) have shown how important innovation is and how this can foster growth. However, key questions then become to what extent can a system foster the ability to adjust and how do innovations emerge. Evolutionary economists here point to the role of chance and path dependency in development processes (Boschma 2004). This means, innovations must not only emerge because more money is invested but also because of sheer luck. In addition, cultural influences are very important. But influencing culture not only takes some time but also proves to be very difficult. Nevertheless, few would doubt that innovations play a crucial role. In the end, the ability to adjust always comes to the micro-level of the firm on which these adjustments are made. Innovations there have to be transformed into products, i.e. it all comes down to entrepreneurs in the Schumpeterian sense willing to take risks (Hospers 2006).

### **Ability to Attract: Place Attractiveness**

Supporters here view competitiveness as the possibility to attract outside investments such as financial capital but also human capital. Kovacic (2007, 555): “The economic prosperity of countries is associated with their ability to generate or attract economic activities [...]”. Hence, one of the most important single indicators to assess place attractiveness for investments is the level of foreign direct investments (FDI) (Gilmore et al 2003, Greene, Tracey, and Cowling 2007, Morgan 2004, Müller and Kornmeier 2000). They assume that investors, when thinking about investing capital, will look for the best location to invest the money and will choose the place which will yield the highest possible returns. The inflows of capital from abroad therefore stand for competitiveness as the places with the

highest possible returns will be more competitive and therefore will attract more investments. When following this view, by looking at the amount of FDI, one can assess the competitiveness of a country as this shows that investors are willing to invest in this country and see opportunities for future profits.

#### *Vertical FDI*

Vertical FDI refers to investments of a company typically looking for production locations. Often this means locating where costs per unit are lower than in the home market. This could lead to lower overall employment and therefore weaken an economy at first sight. But to what extent depends on the ability to adjust to these changes. It could put pressure on redundant workers and the wages or lead to higher unemployment. But it could also lead to shifts of employment to other sectors or the creation of new enterprises.

#### *Horizontal FDI*

Mostly, a company seeks new markets and therefore invests directly in foreign markets due to cultural differences. As stated in the EU Competitiveness Report of 2004 (European Commission 2004, 174) “Investing in especially influential regions, be it for R&D, production or distribution reasons, opens up a more efficient channel for companies to harness these forms of tacit knowledge from abroad.” This could lead to higher sales and higher returns for people in the home country, too.

#### *Policy restrictions*

Often, horizontal FDI is a necessity, as some countries may force a company to invest locally. These non-economic reasons, namely trade distorting measures, force companies to invest in a country and leave next to no scope. Government restrictions include minimum shares of local production when entering a foreign market, a certain level of investment to gain tax incentives or locating within a certain region, often special (free-trade) zones where private investments are fostered. Although these restrictions may not be a greater problem in Western countries, “[s]till, it is a reality on international markets and should be born in mind when interpreting the results [of FDI].” (European Commission 2004, 174)

*Risk Management/Natural Hedging Policy*

Some companies are highly dependent on one or a few foreign markets. As they sell their products they get foreign currencies and have to change them into their “home” currency. As sales prices are relatively fixed and exchange rates fluctuate, this is an important source of risk for a company. One possible solution would be to synchronize revenues and expenditures by spending locally. This is also referred to as natural hedging. In this case, the amount of FDI outflow is not connected to the competitiveness of a nation but goes back to microeconomic reasons.

Reichel (2002, 223) asserts that a considerable amount of FDI of industrialized countries helps foster employment as the most important reasons for FDI are the overcoming of policy restrictions or simply risk management. In addition his analysis of empirical studies of FDI reasons indicate that two-thirds of all FDI come back to horizontal integration and only one-third to vertical integration (Reichel 2002, 217).

Another general problem when interpreting FDI numbers are big mergers and acquisitions across countries. This can be seen in the case of Germany. It has seen a net outflow of FDI from 1975 to 2001 except for 2000 which can be explained with the take-over of Mannesmann AG by Vodafone Air Touch plc. Such effects have to be taken into consideration additionally, together with changes in taxation and the existence of tax havens. Even measuring this is not without problem as the definition of FDI is not clear across the different economies and data are often not available (Lipsey 2006). Using FDI amounts as a proxy for national competitiveness and the attraction of a location must be treated with caution, which is why composite indicators are in widespread use.

In addition to the four generic concepts of competitiveness, there are also concepts that cannot be grouped under one heading. In the following, two concepts of competitive advantage, Porter’s diamond model and the generalized double diamond model, are discussed.

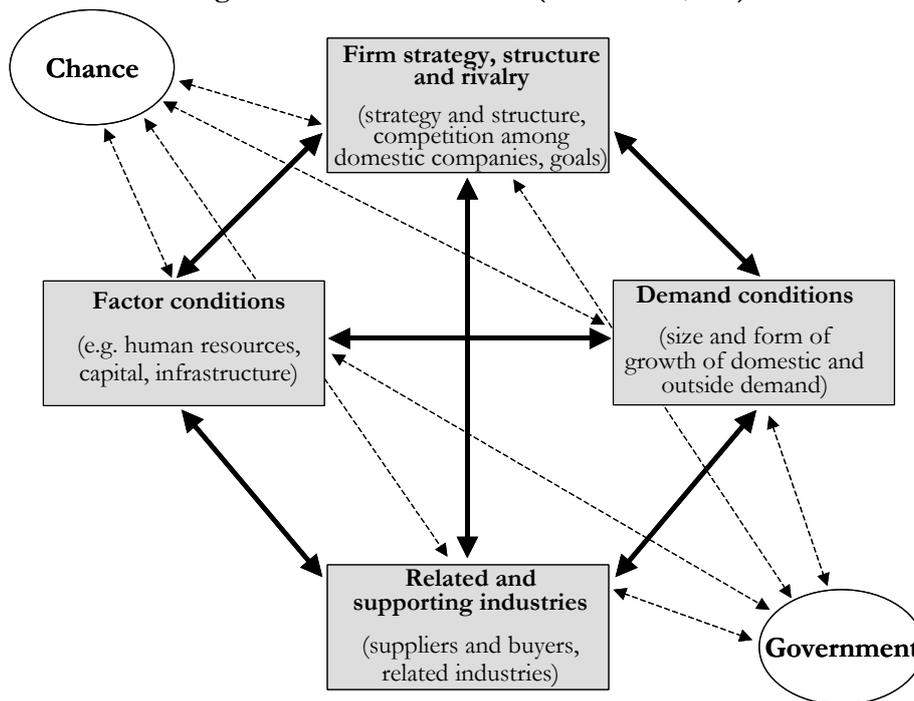
**The Competitive Advantage of Nations**

Although there has always been an interest in the role of location and economic development since Marshall’s (1920) work on location choice and industrial districts or Perroux’s (1955, 1983) work on leading sectors in economics, Porter’s approach has rapidly become one of the standard concepts in this field. His theory is based on a research project undertaken in ten industrialized nations. The project aimed to explain the

competitive differences across nations and saw international trade and foreign direct investments as the prerequisites of a high productivity.

The principle economic goal for every nation, according to Porter, “is to produce a high and rising standard of living” (Porter 1990, 6), measured as national per capita income. This standard of living is dependent on productivity, meaning the “value of the output produced by a unit of labor or capital” (Porter 1990, 6). He therefore chose the term “competitive advantage (of nations) rather than competitiveness”. Porter notes that firms compete, not regions or nations and introduced what he called the ‘diamond’ of competitive advantage. He therefore applied his framework from the field of strategic management of firms on a national/regional dimension and combines microeconomic and macroeconomic determinants. Figure 1 illustrates the factors constituting a ‘diamond’ (Porter 1990, 127).

**Figure 1: Porter’s Diamond (Porter 1990, 127)**



In addition to four economic factors, the role of government as well as the role of chance are emphasized. These two exogenous factors do influence the development of the other four determinants.

His concept provides an explanation why firms seem to (geographically) concentrate in specific locations like in the Silicon Valley, along the Route 128 or in Northern Italy: companies possibly form a (geographical concentrated) cluster of interconnected companies and institutions in a particular field as these clusters “offer advantages in efficiency, effectiveness, and flexibility” (Porter 1998a, 80). This is one of the advantages of Porter’s concept as he incorporates trust – or more general – social capital with shared norms and networks within his framework.

Porter especially highlights the importance of geographic concentration: “The process of clustering, and the intense interchange among industries in the cluster, also works best where industries involved are geographically concentrated” (Porter 1990, 157). The advantages of such a clustering stem from “the incorporation of firms into place-based networks involving trust, reciprocity, loyalty, collaboration, co-operation and whole raft of untraded interdependencies.” (Taylor 2005, 4).

Thus, Porter’s approach combines many different theories to explain competitive advantages and can therefore not be summarized under one of the above four broader categories. Some of these references for the determinants of national competitive advantage are:

- Factor conditions: classical/neo-classical economics
- Demand conditions: export base theory, product cycle theory, Rostow’s stages of growth
- Related and supporting companies: Marshall’s industrial districts, polarization theory
- Firm strategy, structure and rivalry: industrial economics (e.g., Clark), Schumpeter’s work on innovation and entrepreneurship

Porter not only introduced the cluster approach to explain competitive advantage, but also put his approach within a theory of competitive development of national economies, embedding his industry/regional level diamond within the national context.

**Porter’s National Competitive Development Theory**

Porter therefore moves up from the industry level to the national level as “the nature of competitive advantage achieved by many of a nation’s industries tends to evolve together.” (Porter 1990, 543) Dependent on the sources of competitive advantage – what he calls the shape of the diamond – the different nations are grouped into four different stages. The sources of competitive advantage at the different stages are set out in Table 2, following Grant’s illustration (Grant 1991, 540).

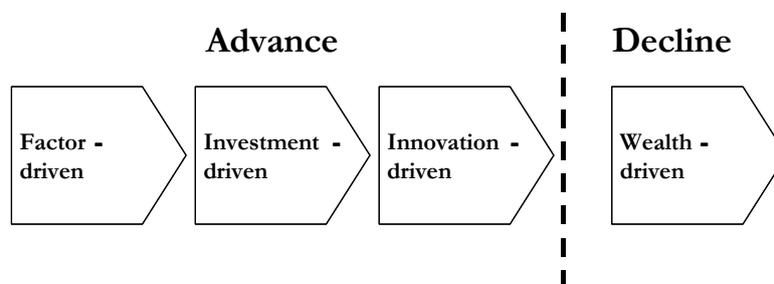
**Table 2: Stages of National Competitive Development (Grant 1991, 540)**

<b>Development Stage</b>	<b>Source of competitive advantage</b>
<b>Factor-driven</b>	Factor conditions are the basis for competitive advantage. Basic factors of production like natural resources, geographical location or unskilled labor
<b>Investment-driven</b>	Factor conditions are advanced, demand conditions at home are an advantage and firm strategy/structure are driven by motivation as well as an intense domestic rivalry Investment in capital equipment, and transfer of technology from overseas. Also requires presence of and national consensus in favor of investment over consumption.
<b>Innovation-driven</b>	All four determinants of national advantage interact to drive the creation of new technology.
<b>Wealth-driven</b>	All four determinants are losing competitive advantage. Emphasis on managing existing wealth causes the dynamics of the diamond to reverse. Competitive advantage erodes as innovation is stifled, investment in advanced factors slows, rivalry ebbs, companies influence government policy to ease competition pressure, and individual motivation wanes.

These different stages reflect the characteristics of a nation and its clusters. The different stages are characterized by the characteristics of the industries, i.e. importance of the different sources of competitive advantage at that stage.

Porter also sees an upgrading process through the first three stages, like the one Rostow (1960) introduced, but in contrast to Rostow’s theory states that “it is not inevitable that nations pass through the stages” (Porter 1990, 545). These stages should not be seen as reflecting every aspect of a development process but just to highlight the most important features of economic progress. In addition, Porter not only sees an upgrading process through the first three stages but also a process of drift and ultimate decline in the fourth stage. This process is illustrated in Figure 2.

**Figure 2: Porter's Four Stages of National Competitive Advantage (based on Porter 1990)**



There is clearly an analogy here with other stage theories. Porter himself points to Rostow (1960) and Vernon (1979) when explaining his own theory. He admits that Rostow's model "seeks to characterize economies more broadly" (Porter 1990, 806). He points to Vernon when emphasizing the importance of innovation and sufficient early home demand as an important pre-condition for the start of a new cycle (Porter 1990, 94). The upgrading process Porter sees means a shift from factor-driven competitive advantages to innovation-driven advantages and eventual full utilization of the potential of the diamond within an industry. But at a certain stage, when a high standard of living is achieved – the wealth-driven stage – nations will face difficulties in maintaining the competitive advantages they have to build up as people will be used to a certain level of wealth and will not work as hard to maintain their position as in the beginning of the process.

### **Porter's Shortcomings**

One of Porter's main shortcomings is the definition of clusters and their boundaries. Porter (1990) sees two core elements: firms must be linked in some way and be within geographical proximity. This does "lack clear boundaries, both industrial and geographical." (Martin and Sunley 2003, 18). How linkages can be measured, how strong these linkages have to be or how specialized a group of companies has to be to constitute a cluster, are open questions. Porter himself wrote that "drawing cluster boundaries is often a matter of degree, and involves a creative process informed by understanding the most important linkages and complementarities across industries and institutions to competition" (Porter 1998b, 202). Other general shortcomings are Porter's treatment of foreign direct investments (FDI) as a kind of "Trojan horses" (Rugman 1993, 5) and the

integration of his diamond model within the international context of multi-national companies, i.e. taking into account globalization effects on production and location, “in this case, national political borders become meaningless. The principle of the diamond may still hold good – but its geographical constituency has to be established on very different criteria” (Dunning 1993, 12). Focusing on the latter point, researchers tried to eliminate these shortcomings by expanding Porter’s diamond and putting it into a globalized context.

### **Double- Diamond and Generalized Double Diamond Model**

A first step to overcome the limitations of Porter’s model was made by Rugman and D’Cruz (1993) with the example of Canada. They incorporated the international context in Porter’s model by introducing the double-diamond. This is made by combining the domestic diamond with that of a relevant economy, leading to a double-diamond. This model itself has some limitations, as it can lead to multiple, not only double diamonds if more than one economy is relevant for the analysis. Therefore, Moon, Rugman and Verbeke (1998) introduced the generalized double-diamond (GDD) model. This globalized model incorporates the domestic and global diamond, which allows for analyzing the domestic and international perspective in a single model (Kim 2006).

This expanded and adjusted competitive advantage model has three major advantages compared with Porter’s original model (Moon, Rugman, and Verbeke 1998, 148). Firstly, it incorporates multi-national firms, secondly, it is easier to operationalize and thirdly, government activities are seen as an endogenous variable. Still, drawing cluster and industry boundaries for the comparison remains a difficult task and the linkages are also not so easy to assess.

### **CONCLUSION**

As seen, the basic concepts underlying national competitiveness have their shortcomings as they often solely look at one characteristic of an economy, be it export performance, prices or FDI. Porter offers a way of assessing what he calls the competitive advantage of nations by looking at the strength shape of diamonds, that is clusters of geographically concentrated industries with strong ties with each other. As could be seen, this approach offers many new insights, e.g., on the importance of the home demand, social capital or the role of supporting industries. Some limitations like the focus on the national rather

than international context and the non-incorporation of multi-national firms have been addressed by models like the double-diamond or generalized double diamond.

Critics still point to the fundamental question if national competitiveness has any meaning as some factors like labor are not that perfectly mobile and companies are the real competitors, not nations. Even that companies compete in the markets, it is clear that the national environment does affect the performance of companies. Beside this, there are also areas where nations compete directly; like in the case of attracting talented people even that factor mobility may not be perfect. For giving national competitiveness a meaning, it must be seen as a relative rather than an absolute concept (Dunning, Bannerman, and Lundan 1998, Hospers 2006, Kovačič 2007). The rejection of the term competitiveness may also stem from the fact that often phrases like ‘winners’ and ‘losers’ are used, especially when nations are benchmarked according to their competitiveness. But this is misleading. Gains in national competitiveness in one nation must not be at the cost of other nations. If two nations grow at fast rates, with one growing still faster than the other, the one with the higher rate of growth could be seen as being more competitive (ability to earn) even that in absolute terms both nations would be better off. Indeed, there would be a “relative loser” and a “relative winner” but no absolute winner or loser.

Competitiveness therefore can be seen as “a way of discussing the relative performance of economies in a benchmarking sense. It can help identify areas of the economy that are lagging behind but cannot explain the reasons for those lags” (Dunning, Bannerman, and Lundan 1998, 21).

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