



COMMENTARY

Competitiveness in a globalised world: Michael Porter on the microeconomic foundations of the competitiveness of nations, regions, and firms

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Abstract

In this paper, we provide the text of an interview with Professor Michael Porter discussing his research and ideas relating to the microeconomic foundations of global competitiveness. The discussion provides a microeconomic perspective on some of the key issues relating to recent research on competitiveness, productivity, clusters, US economic leadership, economic growth and development.

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Introduction

For over 30 years Professor Michael Porter has pioneered the use of economic analysis to investigate important issues relating to 'competitiveness' at the firm, industry and national level.¹ He is widely regarded as one of the world's leading authorities on the competitive strategy of enterprises, the competitiveness and economic development of nations, states, and regions, and the application of competitive analysis to a variety of key social problems, including those linked to the environment, healthcare and philanthropy.

In June 2001, Harvard University announced the establishment of the Institute for Strategy and Competitiveness as a major international centre for management education and innovative curriculum development. This new interdisciplinary research institute, based at Harvard Business School, is headed by Michael Porter and focuses research on the implications of competitive forces for company strategy, assessing the competitiveness of nations, regions and cities, and investigating the impact of competitive capitalism on society and social progress.²

During the last decade there has evolved a welcome congruence between the research of Michael Porter and mainstream growth theorists in that there is now much clearer recognition among economists of the importance of sound microeconomic fundamentals if an investment and innovation-friendly environment is to be created that is conducive to sustainable growth. This is

particularly noticeable in the recent contributions of Baumol (2002), Helpman (2004), the OECD (2004), Sena (2004), the UK Treasury (2004), the World Bank (2005), and the development of the World Economic Forum's Global Competitiveness Index by Sala-i-Martin and Artadi (2004).³

In this article, we provide the text of an interview we conducted with Professor Porter, discussing his work and ideas relating to the microeconomic foundations of global competitiveness and economic development.⁴

Interview with Michael Porter

The role of economic analysis in business school research

On your appointment to the position of University Professor, Kim Clark, the Dean of Harvard Business School, paid tribute to you as 'a pioneer in using economic principles to solve important problems in competitiveness'. How important was your economics training to your later work?

It was fundamental to my work. I see my basic discipline as economics, and I see myself as an economist. There are certain economic fundamentals that influence everything else, and my principle initial contribution was taking some knowledge of industrial economics and for the first time bringing that perspective into the business strategy field (Porter, 1980). So I have always tried to bridge two fields. I have taken economic theory and concepts and applied them in a productive way in more practical settings.

When it came to the issue of competitiveness, what was it that economists were missing in their analysis?

When I came to looking at competitiveness I found that there was virtually nothing in the economics literature that addressed the micro aspects of competitiveness. I wanted to find a framework that would better capture the full complexity of competition. The *The Competitive Advantage of Nations* (Porter, 1990) book was a 6-year effort involving research teams in 10 different countries, because we had to create massive amounts of primary data. My aspiration has always been to create a two-way dialogue in order to bring from economics some analytical rigour into management thinking, but also to bring to economics a deeper understanding about the nature and deeper reality of competition.

Competition as a unifying theme

You have contributed to a wide variety of fields, including strategy, competition and competitiveness, industrial economics, innovation, the economic development of nations, regions and cities, corporate philanthropy and environmental issues. Is there a common theme that connects your thinking on each of these issues?

There certainly is. The core of all of my work is to establish a deep and sophisticated understanding of the nature of competition in individual markets. How do firms compete in markets? How do they develop strategies? How do they gain competitive advantage? So that initial core of work was really about firm-level competition. I didn't even utter the words 'government' or 'locational factors'. Those issues were not even on the radar at that time.

Then I got exposed, almost by accident, to the issue of national competitiveness. I was appointed by President Reagan to a commission investigating the competitiveness of the United States. I immediately started to scratch my head, because there is no simple translation between the competitiveness of a firm and the competitiveness of an economy. Drawing analogies between the competitiveness of firms and the competitiveness of nations involves a fallacy of composition that causes tremendous confusion.⁵ So when I started mulling this over and over in my mind it became clear to me that in order to understand the competitiveness of nations it would be necessary to adopt a bottom-up or microeconomic approach.

My work started with the question: How do firms compete? That led me to the 'cluster' and 'diamond' concepts, and a very granular and close-in view of the business environment.⁶ This approach is complementary to the more traditional top-down approach to economic development, which emphasises factors such as institutional development, trade liberalisation, privatisation, and macroeconomic stabilisation. In the same way the work on regions and inner cities is a derivative of the work on nations (Porter, 1995). It turns out that you can take the same theory and apply it to nations, regions, and cities, provided you make some important conceptual adjustments.

Competitiveness and productivity

As you have pointed out, the word 'competitiveness' leads to much confusion and misunderstanding between academics and non-academics (media, politicians and

business executives). You also stress that it is important to distinguish between competitiveness from a firm's point of view and competitiveness from a nation's point of view. Trade between nations is a positive-sum game, whereas competition between rival firms is a zero-sum game. The UK is not in competition with China in the same way that Coke is in competition with Pepsi. In your work on the competitiveness of nations, regions and cities you focus on productivity as the key to understanding competitiveness (e.g. Porter, 1990, 2003). Why is productivity the key to the competitiveness of nations?

I agree that this confusion between the competitiveness of firms and the competitiveness of nations is widespread. When you look at a firm you need to remember that, barring restrictions, it can operate, produce and sell in any market. Its measure or score card of competitiveness is market share and profitability. In contrast, when you start to look at location I argue, and believe very strongly, that the true metric of competitiveness is the productivity of the resources utilised in that location.

Take for example a company making shoes in Massachusetts that is gaining market share, but is paying its workers only 50 cents an hour wages. The low wage makes it competitive in selling shoes, but is not boosting the prosperity of Massachusetts, which would like to have high wages.

So if you are trying to understand what creates the prosperity of a location you have to see that there is a different score card that you need to use compared with when you are trying to assess the success of a company. Obviously companies and locations are linked, because companies have to operate in geographical locations. There has to be a synthesis. But fundamentally you have to see that there are two definitions of victory, and that the competitiveness of locations is not a zero-sum game. For a firm operating in a marketplace its gain in market share is some other firm's loss of market share.

When you think about competing across locations the situation is different. China competes with the US only in an indirect sense in terms of whether or not it can support and attract productive activity. Nations compete in providing a platform for operating at high levels of productivity and therefore attracting and retaining an ample investment in those activities that support high returns to capital and high wages.

This is a very big issue, and one of the great problems in discussing economic development is confusion about what is meant by competitiveness.

We see the same problem in discussions on the meaning of strategy (Porter, 1996; Stonehouse and Snowdon, 2006). Economists make it worse in some cases when they say things such as 'Wages fell...' or 'the currency value declined... making a country more competitive.' That does not map with prosperity, because a fall in wages makes people poorer. Falling wages are not a measure of competitiveness but rather a sign of lack of competitiveness.

So I find that my number one job when I am working with a state, region or country is to get everybody on board as to the meaning of competitiveness, and what the goals are that we are trying to achieve. In the case of a company it is return on invested capital; in a region or country it is productivity measured by value, not productivity in the narrow sense of volume.

You have argued (Porter, 2004), and I quote, that: 'National prosperity is strongly affected by competitiveness, which is the productivity with which a nation uses its human, capital, and natural resources. Competitiveness is rooted in a nation's microeconomic fundamentals, manifested in the sophistication of its companies and the quality of its microeconomic business environment... The central challenge to the world economy is now microeconomic reform.' What are the important microeconomic reforms that are needed in order to boost productivity and prosperity?

First of all I want to make it clear that it is important to acknowledge that there are some overarching areas of context that can make it easier or harder to influence productivity. I am referring here to the need for macroeconomic stability, and sound political and legal institutions.⁷ If these are not in place then the risk-aversion of investors increases, and you cannot increase productivity without a commitment to invest.

So context is important. However, while the right context is necessary, it is not sufficient to raise productivity. A country might have the most stable macroeconomy in the world, and a well-functioning and accountable democratic political system, but that will not in itself guarantee prosperity. In modelling the microeconomic influences on productivity we emphasise that the ultimate determinant of the productivity of the economy is the productivity of the firms within that economy. When I say 'firms' I mean both local firms and also units of multinationals that may be located in a particular country. It is the output per unit of labour and capital that is going to determine the prosperity of a nation.

I sometimes make economists angry by saying: 'Only firms can create wealth; governments, NGOs and universities cannot create wealth.' Only firms can create wealth when they create a product or service that they can produce efficiently and sell at a price higher than the cost of production, thereby making a profit. What allows firms to be productive is the sophistication of the firms themselves and how they compete, and also the business environment within which the firms compete.

That is where the diamond theory comes in (Porter, 1990). This theory tries to look at the immediate business environment that is surrounding and influencing the competition process. The factors illustrated by the diamond influence the conditions that will have a fundamental impact on the productive potential of firms: factor input conditions, demand conditions, the context of firm strategy and rivalry, and the availability of related and supporting industries. The process of economic development is about improving that diamond so that firms can achieve successively higher levels of achievement and productivity.

Do the main challenges of economic development change as a country grows?

Yes, the challenges of economic development do evolve as you ratchet up that process. Economic development is a sequential process. At low levels of around \$1000 GDP per capita, the constraints on productivity often evolve around problems with the infrastructure. When you get to \$15,000 GDP per capita you need the institutional and incentive structure to create original best-in-the-world innovations. Therefore, the microeconomic economic challenge is constantly evolving. The stages of competitive development involve moving from being a factor-driven economy to becoming an investment-driven economy, and finally to becoming an innovation-driven economy (Porter, 2005).

One of your economist colleagues here at Harvard, Alberto Alesina, has recently produced some interesting collaborative work on the economic determinants of the size of nations (Alesina, 2003). Increasing globalisation and trade liberalisation reduce the advantages of a particular region belonging to a large nation in order to gain scale economies and other advantages of a large internal market. Small nations are more economically viable in a globalised world, and the number of countries has increased from 74 in 1945 to 193 in 2004! What are your thoughts on the implications of this line of research?

This is an interesting line of research. One of the points that I made in *The Competitive Advantage of Nations*, and have made many times since, is that there is what I call a location paradox. You would think that, in an increasingly globalised world, open international markets and the free flow and exchange of information, ideas and resources, that location would become less important. Therefore virtually any economic activity can be carried out in any location, within reason. My argument is that, in the global economy, so long as you have the clusters – the critical mass – a particular field of business activity can be extremely efficient and productive. This does not require a large local market; you just need a very high-quality local market.

Empirically, if you look at case studies of the countries that have done well there is a lot of evidence showing that many small countries have done very well by integrating themselves into the global economy. Singapore is a classic example. Also, if you look at the large countries that are successful you find that one of the important reasons for that success is because those countries effectively make themselves into several small countries by devolving a lot of initiative and authority down to the local regional level. One of the big themes in our work on competitiveness and economic development here at the Institute is the importance of multiple levels of geography. The classical view was that the large nation-state was the key unit for thinking about competitiveness. Now we understand that national and international factors are important, but a lot of the real action is going on in relatively small units.

So I am very much in agreement with that general line of research.

*Economists (e.g., Bhagwati, 2002) emphasise 'comparative advantage' when they explain trade patterns, whereas in your 1990 book *The Competitive Advantage of Nations* you emphasise 'competitive advantage'. In your 1995 co-authored paper 'Green and Competitive' (Porter and van der Linde, 1995) you say that 'Today, globalization is making the notion of comparative advantage obsolete'. Why is this the case?*

Basically, I argue that traditional trade theory, based around the idea of comparative advantage, focuses on a country's factor endowments of land, labour, and capital. But this is not what is driving the current patterns of trade between nations. The most obvious limitation of the traditional theory is

with respect to capital. You no longer need your own domestic supply of capital. If Estonia or Poland offers a profitable economic opportunity it can get all the capital it needs from the international capital markets. With respect to labour, it is not so much the quantity of labour that affects your competitiveness in a given field, but rather it is specialisation and the quality of labour that are important. So it is crucial to recognise that the advantages arise less from inputs in the conventional sense, and more from technology and the efficiency with which those inputs are utilised.

I argue that the efficient utilisation of inputs is fundamentally affected by location and proximity. As the globalisation process evolves, what we see is more subdividing and specialisation of clusters. Ten or 20 years ago there would be a semiconductor cluster in the US and another in Japan. The one in Japan was heavily skewed towards memory chips, whereas the one in the US was skewed towards microprocessors. Now what you see is a cluster specialising in a narrow set of activities, based around manufacturing, for example. If there are 20 manufacturing plants you do not see these scattered across 20 different countries. They tend to be in a cluster in one location.

So the specialisation process is intensifying, and we find that even a small economic region can become a world player. But this cannot be done with one firm; you need the cluster – the critical mass – that gives the externalities and efficiency gains. It is much more efficient for components, machines and backup services to be all in the same location.

We now see the outsourcing of more products that used to be bundled into the vertically integrated firm. I was just at a Board meeting this morning of a company that is the world leader in computer-aided design software. Here we are just beginning to see some outsourcing of development activities rather than manufacturing. We estimate that only about 30% of the development work can be outsourced, but even that is a big change from zero. So instead of having all the R&D people in the design cluster we are also going to have design support clusters based elsewhere, maybe in India or China for example.

So we are witnessing an increasing subdividing and specialisation of clusters. Instead of having three or four significant clusters in the world we now have 10 or more. There is an inexorable process whereby economic efficiency and productivity rules. The more trade barriers there are in the

world the more other factors rule rather than productivity – factors such as the size of the local market, military issues and political ties. Because productivity now rules, we see more specialisation and more clusters.

Geography and clusters

In your work on economic development you have highlighted the importance of 'clusters' and external economies (Porter, 1990, 1998). In economics, several economists have recently begun to emphasise the neglected role of geography. For example, the work of Paul Krugman and Jeffrey Sachs has been very important in this revival of interest (Krugman, 1997; Sachs, 2003; Snowdon, 2005). To what extent is there a link between your research on economic development and this line of research in economics?

Paul Krugman visited our group here at Harvard in the second half of the 1980s, and I gave him a manuscript copy of *The Competitive Advantage of Nations*. He was quite intrigued with it, and I think it did have some influence on his thinking with respect to introducing a geographical dimension to trade theory. Of course, Jeffrey Sachs and I have already worked very closely together on the preparation of the *Global Competitiveness Report* (Porter *et al.*, 2000a, 2001). You are right in saying that there is a growing awareness of the influence of various dimensions of geography on the work going on in economics (e.g., Yang, 2003).

The other area that is undergoing a revitalisation is regional science. There is a long tradition to this perspective. For example, there is a beautiful chapter in Alfred Marshall's *Principles of Economics* about the importance of geography in the competitive process (Marshall, 1890). But this kind of thinking was later squeezed out by the neoclassical tradition that has dominated economics since Marshall. I hope that the new geographical perspective can be reintegrated into mainstream economics.

In my work I try to bring some new focus to this work by emphasising the microdimensions to competitiveness. I think that this view has become widely accepted. Most practitioners working in the field of economic development now recognise that the big missing link was the microeconomic and business side of the equation. Getting the context right is only part of the story. The microeconomic perspective involves focusing on how the quality of the business environment influences competitiveness.

Where does the idea of clusters fit into this story?

The idea of clusters is a derivative of the diamond theory, and refers to geographically concentrated groups of interconnected firms and associated institutions in a similar field. If you believe that the four elements of the diamond theory are important, then you would expect to observe clusters, because they represent an efficient productive structure within which firms can operate.

I think there is now widespread acceptance of the whole notion of cluster-based development, and recent research has placed increasing emphasis on the importance of clustering as an important driver of innovation and competitiveness. As we speak there are literally thousands of cluster initiatives around the world. In the US we have numerous examples, which include microelectronics and biotechnology in Silicon Valley, the auto industry in Detroit, financial services in New York, the aircraft industry in Seattle, and the Hollywood entertainment cluster (Porter, 2003).

The real challenge that we now face in the economic development field is not so much at the conceptual level, but rather is the challenge of process. By that I mean the following: How can we actually organise societies and communities in order to create change? We have a good idea of what policy levers to put in place, but it's actually getting the job done that is the problem. This problem has to be confronted in democracies where you have multiple levels of government and where you have a decentralised private sector.

Clusters influence competitiveness in several ways. The geographical concentration of firms allows more efficient access to specialised suppliers, information and the workforce. Opportunities for innovation are easier to perceive within clusters. Take the case of the Boston Life Sciences cluster. In the Boston area the presence of world-class research universities such as Harvard and MIT, teaching hospitals and biotech companies provides an excellent environment, conducive to the rapid development of new ideas.

Clusters also reduce barriers to entry, given that new firms have access to an established pool of resources. A major challenge for any economy is to upgrade the sophistication of its clusters towards more advanced high-value activities.

The role of government

You have argued against economic strategies that rely too heavily on government involvement. But the Asian

tigers – Singapore, Taiwan and South Korea – as well as Japan employed economic development strategies involving significant government interference. However, in the case of Japan you argue that Japanese government intervention is the cause of failure, not success (Porter and Takeuchi, 1999). The new World Bank position on the role of government argues for a 'significant but focused role' for government (World Bank, 1997). Where do you stand on this issue?

Governments have a crucial role to play in establishing macroeconomic stability and providing stable political, legal and social institutions. However, given these prerequisites for prosperity, we then need to look to the microeconomic level, to the sophistication of firms and the quality of their microeconomic environment. Governments should act as a catalyst, helping companies to improve their competitive position. With respect to East Asian development, the country that I know best is Japan, and my co-authored book *Can Japan Compete?* (Porter et al., 2000b) really grew out of the *Competitiveness of Nations* work. Even back in the 1980s I was sceptical about the Chalmers Johnson industrial policy perspective of Japan's success (Johnson, 1982), where the government is regarded as having played a key role in forging Japan's economic miracle.

Popular explanations of Japan's recent economic problems have tended to focus on the collapse of the bubble economy, over-regulation, and the mismanagement of macroeconomic policy (e.g., Hoshi and Kashyap, 2004). You argue that the problems run much deeper.

Yes, I developed a different view by coming to this issue from a more microeconomic perspective. Macroeconomic issues are important, but they do not tell the whole story. The problem is deep seated, and rooted in microeconomic inefficiencies linked to distortions to the competitive process.

My recent paper on Japan, co-authored with Mariko Sakakibara, puts our book on Japan into the context of the broader literature (Porter and Sakakibara, 2004; see also Porter and Sakakibara, 2001). The research on Japan was striking because it proved beyond a shadow of a doubt that the accepted wisdom – that it was government policy that was mainly responsible for Japan's competitiveness – was deeply flawed in almost every dimension. That is not to say that the Japanese government did not do some useful things. But they certainly did not do the useful things that were being articulated as being representative of the successful industrial policy model of Japan. We

found that industries where those practices were prevalent were the ones that were basically failures. In those industries where government policies led to the restriction of competition we find a lack of international success. The successful Japanese industries turn out to be those where internal competition is robust. So the Japanese did not find a new, more successful form of capitalism. Our research confirms the positive association between vigorous competition and rising productivity and economic success.

There is more debate about South Korea, Taiwan and some of the other East Asian countries. In those countries, in many cases, the government was playing a fairly aggressive role in directing economic activity.⁸ But in both South Korea and Taiwan there were also very powerful micro, diamond-type factors that were also at work. In my view it was these factors, rather than government direction, that played the dominant role in their success.

Let us take the case of South Korea. One of the central core concepts in *The Competitiveness of Nations* and subsequent work is the fundamental importance of local rivalry: that is, the need to have multiple competitors co-located fighting head to head locally. In South Korea in almost all the important industries we had the *chaebol*, and each *chaebol* had a representation in every major industry. The same kind of thing happened in Japan. Yes, the Korean government had a role in the overall story, and tried to do a lot of what it considered to be useful intervention in the economy. But in each area of intervention there was also intense competition, which, in my view, was a far more important stimulus to economic success.

Given my faith in competition I am a strong believer in the need for governments to provide strong anti-trust enforcement with the objective of enhancing the productivity growth of firms.

The Global Competitiveness Report

For several years now you have been involved with the production of the Global Competitiveness Report, which provides an annual ranking of nations according to their 'competitiveness' (Porter et al., 2004, 2005). The report makes use of two measures, the Business Competitiveness Index and the Growth Competitiveness Index. What is the rationale behind these two indicators?

The first indicator, the Business Competitiveness Index, is logically prior to the second, and focuses on the current level of sustained productivity that can be achieved.⁹ The Business Competitiveness Index, which we used to call the Microeconomic

Competitiveness Index, captures the determinants of the level of GDP per capita and hence a country's standard of living. In this case, you need to have information about the broad set of factors that influence the productive potential of an economy, such as the sophistication of company operations and strategy, and the quality of the microeconomic environment.

The second indicator, the Growth Competitiveness Index developed by Jeffrey Sachs and John McArthur, tries to capture the dynamism of an economy (Porter *et al.*, 2000a, 2001; Blanke and Lopez-Claros, 2004). We want to know whether a particular country has in place the conditions and requirements that will allow it to move rapidly up the international competitiveness rankings. So growth competitiveness focuses on factors such as investment rates and rates of technological change, both of which respond positively to the stability of the macroeconomic environment and the quality of public institutions.

It is my assertion that you need to look at both indices, although there is a lot of pressure to roll these two concepts together to produce a single index. Although both indices are highly correlated, there are many productive and prosperous countries that lack dynamism and vice versa. In the 2003–2004 Report Chad, Haiti and Angola come out as the three lowest-ranked countries in both the BCI and GCI. Finland, the US, Sweden and Denmark come out in the first four positions in both the BCI and GCI. However, there are countries that are ranked higher by the GCI than the BCI, including Taiwan, Portugal and Botswana. There are also countries that are ranked higher by the BCI than the GCI, for example France, Germany, Italy and the UK. So if you have a two-by-two matrix there will be countries in every cell. So I think that combining these two measures would suppress useful information. I am now working on this problem with Xavier Sala-i-Martin of Columbia University. In fact, there is a conference tomorrow morning on this very issue. Xavier is thinking about how to combine these two indices, whereas I favour retaining them as separate but complementary measures of competitiveness (Sala-i-Martin and Artadi, 2004; Snowdon, 2006).

What are the major changes that appear to be taking place in the global ranking of 'competitiveness'?

Since I have been involved with the *Global Competitiveness Report* we have seen the increasing

success of Scandinavian countries – Sweden, Denmark and Finland – and the stagnation of Japan. Finland is ranked first in both the Growth Competitiveness Index and the Business Competitiveness Index. On the innovation side we are beginning to see many more countries that have developed the capacity for innovation, while the US has recently experienced a slowdown of innovation rates. The East Asian economies, in particular South Korea, Singapore and Taiwan, continue to do well, whereas in Latin America economic performance has been extremely disappointing with the exception of El Salvador and Chile. In the Middle East Jordan, and to a lesser extent Turkey, has shown dramatic improvement in the quality of public institutions. In sub-Saharan Africa, with the exception of Botswana, there is very little progress. Botswana enjoys the highest ranking in sub-Saharan Africa for the quality of its public institutions and macro-economic environment, although it lags behind South Africa in technology. We are beginning to see some encouraging progress in some of the former Soviet Union transition economies, particularly in the Baltic states. Again, this in part reflects the importance of their geographical location. It is much easier for them to integrate with nearby European Union economies than with the economies that are located much further east. For example, it is increasing integration with Finland and Sweden that is driving Estonia's economy.

Is it an interest in the actual ranking of countries and changes in those league tables that attracts your involvement with this research?

The main reason why I am involved with the *Global Competitiveness Report* is not so much that I am interested in the actual rankings of countries; rather, I am interested in the data. If you accept the micro view of competitiveness that I advocate, then you very quickly come to understand that there are many dimensions of the environment of a country that affect competitiveness. There are not one or two but hundreds of important factors. The schools matter, macroeconomic and political stability matters, clusters matter, and so on. For many of those factors it is almost inconceivable that you can get rigorous and consistent international data. During the *Competitiveness of Nations* body of research, except for some work we did with trade statistics we could never do any empirical testing. Instead we looked at massive numbers of in-depth

case studies of countries, regions and clusters. It was from these studies that the theoretical framework evolved. What the *Global Competitiveness Report* data have allowed us to do is to begin serious statistical analysis, for example on demand conditions. A lot of people argue that local demand conditions are irrelevant in a global economy because countries have access to the global market. In the dynamic cluster-based view of economic development the local market remains important, and we need data to confirm this view. We also need additional country data so that we can do a better job of benchmarking and comparing country performance.

Global economic leadership and the US economy¹⁰

*The United States has been the dominant economy in the world throughout the 20th century. Towards the end of the 1980s many commentators were pronouncing the demise of the US economy relative to the performance of Japan and the European Union. For example, Lester Thurow of MIT wrote *Head to Head* (Thurow, 1992), where he presented a very pessimistic scenario with respect to US economic performance compared with Japan and the European Union. This has to go down in publishing terms as very bad timing, because during the 1990s the Japanese economy stagnated while several major European economies, in particular France, Germany and Italy, experienced high unemployment and very disappointing growth performance. In contrast, after recovering from the 1991 recession, US economic performance for a decade was spectacular, with Robert Gordon even referring to the US economy as the 'Goldilocks' economy (Gordon, 1998).*

In a recent paper Nick Crafts of the London School of Economics argues that the major European economies are no longer catching up with the United States (Crafts, 2004). Do you think that the US can maintain its position as the dominant world economy throughout the twenty-first century given the well-documented rise of countries such as China and India?

I think that the US is likely to sustain its position as the single leading economy for quite some time to come. I think that Japan has had a severe setback, although there are unmistakable signs that it is now recovering. There is no question that China is on a very robust path, with spectacular rates of economic growth, although we must remember that it is still building up from a very low level (Tseng and Cowen, 2005). When we look at patenting per capita in

China it is still only something like 0.2 patents per million people, whereas in the US it is something like 300 or 400 per million. China's biggest wild card is its political future, which remains problematic. Also, many of the investments currently being made are not likely to earn a good return, as many of them have been based on faith in China's large and growing internal market.

India is a more difficult case, because its political structure and system are more complex in terms of policies. India's economy is still riddled with distortions and inefficiencies, although they have made considerable progress since the reform programme began.¹¹

But, taking all things into consideration, I still see the US as a very dynamic and innovative economy. The big strength of the US is its resilience and its ability to deal with problems. When some problem arises in the US, once it is perceived as a problem, it is dealt with. The 'savings and loans crisis' is a good example of this, when restructuring and write-offs soon had the industry on its feet again. The contrast here with Japan is striking, where delay and indecision characterise their approach to a crisis in the hope that it will somehow go away.

What are the main challenges facing the US economy?

The big problem facing the US is the human resource situation. At the university and science and technology level things are great, even if the US inevitably will be less dominant in the future given the catch-up effect. The US has a tremendous infrastructure and talent at this level (Porter *et al.*, 2002). The US population is also very computer literate. However, the average worker is not necessarily much better than the average worker in India or China.

Looking to the future, the US is not graduating enough engineers, and there are not enough new people going into science and technology. During the last 10 years there has been a massive effort to improve the public schools system. Unthinkable revolutionary things have begun to happen. For example, in Massachusetts, the most liberal state, every kid has to pass a test to get out of high school. In the old days no competency was required. It was a case of 'You have been here long enough, off you go' (laughter).

But to deal effectively with this problem will take not a couple of years, but decades. The level of technological dominance enjoyed by the US has allowed us to paper over this issue, but in an

increasingly competitive and globalised world, this problem will be increasingly exposed in terms of reduced competitiveness. I attended a board meeting this morning of a big manufacturing company that produces very sophisticated software packages for the oil industry, allowing them to make complicated designs that can be electronically tested. There is a specific test that can be taken to measure your competence as an engineer in using this technology, and one of the directors commented that his Houston engineers were scoring around 25, whereas the engineers located in Bangalore were scoring around 90! That is worrisome. Now of course those Bangalore engineers are only a tiny fraction of India's workforce, but with a population of one billion that will still amount to a lot of people.

The US has also got itself into a tangle on diversity, and the proliferation of lawsuits, not to mention geopolitical issues such as the war on terrorism. But on balance, taking everything into consideration, I think that the US is going to remain quite competitive and dynamic for the foreseeable future.

Earlier this year Greg Mankiw was heavily criticised for arguing that outsourcing was probably a plus for the US economy in the long run.¹² His comments provoked an outburst of criticism, from both Democrats and Republicans, concerned about the number of jobs lost since the President took office. Do you agree with Mankiw on the impact of outsourcing?

There are two types of outsourcing: one that reflects true economic efficiencies and another that reflects failures and flaws in the US economy. For example, we have a mediocre education system. There are no more engineering graduates today than there were 5 years ago, despite the increasing technological intensity of the US economy. So we are losing some jobs because we do not have an adequate supply of highly skilled people in the right areas. Therefore, we have to make sure that the outsourcing is generating efficiency rather than reflecting failures and distortions that have been generated within the US.¹³

How would you assess recent European economic performance?

European economic performance has been a big disappointment, with a few exceptions, mainly on the fringes.

Do you include the UK as one of your exceptions?

Yes, I believe that the UK has had a remarkable turnaround, although there is a question about how to sustain the progress (Porter and Ketels, 2003). I think there is a dynamism and a willingness to try new things that makes Britain a refreshing place to visit. In fact all the dynamism seems to be located on the periphery – in the Scandinavian countries, the UK and several of the accession countries. There seems to be a lot more going on in the UK than in the other major economies of Europe such as Germany and France, which are in a mess. But the UK now faces the challenge of transforming itself into an economy that produces high-value products and services. The evidence indicates that UK companies are not allocating sufficient resources to innovation and modern managerial practices. In the study that Christian Ketels and I did for the DTI we identified six priority areas that we considered crucial for the enhancement of UK competitiveness. These were: increased public investment, including education, transport infrastructure and building up scientific and technological capacity; improvements in competition policy; cluster development; a strengthening of the regional focus of policy; the development of new institutions that facilitate private sector led development; and a redirection of company strategies towards an emphasis on innovation and the development and production of high-value goods and services. The recent success of the UK has had much to do with the introduction of market-based reforms during the past 25 years. The UK now needs a new approach that will upgrade its competitiveness based on innovation.

Culture and economic performance

You have a recent interesting paper on the impact of culture entitled 'Attitudes, Values, Beliefs and the Microeconomics of Prosperity' (Porter, 2000). The impact of culture on economic performance and business practices has always provoked great controversy (e.g., Temin, 1997). What role does culture play in the determination of economic progress?

I think that economic culture is very heavily derived from the incentives and reality that people face. For example, the Japanese are legendary for being very energy efficient. But that behaviour has more to do with the pricing signals and strict energy efficiency standards that the Japanese face than it has to do with Japanese culture. In other

words, culture reflects context. I am therefore fairly optimistic that culture can be changed, because it is not inherent but learned, and because culture derives from what is rewarded in society. Therefore, changing the rules will lead to a change in culture. If you live in a society where rent-seeking behaviour is rewarded, then you will inevitably see such behaviour becoming widespread (Baumol, 2002). But this does not mean that the population of this country are inherently unproductive because of culture.

Going back to the case of China, it seems clear that their move from being an increasingly productive society to becoming an increasingly innovative society will involve a significant cultural leap.

Yes, but you could say the same thing about Japan. I actually did a video conference yesterday with Beijing University. They are one of the affiliates that teaches my competitiveness course. I was very impressed with the questions that the students raised, so it is clear that China has immense potential.

The role of 'business intellectuals'

You are widely recognised as one of the world's leading 'business intellectuals' in rankings that include both academics and practitioners. It is also clear that you care about how people think and how they behave. Is influencing thinking the most important role that 'business intellectuals' can fulfil?

I firmly believe that my fundamental role is to create ideas and to change the way that people think. My fundamental goal is to change the framework – to change the perspective of the way that people look at a problem. Most things in life are driven by ideas. In my case I am not writing and addressing my work primarily to the academic community and literature. I see my main role as aiming to change practice, whether it be the practice of government officials setting economic policy or that of business leaders setting company strategy. This is deeply embedded in me after being here at Harvard Business School for so many years. I always felt that I had to engage in practice.

How does this philosophy work out?

Usually the way it works is that I will do some thinking and some research, then I will go and try it out in a real company or a city, region or country. It's a kind of iterative process. I try and use any ideas that I develop. That is very important to me. I also want to speak to my fellow academics and

shape the way they write and think, because communication with other scholars is a very important way of disseminating ideas. But the biggest test of my work always comes when I ask myself the question 'Does this idea really connect and resonate when we confront actual practice?' Here at Harvard Business School we are encouraged and rewarded for taking this approach, whereas at many other business schools the natural focus is on publishing papers primarily for the academic community. Having said all this, I have written many such papers myself, and indeed I am back writing articles for economics journals as I did at the start of my career. I have three or four in the pipeline, and I love doing that work. Some of my best days are those when I feel that I have completed some work that scholars will value. But in order to achieve that, particularly given the way that I attack problems, I feel that there has to be a connection with actual practice.

Is this vision shared by your colleagues?

It is often very difficult to persuade younger members of the Faculty that it is changing the world that is important rather than just communicating with fellow academics with scholarly articles. There is a tremendous pressure in US academia to publish scholarly papers, and usually it is quite difficult to break away from the existing structure of that literature and develop ideas that are orthogonal to the mainstream. This makes it more difficult to achieve true innovation.

What is your secret for developing innovative ideas?

I think real innovation in ideas requires the bridging of different disciplines. I see my work as integrative. This is what I was trying to do with my early work on strategy and competitiveness. People on the strategy side thought I had landed from Mars, and even economists thought my work was a little Martian (laughter). It is important that universities create the right structure and environment to facilitate innovative thinking. Here at Harvard we have tried really hard to encourage innovative thinking, and we are very proud of what has been achieved during the last 25 years. We have some outstanding scholars here now, such as Robert Merton, whereas before the 1980s Harvard Business School was associated with the case study approach.¹⁴

Notes

¹Michael Porter is the Bishop Lawrence University Professor at Harvard Business School.

²Detailed information relating to Professor Porter's research, publications, and the activities of the Institute for Strategy and Competitiveness, can be found at www.isc.hbs.edu.

³For a discussion of the World Economic Forum's Global Competitiveness Index see Snowdon (2006). Snowdon and Vane (2005) provide an extensive survey of modern growth theory.

⁴We interviewed Professor Porter in his office at the Institute for Strategy and Competitiveness, Harvard Business School, on 27 May 2004.

⁵Paul Krugman, one of the world's leading international trade theorists, has also been prominent in drawing attention to this confusion. See Krugman (1993, 1994, 1996).

⁶The 'diamond' concept (Porter, 1990, Chapter 3) refers to the determinants of national competitive advantage of industries, or industry segments, and includes the impact of: (1) demand conditions; (2) firm strategy, structure and rivalry; (3) factor conditions; and (4) the presence of related and supporting industries. A 'cluster' is defined by Porter as a 'geographically concentrated group of interconnected firms and associated institutions in a similar field'.

⁷On the importance for economic growth of macroeconomic stability see Taylor (1996). On the importance of institutions see Snowdon and Vane (2002), Rodrik (2003) and Acemoglu and Johnson (2005).

⁸For a recent discussion of industrial policy in East Asia see Hernandez (2004).

⁹For the most recent analysis of 'business competitiveness' see Porter (2005).

¹⁰Economic leadership is defined by productivity performance. See Nelson and Wright (1992) and Krugman (2000).

¹¹For a discussion of the impact of India's reforms on economic performance, see Panagariya (2004).

¹²Gregory N. Mankiw is Professor of Economics at Harvard University, and from 2003 to 2005 was Chairman of the US President's Council of Economic Advisors. In a White House statement on 9 February 2004 Mankiw commented that: 'Free trade is good for America. The truth is when a good or service is produced at lower cost in another country, it makes sense to import it rather than to produce it domestically'.

¹³For an excellent assessment of the economic impact of outsourcing on the US and other developed economies see Bhagwati *et al.* (2005).

¹⁴In 1997 Robert Merton was awarded the Nobel Prize in Economics for developing a new method to determine the value of financial derivatives.



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