



US car market: Returning to its previous size

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Author
Eric Heymann
+49 69 910-31730
eric.heymann@db.com

Editor
Antje Stobbe

Deutsche Bank AG
DB Research
Frankfurt am Main
Germany
E-mail: marketing.dbr@db.com
Fax: +49 69 910-31877

www.dbresearch.com

Managing Director
Thomas Mayer

In cooperation with VDA –
German Association of the
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The US market is gradually overcoming its deep crisis. In 2010, unit sales of light vehicles (LV) were already up 11%. And in 2011, an increase of more than 10% was recorded. Despite this growth, the 2011 sales volume is still down 25% (or more than 4 m units) on the 2005 level. On the one hand, this shows the scale of the crisis, on the other it signals an enormous backlog demand.

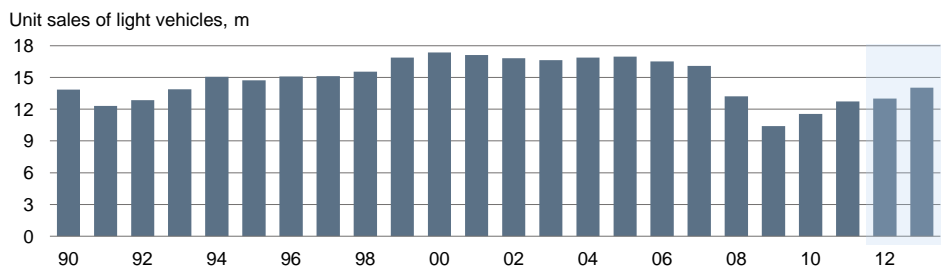
In 2012, the US car market will continue to recover, albeit at a slower pace. We expect a unit sales increase of roughly 2%. In 2013, sales are likely to accelerate as the overall economic situation is improving; our 2013 forecast is a high single-digit growth rate.

In the medium term, prospects for the US car market remain positive. Towards the middle of the current decade, LV sales should have returned to their high pre-crisis levels. And in the longer term, an even higher sales volume is likely. The main drivers are the growing population figures (another 50 m people by 2030) as well as the major importance of cars for US consumers. LV production in the US will also pick up again in the next few years, starting from a low level. Among the risks are the effect of the debt crisis on the US economy as well as the development of oil prices.

German car producers are well positioned in the USA. Their share of unit LV sales continued to increase over the last few years and reached a good 8% in 2011. By 2015 this market share is expected to have risen further to 10%. The main reasons are the attractive range of models and the expansion of production at US plants. This should make German brands even more attractive.

Diesel and hybrid vehicles will expand their share of the US auto market in the next few years. They can help to increase the energy efficiency in US road traffic. An increase in the market share of diesel passenger cars would benefit German producers most. In the passenger car segment, the diesel share could increase to 3% by 2015; hybrid cars could even attain a high single-digit market share.

Strong backlog demand in the US car market



Sources: Bureau of Economic Analysis, DB Research



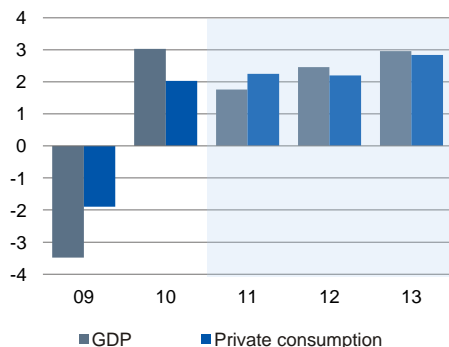
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Introduction

US economy growing moderately

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Real, % yoy



Source: DB Research

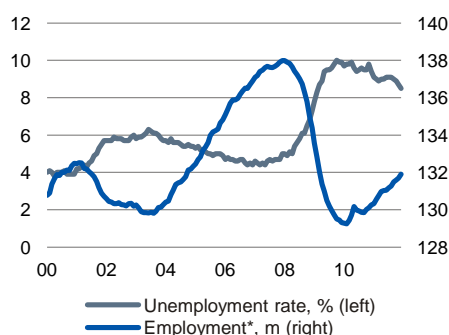
The US auto market is on the path to recovery and offers excellent short and medium-term growth opportunities, which we analyse below. In this analysis, we shall elaborate on the opportunities of German producers and investigate the potential of diesel and hybrid technologies. Our focus will be on light vehicles (LV), which consist of the sub-segments of passenger cars and light trucks; a large share of the latter is also used for private purposes in the US.

Mixed signals for US car business

The economic signals for the US car market are mixed. True, overall economic conditions in the US are better than in Europe. Real GDP should, however, increase by “only” 2.5% in 2012 (see chart 1). According to our current forecast, private consumption will rise by just above 2%. There are several reasons for these growth rates which are relatively low by American standards: the unemployment rate has now been above 8% for almost 3 years already, and employment figures are roughly 6 m lower than their pre-crisis level (see chart 2). Both numbers have improved over the last few months, but there has certainly been no breakthrough. Consumer confidence remains at a low level – despite improving recently (see chart 3).

US labour market picking up only slowly

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* Excl. agriculture.

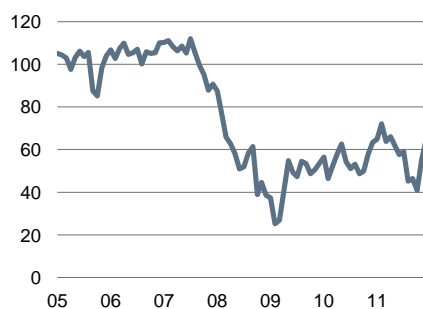
Source: US Department of Labor

The stabilisation of the US housing market is clearly a positive factor. The pressure on households to deleverage has eased. Consumption is strongly affected by the development of US savings behaviour. After rising significantly during the crisis, the savings ratio has continued to trend downward lately (see chart 4). This is likely to have boosted US car sales in the short term, as the 2011 results indicate (see below), but in the medium term, a return to “old consumption patterns” by US consumers with rising household indebtedness would harbour substantial risks for the economy, for example in case of rising interest rates. Another positive development is that corporate investment activity in the US will rise more strongly in 2012 than in 2011 (+8% vs. +4%). This is of major importance for unit car sales as in 2011, for example, almost 45% of passenger cars were sold to business clients. All in all, the overall economic situation constitutes a moderate driver (at best) for the US auto sector.

Consumer confidence mixed

3

US consumer confidence, 1985=100



Source: Conference Board

Low sales – large backlog demand

US car sales are at a low level in absolute terms (long-term comparison). True, unit sales of light vehicles were up 11% in 2010 and rose by roughly 10% in 2011. However, this falls a long way short of compensating for the slumps in new car sales in the second half of the last decade. For in 2009, the year with the lowest LV sales in the US since 1982, unit sales were nearly 39% lower than in 2005 (see chart 5). In absolute terms, the 2011 LV sales volume – after two years of growth – was still a good 4 m units below the volumes registered at the beginning of the last decade (more vehicles than those sold in Germany per year). On the one hand, the figures illustrate the scale of the crisis in the US car market (see text box). On the other, they signal an enormous backlog demand, for the current sales figures are far lower than the theoretical replacement demand of 16-17 million light vehicles.

Output has yet to stage a recovery

As a consequence of the crisis, the domestic production of light vehicles declined as well (see chart 7). True, unit LV output in the US had already reached its peak back in 1999. But during the first half of the last decade the absolute level was always high, even though in the same period there was a

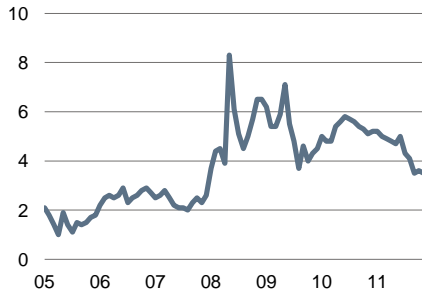


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US savings ratio declines again

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Household savings ratio, % of disposable income



Source: Bureau of Economic Analysis

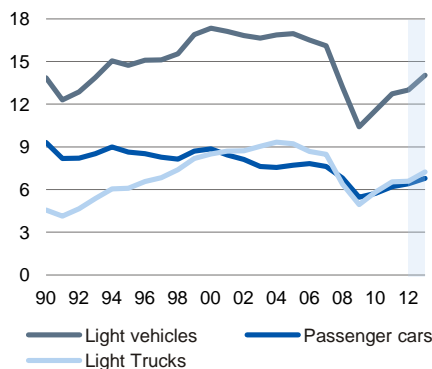
shift from passenger cars to light trucks – which also applied to unit sales. 2006 saw the start of sector contraction, which accelerated massively in 2008 and 2009. All in all, passenger car production fell 48% between 2005 and 2009; in the same period, light truck sales declined by 54%. Among the world's major auto markets, the US market was the only one in which sizeable production capacities were removed from the market in the wake of the 2008/09 recession. This applied above all to the factories of US automakers (see text box).

In 2010 LV production in the US returned to a growth path, rising by more than 36%. Light Truck production (+47%) grew faster than that of passenger cars (+22%). In 2011 as well, the output of light trucks rose more strongly (+12%) than that of passenger cars (+8%). Thus, a total of 10% more light vehicles left assembly lines in 2011 than in 2010. In absolute terms, however, this is still over 3 m units less than in the middle of the last decade. Thus, there is still plenty of room to the upside here as well.

On an upward trend again

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Unit sales in the US car market, m



Sources: Bureau of Economic Analysis, DB Research

The crisis of the US car industry in retrospect

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The crisis in the US car market was above all a crisis of the US car industry (the "Big Three"). Its historic scale calls for an analysis of the causes. In our opinion, this analysis must start by taking a look at the situation more than ten years ago. In the course of the 1990s and in 2000 unit sales of light vehicles rose almost constantly in the US. It was the time of cheap oil. During this period, the share of light trucks with above-average fuel consumption in total unit LV sales rose from roughly one-third (in 1990) to almost 50% in 2000.

The continuing upswing led to high unit sales at the beginning of the last decade. In 2001 US car business reached its peak; a usual cyclical downswing was ahead. The first event leading to the later crisis of the sector was the September 11 terrorist attacks. They prompted the US car industry to massively expand their rebates to keep unit sales figures at a high level. This rebate policy led to the hitherto best sales result in the history of the US car market in October 2001. Instead of accepting a normal cyclical slowdown, the Big Three above all started to force their vehicles into the market with high rebates. Evidently, it was cheaper (at least in the short term) to provide rebates on sales than to adjust production to weaker demand. The rebate war continued for several years, and foreign companies followed suit – albeit to a lesser extent. Thus, unit sales were kept at an artificially high level for years and years. The fact that the US housing market also flourished and steadily rising house prices tempted consumers to buy new cars favoured this development.

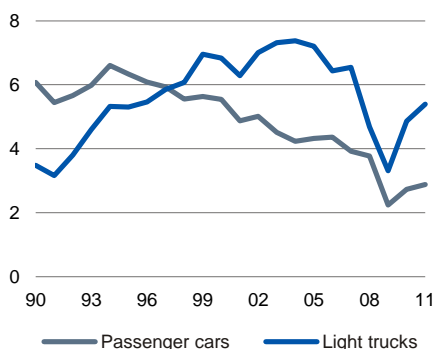
The first problems reflected in the statistics emerged when petrol prices began to rise in the middle of the last decade. Customers' reaction was weaker demand for the previously cherished light trucks in which the Big Three had specialised (see charts 5 and 8). These vehicles could hardly be exported, due among other things to their high fuel consumption and gearing towards the large US market; the export ratio of the US automotive industry for light vehicles is only roughly 20% (Germany: 77% for passenger cars in 2011), with more than 50% of LV exports being accounted for by Canada. In the following period, the rebate war was further intensified. In addition to rising oil prices suddenly rendering its model policy misguided, the US car industry also suffered from the fact that its staff costs were considerably higher than those of the factories of their Japanese or German competitors. This was due to their staff being older on average and therefore more expensive as well as higher healthcare and pension costs (also for retired workers); at times, total staff costs of US producers per employee were more than 50% higher than those of competitors, which weighed on the competitiveness of the Big Three even more. In the last decade, the market share of Asian and German suppliers rose almost constantly and in 2008 for the first time exceeded the 50% mark; US demand for imported cars suffered considerably less (see chart 10).

When against the backdrop of the breakdown of the US real estate market and the bankruptcy of Lehman Brothers the financing terms for consumer durables deteriorated, the US car market collapsed. Government subsidies were required to rescue certain companies. It was not until then that production was cut considerably, together with plant closures and layoffs (healthcare costs had already been cut before): from 2007 to 2009, employment in the US automotive industry dropped by almost one-third. In this period alone, unit LV production dropped by 47% (see main text).

Still a long way below former highs

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Car production in the US, m



Sources: Ward's Communications

In 2012, the US car market will continue to expand, albeit at a slower pace

We do indeed expect the US market to continue to grow in 2012. The above-mentioned, albeit moderate stimuli from the overall economy together with replacement needs (the average age of cars in the US is close to 10 years) should lead to an increase in light vehicle sales of roughly 2%. Passenger cars could fare slightly better than light trucks on account of high oil and fuel prices as well as new, high-volume models. Nevertheless, US consumers were hardly

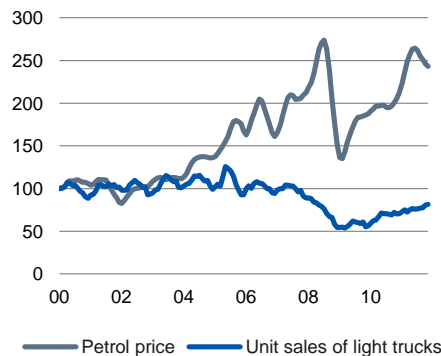


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Petrol prices have an influence on sales of light trucks

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Jan 2000=100, smoothed

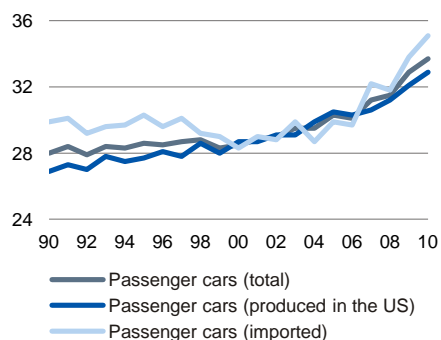


Sources: Department of Energy, Bureau of Economic Analysis

Efficiency rising, imported vehicles more economical

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Fuel consumption, miles per gallon

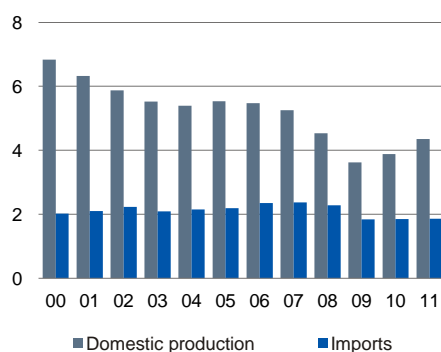


Source: Bureau of Transportation Statistics

Passenger car imports relatively stable

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Passenger car sales in the US by origin



Source: Bureau of Economic Analysis

put off by high oil prices in the last two years, for light truck sales recovered quickly. Domestic LV production should increase at a similar rate in 2012.

In 2013, the growth rate should accelerate again. According to our forecast, the overall economic conditions in the US will be improving then. The deleveraging process of US consumers should have progressed by that time. And the situation in the real estate market could continue to ease in 2013. This is supplemented by the fact that the product pipeline will remain well-filled in 2013. Last but not least, replacement needs will increase in the next few years, since cars that were sold during the economic boom at the start of the previous decade are gradually reaching the end of their average lifetimes. For example, in 2009 (newer figures are not available) a good 40% of all passenger cars on US roads were at least ten years old; as we mentioned above, the average age was 9.6 years. Taken altogether, both unit sales and production of light vehicles are likely to increase at a high single-digit growth rate in 2013.

Return to previous peaks likely

In the medium term, the US car market should gradually return to pre-crisis levels. This applies to production and even more to sales. The market is benefiting from some long-term intact trends: here, the rising population figure plays a part, which is due, among other things, to immigration, but not exclusively. In the year 2030, the US population should according to UN forecasts be around 50 m higher than in 2010; in Germany, the population figure will decline by roughly 3 m. In addition, the US has a young population for an industrial country. 50% of the US population were under 37 years old in 2010. This so-called median age is above 44 years in Germany.

The demographic development also has an impact on the economic strength of the USA. The potential annual growth of the US economy is above 2%. This is added to by the fact that the car plays a very important role in everyday US life. This has cultural reasons but is also due to the fact that in many urban centres of the US – last but not least, during the boom of the US housing market – strongly expanded their physical footprint; but in most cases there are no public transport systems. As a result, according to the US Department of Transportation, roughly 90% of employees use their own car to get to their workplace. Railways hardly play any part in longer-distance journeys; for example, there are no high-speed connections between the large cities. Thus, traffic infrastructure in the US has been heavily geared towards the car to date. A quick turnaround is unlikely, as the development of the required alternatives is very cost-intensive.

US an attractive production location for automakers

LV output in the US is also likely to increase further in the medium term. On the one hand, Japanese and more and more German and Korean car companies are now supplying the market with vehicles made at production facilities in the US (see below). And on the other hand, US manufacturers have a chance – following the painful adaptation period – of achieving a lasting increase in output by boosting productivity and supplying innovative models.

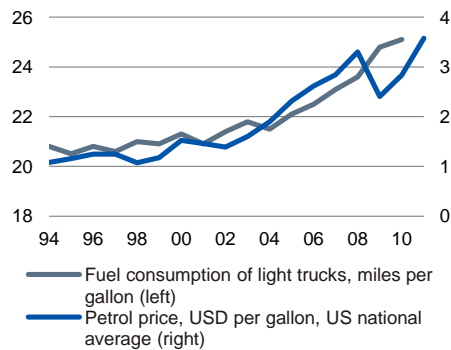
All in all, LV sales in the US could reach the pre-crisis level in four to six years and – above all due to the population development – grow further in the longer term. The positive development will probably not follow a linear path, however. The risks facing the US car market on the way back to its previous size are considerable: they are related, among other things, to consumer behaviour when it comes to vehicle financing, the medium-term effect of government debt on the US economy and the development of oil prices. It could take some time



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Petrol price driving force for energy efficiency

Fuel consumption and petrol price, US



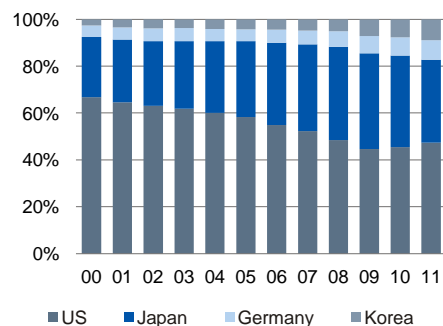
Sources: Department of Energy, Bureau of Transportation Statistics

for LV production to return to earlier peaks because US manufacturers are likely to proceed cautiously with regard to establishing new capacities.

Currently, it is difficult to assess whether light trucks or passenger cars will fare better. On the one hand, rising oil prices suggest higher sales of passenger cars. Furthermore, a market for small cars is gradually developing in the US. On the other, light trucks continue to be very popular, as the latest sales figures show. Here, it plays a part that many vehicles classified as light trucks (also by German producers) are closer in size to passenger cars than traditional pickups. In addition, their energy efficiency in the last few years – almost in step with the development of fuel prices – rose steadily (between 2005 and 2010 by close to 14%, see chart 11). Increasingly stringent fuel consumption standards in the US (Corporate Average Fuel Economy, CAFE), rising oil prices and technological progress are ensuring that this trend continues. Alternative propulsion technologies and fuels will also play a part (see below). The development of the market share of passenger cars compared with light trucks will always depend on a large number of parameters which, besides the aspects mentioned above also include model cycles and rebates as well as government regulations of the sector.

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US producers stop downward trend

Share of car producers in sales of light vehicles by country of origin



Sources: VDA, DB Research

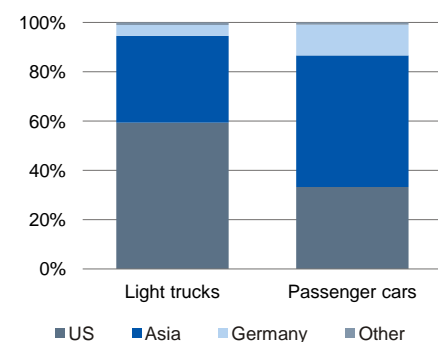
German carmakers well positioned in the USA

The German car industry can look back on a record of success in the US car market. Its market share of unit light vehicle sales rose almost continuously in the last few years. In 2011, it topped 8%; in 2005 the share was only 5% (see chart 12). Traditionally, the strengths of German car manufacturers have been in the passenger car segment – and at the luxury end of this segment. In the passenger car segment, their market share was 12% in 2011. But in the light truck segment as well, the domain of the Big Three with a share of close to 60% (see chart 13), the market share of German suppliers trended upwards in the last few years and amounted to more than 4% in 2011.

The major reason is that German cars are among the world leaders with regard to quality, safety, design, reliability and efficiency. In addition, the image of German brands is good in the US, as US consumer surveys show at regular intervals. The business development is also being supported by the fact that German car producers have expanded their production capacities in the US in the last few years and are also planning to do so in future. In 2011, one-third of German-branded cars sold in the US came from local factories – and this share is rising. By pursuing this strategy, German companies reduce their exchange-rate risks, logistics and transport costs, as well as import duties. In addition, customer acceptance rises thanks to local manufacturing. As the factories of German automakers were planned as greenfield projects they could be designed to fit perfectly with the envisaged production processes. Furthermore, personnel costs are below the average of the sector because the factories – and thus the length of employment of employees – are still relatively young. Both aspects suggest a potentially high productivity and profitability.

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Suppliers with different focus in the US market

Shares in car sales by car segment and origin of producers, 2011



Source: VDA

Shifts in market shares

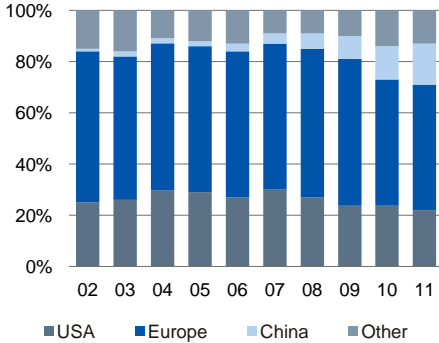
It is not only German suppliers that have set their sights on the US car market. Japanese companies have been positioned in the US with their own plants for a long time. In the last decade, their market share of unit LV sales rose from just below 26% (2000) to over 40% (2009) and came close to the share of the Big Three; in the passenger car segment the Japanese are already the leaders. In 2010 and 2011, the Japanese producers had to swallow market share losses, however. Among the reasons were temporary image problems of a major Japanese brand due to alleged safety problems. In 2011, this was added to by supply difficulties as a result of the tsunami disaster in Japan, which affected the



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US large market in the luxury segment 14

Unit sales of luxury cars by region and country, shares



Sources: Deutsche Bank Markets Research, company data

supply chain of Japanese producers above all; against this backdrop, US manufacturers were able to recover (see chart 12). Unlike in Europe, Japanese companies in the US are very important competitors in the market for luxury automobiles; the US is the world's largest single market in this segment (see chart 14). Lately, Korean manufacturers have posted particularly dynamic growth. Whereas in 2000 their market share was only 2.7%, they almost reached the 9% mark in 2011, thus outdoing German automakers. They benefit mainly from the high price competitiveness of their products, progress with regard to quality and design and lately also from the supply problems of their Japanese competitors.

Market share of German suppliers may rise further – fierce competition above all in the volume segment

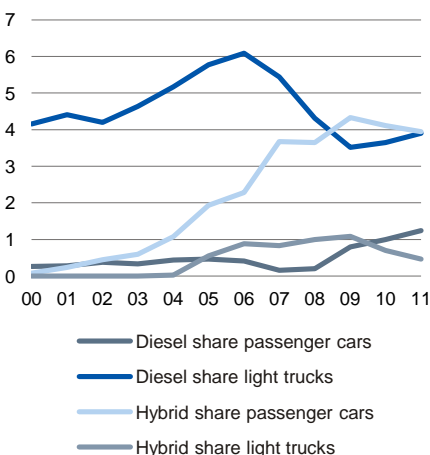
By the middle of the current decade, German producers could increase their market share in unit LV sales to roughly 10%. The major driver should remain the strong popularity of German cars; for this reason it is extremely important that reputational damage to the brands is avoided. Major impetus also comes from the expansion of production in the US. Latest figures already show that the sale of cars produced in the US by German manufacturers is growing faster than imports from Germany. The share of vehicles produced overseas in total sales of German carmakers will continue to rise. Nevertheless, the US remains an important market for exports from Germany; in 2011, the US ranked third among the most important countries for German passenger car exports. A market share of 10% in four to five years would mean potential sales of more than 1.6 m light vehicles, i.e. roughly 60% more than in 2011.

In the luxury and expensive light truck (off-road vehicle) segments, German producers should at least be able to maintain their pole position. A great challenge for them will be to assert themselves also in the volume segment (medium and compact class) versus the traditionally strong Japanese car manufacturers, the Korean newcomers and the reinvigorated US carmakers in the long term. Here, competition will, no doubt, be fierce especially as the global car industry is marked by structural overcapacities anyway.

Alternative propulsion technologies and fuels: more variety in the US market on the horizon

Diesel and hybrid neck-and-neck 15

Market share of various fuels and propulsion technologies in US sales, %



Source: VDA

With regard to propulsion technologies and fuels, structural change is on the cards in the US. German automakers might benefit here as well. In the US car market, petrol has traditionally been the most important fuel. Lately, the importance of biofuels (for blending with petrol) has risen rapidly, however. For example, E85 fuel (with a bioethanol blending ratio of 85%) is widely used in the US. The market for flexible fuel vehicles, which can use E85 and other blendings of petrol and bioethanol but also pure petrol, is large (roughly 9% share in 2010 sales). As in this sector engine technology does not differ considerably from models with petrol engines, however, we shall mainly touch on the prospects of diesel and hybrid cars.

The US was one of the first markets where hybrid cars have achieved sizeable unit sales – also due in part to tax incentives. In the last few years, their share in sales in the passenger car segment was roughly 4% (see chart 15). Hybrid cars are particularly attractive for customers in urban centres, for there they score better with regard to consumption than their petrol-powered counterparts. As far as light trucks are concerned, hybrid cars do not play a major role yet.

Unlike hybrids, diesel-powered passenger cars – which have a market share of around 50% in Europe – were absolute rarities in the US until the end of the last decade. This was due to the fact that US regulation primarily focused on vehicle



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pollutant emissions; on this criterion diesel passenger cars do worse than petrol-driven cars. Conversely, energy efficiency and CO₂ emissions – where diesel has advantages over petrol – did not play a large role. Fuels were cheap for years and years anyway, so efficiency was not so important. In addition, the quality of diesel fuel was not good enough for modern diesel engines. Due to low demand, there were only few filling stations with high-quality diesel fuel on offer. Finally, diesel was associated with heavy trucks by many consumers.

Breakthrough for diesel passenger cars ahead?

Many of the parameters mentioned above have changed in the meantime. CAFE standards (see chart 16) will require automakers to increase the energy efficiency of their vehicles; in the event of non-compliance, fines can be imposed. Fuel prices are high and will stay high in the long term. This makes consumption-optimised diesel passenger cars attractive. The long distances driven in the US make diesel cars ideal for many customers; average annual mileage per car is roughly 16,000 km (in Germany it is 12,000 km for petrol-driven models). This is added to by the fact that modern diesel passenger cars (those built by German producers for instance) meet all US emission standards. The filling station infrastructure was also expanded in the last few years. And the image of diesel passenger cars has improved considerably; in both 2009 and 2010, for example, a diesel passenger car was chosen as “Green Car of the Year”.

The market share of diesel cars in unit passenger car sales increased strongly in the US from 0.2% (2008) to 1.2% (2011), with German producers having a market share of 100%. This is still a niche. But the signs are that diesel passenger cars are set to become more important in the long term. The market share of diesel passenger cars could rise to 3% by 2015. As far as light trucks are concerned, where diesel vehicles have played a certain role for quite some time, an increase to about 8% is possible. In both segments, German automakers are likely to benefit, for it is their technological domain and the product pipeline is well filled.

Hybrid cars also gaining importance

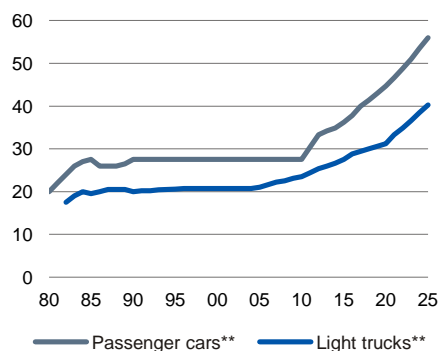
The share of hybrid cars will also rise in the coming years. A major driver is the fact that almost all large companies are betting on hybrid technology and will strongly expand their supply. Even for light trucks, where hybrids have hardly played a part to date, an increase is on the cards. Rising petrol prices and the CAFE standards mentioned above are important selling arguments, especially for clients who use their cars primarily in town. By the middle of the decade, hybrid cars could increase their share in unit passenger car sales to 7-8%; the increase in the light truck segment is likely to be less pronounced. It is well known that Japanese suppliers are particularly strong on hybrid technology, but German companies will also bring more and more hybrid models on the market. Pure electric cars will also remain a niche product in the US, primarily due to the high costs for the time being, although they are strongly subsidised there. In the longer term (roughly from 2020), they could also be an important additional option, though – if costs decline.

The above-mentioned estimates regarding market share are subject to various risks. These include the development of oil and petrol prices (see chart 17), the pace of technological progress as well as regulatory measures (e.g. subsidies for certain car types, changes with regard to exhaust emission standards and efficiency standards). Currently, however, indications are that both diesel and hybrid cars in the next few years will help to raise energy efficiency in US road traffic, lower CO₂ emissions and broaden the range of propulsion technologies and types of fuel in the US; they will possibly added to by others as well (gas,

Fuel efficiency of vehicles to be constantly increased

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Targets* for vehicle fuel consumption, miles per gallon



* From 2017, so far only proposed.

** Averages for respective segments. Within segments, differentiated targets depending on the size of the vehicle.

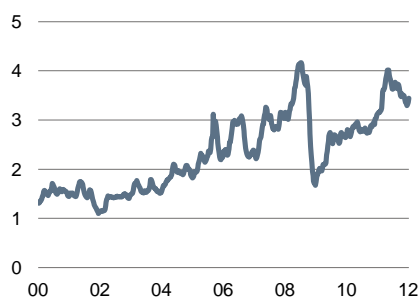
Sample calculation: 40 miles per gallon is equivalent to fuel consumption of 5.88 litres per 100 km.

Sources: Environmental Protection Agency, National Highway Traffic Safety Administration

Petrol prices declining at high level

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Petrol price, USD per gallon, US national average



Source: Department of Energy



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fuel cell). This variety is a big challenge for car producers as it ties up an enormous degree of R&D and management capacities. However, it also offers the chance to outdo competitors with innovative products.

Conclusion

The US car market is recovering from its deep crisis. Unit sales and production are likely to increase further in 2012 und 2013. In the medium term, previous record levels will be reached again or even exceeded. German producers should benefit from this development. Their market share in light vehicle sales will grow further. This is due to the attractive product range and the bolstering of production facilities in the US. Diesel and hybrid vehicles will expand their market shares in the US over the next few years. Growth in the diesel market in particular would benefit German companies.

Eric Heymann (+49 69 910-31730, eric.heyman@db.com)

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