Introduction

The world's automotive industry affects almost all of us in some way. It employs millions of people directly, tens of millions indirectly. Its products have transformed society, bringing undreamed-of levels of mobility, changing the ways we live and work. For much of the developed world, and increasingly for the developing world, it is a pillar industry, a flag of economic progress. Without an automotive industry it is impossible to develop an efficient steel business, a plastics industry or a glass sector – other central foundations of economic progress. The automotive industry has been a core industry, a unique economic phenomenon, which has dominated the twentieth century.

What can we expect of it in the twenty-first century? Not the same, for sure. The automotive industry now suffers from a series of structural schisms. It has become riddled with contradictions and economic discontinuities. For the capital markets and the finance sector it has lost a lot of its significance, as a result of ever declining profits and stagnant sales. The proliferation of products means that it has become hopelessly wasteful of economic resources. There is now a divided world of over-motorised countries like those in Europe, the US and Japan, and hungry aspirants almost everywhere else. Motorising these markets to the same extent is simply not possible soon. So there is a growth problem too.

In our view, many of these problems and their implications are self-inflicted – the industry suffers from a lack of systemic thinking: brand proliferation at the expense of rational resource allocation and profit; oligopolistic power without the expected returns; unreasonable pressures placed on suppliers; bully-boy behaviour to manage them, as well as distributors, dealers and governments; micromanagement rather than real leadership.

While all this sounds like a very gloomy assessment of such a vast economic phenomenon, we are not in the end despondent. A different future is possible for the industry, and a highly desirable one. We map out two options. The first we have called Graceless Degradation. This is what we think will happen to the industry if it does not change. The other, the Fourth Revolution, looks at the potential for sustained growth if it does.

The main themes we will develop in this book are as follows.

- The automotive industry is the world's greatest industry, unique in its combination of manufacturing some of the most significant consumer durables, and the home of some of the greatest brands, and the source of a vast array of technologies, unmatched as a manufacturing organisation, on a truly global scale.
- It has made enormous contributions to human welfare and to economic development but the societal and environmental challenges to it continue to increase.
- The level and diversity of technologies that it must deploy are increasing, which imposes both new investment burdens and new uncertainties and risks.
- All this is taking place within a fast-maturing world market. The developed markets are full. The emerging markets will bring only limited growth for another

decade and are not necessarily easy to access.
- The revolution in the supplier industry, begun twenty to twenty-five years ago, has not fully run its course. Relationships with this sector are still very one-sided. There is a danger of excessive pressure on it killing the geese that increasingly lay the golden eggs of innovation.
- The parallel revolution that ultimately has to take place in the downstream (distribution and service) sector has barely begun. The longer-term implications of what took place in Europe around the time of new Block Exemption Regulation are only very dimly perceived but they raise profound questions about the future balance of power in this part of the business.
- The financial performance of the industry has been dismal, with a few exceptions. The capital markets take an increasingly jaundiced view of it, as a destroyer of value. There is clearly something wrong with its economic model.
- On its present course, things seem unlikely to improve. We are concerned about the poor quality of the industry's relationships. We believe that the obsessive proliferation of products does little for growth, inflates development costs, poisons attitudes and potentially threatens investment in needed future technologies.
- There is an alternative future, involving a complete unbundling of the business, more open co-operation and a more rational division of roles and responsibilities. This would lead to a better-balanced, more responsive and less defensive industry, and one with a sounder economic and financial basis.

The interpretation presented here is our own, except where specifically attributed to others. Some will applaud our ideas, others will find them uncomfortable, even alien. We have tried to be as accurate as possible and have used as wide a variety of sources as possible to corroborate our hypotheses. We are, quite deliberately, trying to shake this industry out of some of its introspection and complacency. At the same time we want to stimulate the minds of those who lead the business, to let them see that there is a better way. We want to provide legislators with some ideas and financial institutions with some support, and give society at large some cause to think about the value of our mobility today and in the future. Again, some will enjoy that, others will not. Blandness is not our style.

We are particularly grateful to all those in and around the industry for whom we have had the privilege to work in the last fifteen years, even to those with whom we have occasionally crossed swords.

This industry remains a very great one. It deserves well-informed analysis, commentary and debate. Our motivation, at the very least, is to have contributed to that.

1

From automania to maturity – in the main markets at least

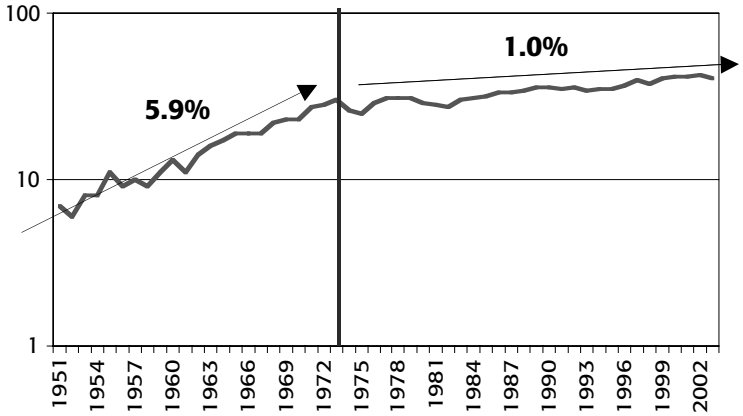
Out of gas – and nowhere else to go

In the time it takes you to count to five, ten new cars and trucks will have been built and sold somewhere across the world: all day, every week, throughout the year. In the same time, almost as many vehicles will have been wrecked beyond repair or scrapped and hundreds will have been damaged in other ways. In the next 15 minutes, thirty-four people will have been killed as a result of motor vehicle accidents. Hundreds will have been hospitalised.

The automotive industry works on a scale so awesome and has an influence so vast that it is often difficult to see. Roughly a million new cars and trucks are built around the world each week – they are easily the most complex products of their kind to be mass-produced in such volumes. The industry uses manufacturing technology that is at the cutting edge of science. It uses 15 per cent of the world's steel, 40 per cent of the world's rubber and 25 per cent of the world's glass. The vehicles themselves, these emotive icons of success, use a staggering 40 per cent of the world's annual oil output.

The motor industry is the world's largest single manufacturing activity. In 2002, the industry's most recent peak, it produced almost 58 million vehicles worldwide. Each contained up to 8,000 individual parts of widely varying materials, made in highly specialised factories across the world. Every year, almost 460 billion parts are needed just to manufacture new vehicles. Massive capacity is also dedicated to the production of replacement parts, for when originally fitted parts wear out or are damaged. There is a range of businesses that focus on vehicle distribution, sales and the service and repair aftermarket too, as well as a massive network of industries involved in the supply of fuel, financing and insurance. The automotive industry is a huge consumer of energy and raw materials. It is also a vast source of employment.

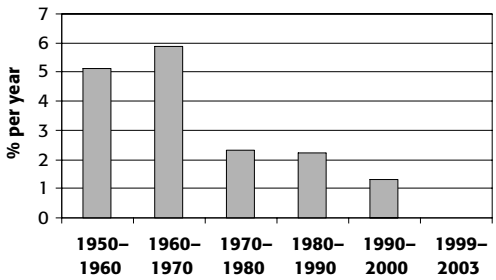
For most of its existence the motor industry has been a model of industrial and social discipline and control. It is not just that the auto sector offers a 'pillar' of industrial development; it also offers something else. Mussolini described the automobile as 'a powerful and delicate machine, which brings together titanic rhythms in its steel heart', which neatly sums up its immense emotional appeal. The Fascist regimes in Europe used the promise of mass motorisation as a means of satisfying individual aspirations without political concessions – although they never delivered on the promise. The industry has provided opportunities for spectacular demonstrations of technical prowess through racing, and for grandiose public works projects starting with the German *Autobahnen* and culminating in the vast US interstate highway network. As coal and the steam engine were to the nineteenth century, so the automobile and oil were to the twentieth. A few have tried to oppose the trend: Nikita Khrushchev rejected mass motorisation for the USSR; some Communist Party officials in China reportedly have doubts. These exceptions apart, the industry has in many ways been a mirror of our societies and our values over the last hundred years.



*Source: auto*POLIS, Economic Intelligence Unit

Fig. 1.1 Slowing world production (millions of vehicles per year)

In this book we look at the impact and influence of the car and the automobile industry. We also look at the discontinuities that have built up in this massive business sector which have to be resolved. It may be a colossal industrial sector, and it may be critically important to millions of us for many reasons, but it is also full of structural schisms that will need to be fixed in a variety of good and not so good ways over the next decade. Like most things that are a hundred years old, the industry is in need of an overhaul. Throughout its history, it has been growth that has been the fuel that has kept the motor industry's engine running; that has kept it on the road. Unfortunately, however, that engine has now stalled. The industry experienced a compound annual growth rate of 8 per cent a year for most of its first century. But the pace has been slowing steadily. Figure 1.1 shows the history of world car production volumes since 1950. The logarithmic scale on the y-axis is used to show ratios instead of absolute numbers. We have illustrated it this way to make the changes in growth rates clearer. There is a very visible break in 1973, the year of the first oil shock. Before that, from 1950 to 1973, world vehicle production grew at almost 6 per cent per year. Between 1973 and the mid-1990s, it slowed down to 1 per cent a year, on average.

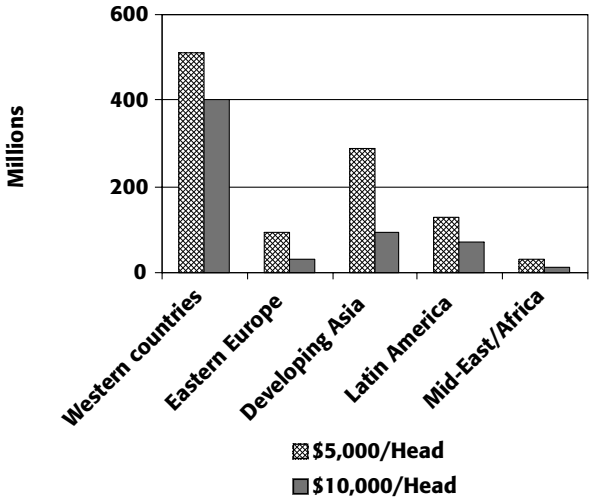


Source: Automotive News, Global Market Data Book, June 2003 and previous years

Fig. 1.2 Coming to a halt: compound annual growth in world production volumes

Between 1999 and the end of 2003 it came to a halt.

The obvious temptation in looking at the figure is to blame the oil shocks for this change in pace. In fact they had only a temporary effect, with less of a downturn in 1974 and 1975 than might have been feared. After that, the OPEC oil producers were paid in dollars rapidly devalued by inflation, so that the real (constant currency value) price of oil quickly returned to where it had been. But vehicle production did not return to the old growth curve. In retrospect, 1973 merely signalled the end of the post-World War II phase of reconstruction. It heralded the beginning of a new phase for the auto industry. This



Source: UN statistics (not available for all countries)

Notes: Western countries: France, Germany, UK, Italy, Spain, United States
Eastern Europe: Turkey, Poland, Hungary, Russia
Developing Asia: China, India, Indonesia, Pakistan, Philippines, Thailand, South Korea, Malaysia
Latin America: Brazil, Mexico, Columbia, Argentina, Venezuela, Chile
Mid-East/Africa: Nigeria, Egypt, Algeria, Morocco, Ivory Coast, Tunisia

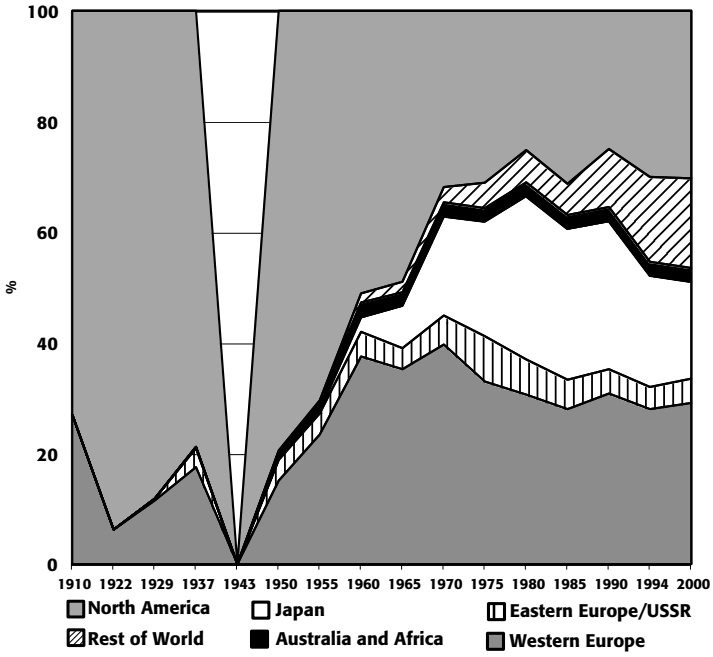
Fig. 1.3 Number of people over purchasing power parity disposable income thresholds, 2000

was the point at which the developed-country markets almost reached saturation. Growth for the world's automotive industry began to slow (see figure 1.2). As we shall see, this is a problem which has become progressively more serious. Over the last thirty years it has affected much of the industry's investment, its behaviour and its performance. Curiously, however, it is a problem that few in the industry seem formally to recognise or even to be aware of.

Throughout most of the twentieth century the motor industry expanded rapidly, moving in parallel with the development of the biggest economies in North America, Europe and Japan. As people became wealthier they aspired to owning a car and the industry made that possible through lowering the costs and prices of vehicles as volumes grew. Yet, even today, the industry and the vehicles themselves remain a feature of life only for the world's rich. More than 70 per cent of all cars and trucks are still sold in the developed world.

The level of car ownership in any country is driven almost entirely by two factors: the percentage of the population who have crossed the threshold of minimum income needed to be able to afford their own vehicle; and population growth. In other words, and perhaps unsurprisingly, the industry's development is mainly a factor of economic development. There are some exceptions, especially in the short term where markets can be boosted or cut for other reasons. We shall explore those more later. As a rule of thumb, though, it is economic development which fuels the industry.

Cars are expensive to own and run – they consume up to a quarter of household budgets in many wealthy countries. You need, on average, US$10,000 of personal disposable



Sources: MVMA data, quoted in Gerald Bloomfield, *The World Automotive Industry,* Newton Abbot: David and Charles, 1978; *auto*POLIS

Fig. 1.4 The first 100 years – production by region

income a year to afford a conventional car, although efforts are underway to produce more affordable, so-called entry-level, cars for emerging markets such as the Renault Logan. Figure 1.3 shows that the population with this level of income is overwhelmingly in the OECD countries.

In 2003 there were a little fewer than 600 million vehicles on the world's roads, roughly one for every ten people. Nearly 80 per cent of these were in three regions – North America, Japan and Western Europe. Almost the same proportion were produced there. Moreover, almost every vehicle innovation, every design and almost every idea affecting the business came from these three places too.

So, in its first century, the automotive industry was a developed-country business, as you can see in figure 1.4. Born in Europe, it first grew up in the United States, extending back to Europe and then to Japan, with the rest of the world trailing far behind. Newspapers may be filled with stories about the spectacular opportunities in countries like China and India today, yet the volumes in these newer markets remain marginal. In 2002, just over a million cars were sold in China, roughly the same number as are sold every *week* in the rest of the world.

There is a critical question behind the end of this growth trend, of course, which the industry needs to ask itself. Is this slowing in the industry merely cyclical (as many like to think) or is it structural?

The answer is that it is both. In many of the developed markets it is structural. The reasons are twofold. First, it is simply a question of demographics. The population in the countries of Western Europe is mostly stable (see figure 1.5), as it is in Japan, while the number of people in the US will grow only slowly, and mostly as a result of immigration, in the next fifty years (figure 1.6). In fact, in many European countries and in Japan, populations

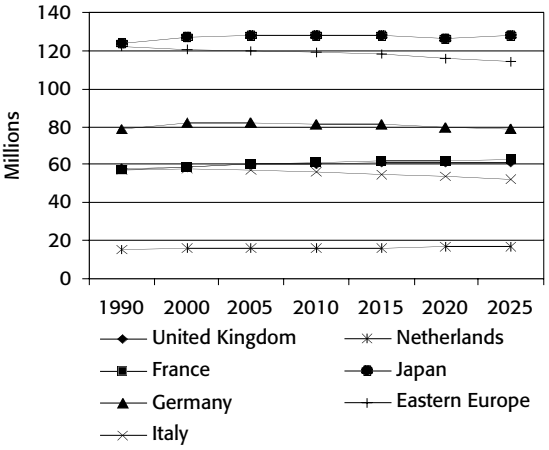
will begin to decline and so the demand for cars will begin to shrink. Add to that the rising costs of car ownership and the growing pressures from environmentalists in some places to cut car use and this drop-off in demand could be pronounced in some countries.

Moreover, the population of Japan and of Western Europe is set to start declining fairly soon (see figure 1.7). This will cause enormous problems of age dependency, with too few young earners to support a swelling proportion of retirees. The strain on European retirement funds is being felt already. It will also affect the auto industry by cutting disposable incomes and changing spending priorities.

So the problems in Europe and Japan are structural. There will be some growth in the US but it will be comparatively small, will take time to come and may not compensate for the drop-off in the other developed markets. So, in the world's largest markets, the overall outlook in terms of demographics – and so vehicle sales growth – is not too good.

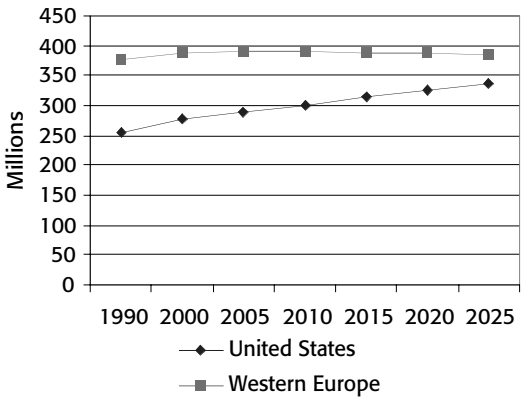
The second structural reason for the gloomy growth prospects in the developed countries is market saturation. In most of the major markets there are simply enough cars on the roads already to satisfy most people's needs for individual motorised transport – which is why demand has become flat in Japan and mostly flat in Europe. Worse, congestion, especially in urban areas and at peak travel times, is starting to put a lid on the growth in the use of cars. There is neither the money, the space nor – increasingly – the inclination to build more roads to accommodate traffic. We shall never again see schemes such as those that put expressways along the banks of the river Seine in the heart of Paris in the 1970s.

But surely the developing world has a huge unsatisfied demand for cars? Will this not make up the shortfall? If they reach the levels of motorisation of the developed world, the demand for cars will continue to grow healthily, will it not? After all, if China alone had the level of motorisation of the US, world demand would double. (See figure 1.8 for how many cars there are per thousand people in countries that are part of different world regions.)



Source: International Energy Administration

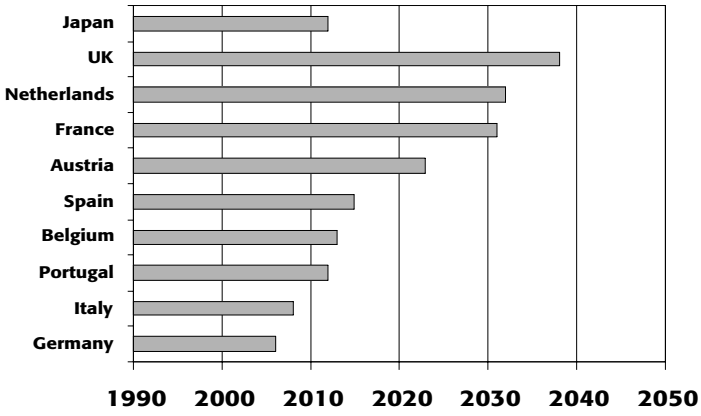
Fig. 1.5 Population trends in European countries



Source: International Energy Administration

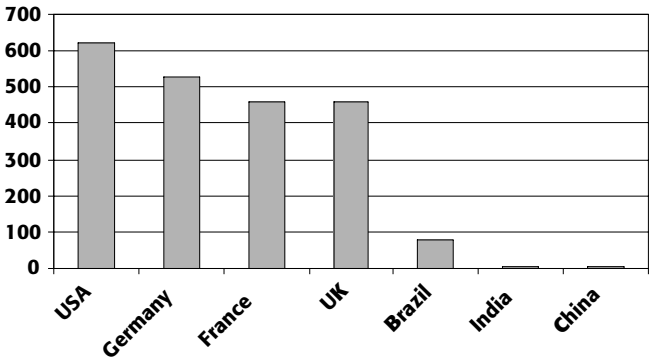
Fig. 1.6 Population, US versus Europe

Certainly, it is not population or population growth that is lacking. The UN's forecast in figure 1.9 makes clear the contrast between the demographic stagnation of the developed world and the continued growth in developing regions. The constraint, of course, is income levels, shown in figure 1.3. Until these new countries reach equivalent levels of income, they will not see any Western-style mass motorisation. And that will take,



Sources: US Census Bureau, *Financial Times,* 7 June 2003, University of Utrecht Library

Fig. 1.7 Fewer future car buyers: year in which population starts to decline



Source: Economic Intelligence Unit

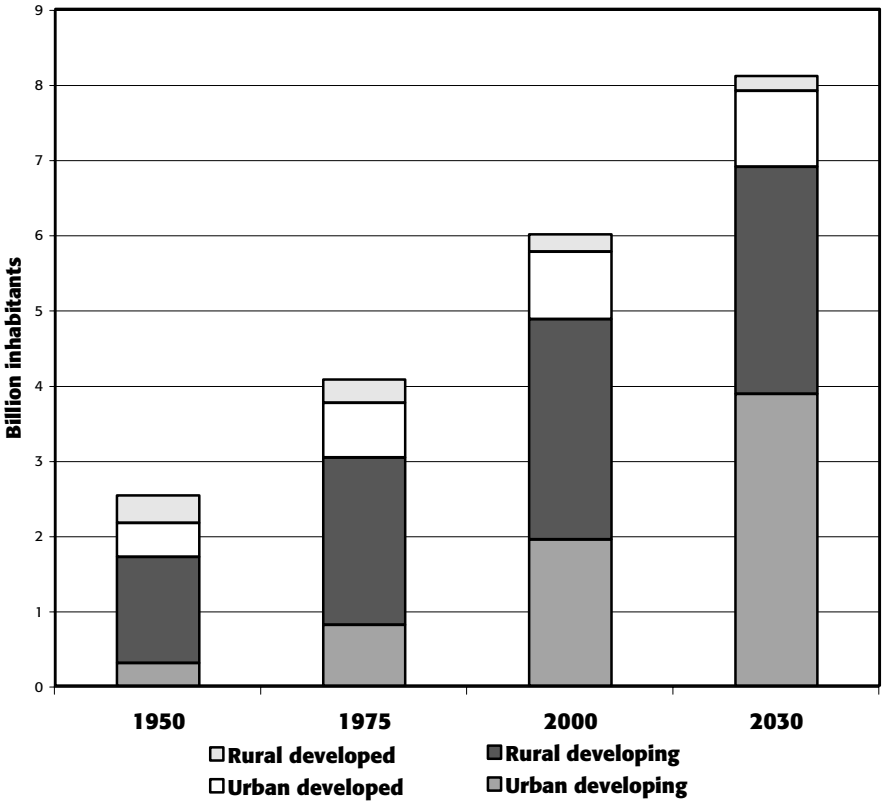
Fig. 1.8 Car parc per thousand population, 2003

in many cases, more than a decade. China's GDP per head is a tenth of the level needed for motorisation; India's is less than half that.

So while everyone might talk about markets like China and India having masses of potential because of their large populations, rapid rates of economic growth and comparatively few cars today, such thinking is naïve. The reason most people in China and India do not have cars is simply that they cannot afford them. The sales opportunities in these markets – even ten years from now – are far too small to compensate for the stagnation in the biggest markets.

So the growth problem facing the industry is mostly structural. In the long term, a decade or more from now, the growth will return as these developing markets motorise – and so there is a longer-term cycle which will play back in the industry's favour. This is why we have said that the ending of the growth experienced by the industry is also cyclical. Eventually, once the emerging markets are large enough, high rates of growth might be possible for the industry again. There is a longer-term global cycle which might come into play again in another decade or so. But it is the next ten years that are the problem.

In addition, the growth in the emerging markets may prove illusory. It should not be counted on. Figure 1.10 shows what happened



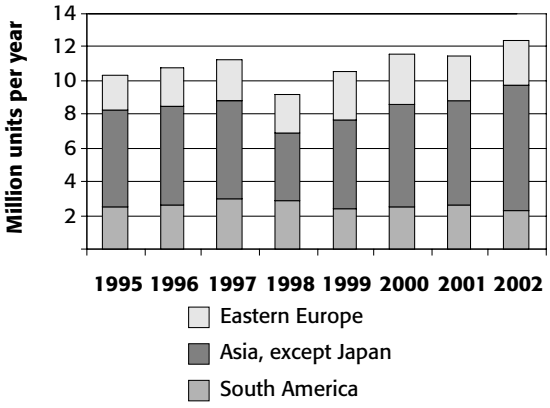
Source: UN, *Demographic Yearbook,* New York: United Nations, 2000; World Business Council for Sustainable Development, *Mobility 2001,* Geneva: WBCSD, reproduced with permission

Fig. 1.9 World population growth 1950–2030 (billions of people)

in the car markets of the major emerging regions between 1995 and 2003. This was the time when they were seen as the 'next big thing', when they were flooded with new automotive capacity and were seen as the great hope for sales volumes.

Demand in South America boomed for a while and then collapsed. The region has gone nowhere. By far the largest market there is in Brazil, a country that never ceases to disappoint by not achieving its vast potential. Car sales there in the early 2000s were less than in the 1990s. Argentina, the second-largest market, which is economically and socially very different, a formerly wealthy semi-European country, fell on desperately hard times. Sales collapsed there too. Our pet theory on Argentina, incidentally, is that its wealth was transitory, earned through agricultural exports in the time after Lenin and Stalin wrecked Russian agriculture, which had previously been a considerable exporter.

Central and Eastern Europe have not lived up to expectations either. Instead of having a vast emerging market after the collapse of the Soviet system, the area has been troublesome and volatile. Today, it broadly divides into two groups: the countries that acceded to the European Union in 2004; and Russia and many of the remaining Eastern European countries, which are locked in poverty and corruption. The former were already surprisingly well motorised under Communist rule and have merely shifted their purchasing to Western European vehicles. The latter will not



Source: autoPOLIS, Automotive News, Global Market Data Book.

Fig. 1.10 Recent performance of emerging region markets

take off soon, leaving Russia as a market of huge unrealised potential.

Asia (outside Japan) held enormous hope for the industry in the 1990s too, but most of this came to a halt when the all too predictable (we certainly predicted it) economic crisis hit the 'Asian Tigers' in 1997–8. The region also failed to live up to many expectations because China was still very poor, with a car market that was still largely confined to higher members of the Party, at least in the early and mid-1990s. That, of course, has begun to change – indeed we are optimistic about demand in China. We believe it will be very volatile but also that it will overtake Japan by 2020 (see figure 1.11). We will explore this more in chapter 4.

So the emerging markets have not lived up to expectations so far. But let us brush aside such scepticism and assume that they will grow as many hope in the future. Let us assume that they help make up at least a little of the overall growth shortfall. Even then, there is another problem. There is another assumption about these places that may be over-optimistic.

The world's carmakers look at places like China and India and hope they will generate a surge in sales. Their sales. As we have shown, it has not happened as they planned so far. But even if it did, would they benefit? Perhaps surprisingly, there is growing doubt over whether or not the traditional carmakers in the industry – those in Europe, the US and Japan – will be the ones to benefit from the next wave of growth. The newly developing markets already have other ideas.

Let us look long term. By 2020, we think China will have grown to become one of the world's largest automotive markets, making Asia the world's dominant automotive region (see figure 1.12). India is likely to play an increasingly important role by then too. Yet foreign carmakers entering the market in China have already found the going tough. They have found that their technology has been acquired by rivals and that there has been too much competition, leading to a vast array of products and few economies of scale. There have even been counterfeits of complete cars – an issue we shall come back to later. But there has also been one more troublesome issue in China which most foreign firms have been conveniently ignoring. It is the fact that it is an explicit policy of the Chinese government that foreign firms will not be allowed to end up in control of the country's auto sector. Few of those clamouring for a share of this seemingly attractive market have remembered to mention this when they tout their apparent successes.

China remains a centrally planned economy in some important respects. Beijing has made its plans very clear. The automotive industry policy document issued by the State Planning Committee in 1994 and subsequent amendments lay out exactly how many Chinese firms will dominate which sectors of the market by when. It specifies which technologies will be developed over which timeframes and in which sequence. It specifically states that the industry will become an 'independent' one, free from foreign control. A draft policy document published in 2003 made the policy clearer still, specifically suggesting that the government wanted to curtail the ability of foreign automakers and suppliers to protect their proprietary technology and intellectual property in China. It stated that, by 2010, half the vehicle market should be in the hands of 100 per cent Chinese firms using their own