

BAYERISCHE MOTOREN WERKE

"AUTOMOBILES"

STUDENT: TIM OTTO

COMPANY REPORT

07.01.2013

Braving the European Cartastrophe

- **Attractive valuation:** We value BMW through a Sum of the parts DCF/FCFE method with a target price of €87 per share implying an upside potential of more than 15%.
- **Offsetting the worsening European car market:** The tightening conditions in Europe will start to hurt premium manufacturers like BMW. Nevertheless, the company appears to be well prepared to weather some headwinds.
- **Pricing matters:** Along with lower sales volumes in Europe, pricing seems to be still a problem. Especially BMW started to offer significant discounts.
- **Model portfolio at its sweet spot:** BMW has currently its youngest model ever which should further support the achievement of high sales volumes.
- **Technology will pay off in the future:** 2013 is the year of the "i3", the company's first full electronic vehicle. Though sales figures could fall short in the beginning, it should be starting point of the new mobility age.

Company description

Bavarian based BMW Group is the world's leading manufacturer of premium light vehicles. In addition, it produces motorcycles and offers financial services to customers and dealers. Premium light vehicle brands include BMW, Mini and Rolls Royce whereas the motorcycle brands consist of BMW Motorcycle and Husqvarna. The BMW Group operates worldwide and has currently 17 production facilities in six countries.

Recommendation: BUY

Price Target FY13: 87.00 €

Price (as of 7-Jan-13) 75.56 €

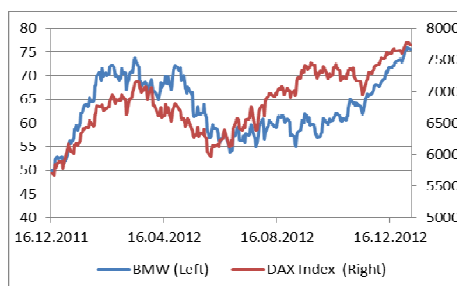
Reuters: BMWG, Bloomberg: BMW GR

52-week range (€) 48,52-75,72

Market Cap (€m) 48,327.48

Outstanding Shares (m) 655

Source: Bloomberg



Source: Bloomberg

(Values in € millions)	2011	2012E	2013F
Revenues	68.821	75.387	79.898
EBITDA	15.442	16.010	16.932
EBIT	8.018	8.033	8.393
EBIT Margin	11,7%	10,6%	10,50%
Net Income	4.907	5.113	5.455
EPS	7,49	7,81	8,33

Source: Company Data; Analysts Estimates

THIS REPORT WAS PREPARED BY "TIM OTTO", A MASTERS IN FINANCE STUDENT OF THE NOVA SCHOOL OF BUSINESS AND ECONOMICS, EXCLUSIVELY FOR ACADEMIC PURPOSES. THIS REPORT WAS SUPERVISED BY ROSÁRIO ANDRÉ WHO REVIEWED THE VALUATION METHODOLOGY AND THE FINANCIAL MODEL. (SEE DISCLOSURES AND DISCLAIMERS AT END OF DOCUMENT)

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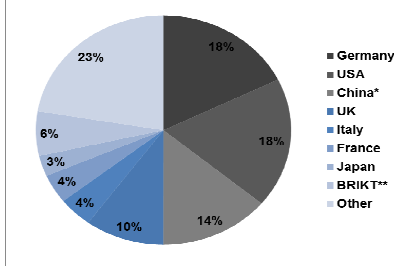
Company overview

Company description

Bayerische Motoren Werke Aktiengesellschaft (BMW) is a premium automobile manufacturer based in Munich. The product portfolio of the company comprises premium cars and bikes. BMW offers them under international premium brands, namely, BMW, Rolls-Royce and Mini in more than 150 countries across the world. It also offers general financial services to its dealers and customers. In 2011, the BMW Group reported revenues of €68,821 billion and is expected to report an increase in revenues by some 10% for 2012.

The company operates through three different business segments, namely, Automotive, Motorcycles and Financial Services.

Figure1: Car sales by market 2011

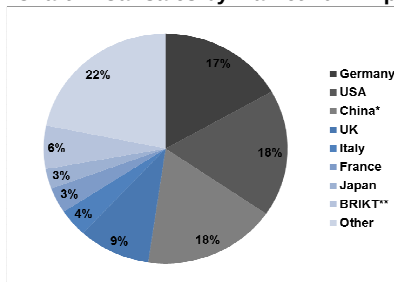


Source: Company Data

*Includes JV sales

**Brasil, Russia, Indonesia, S. Korea, Turkey

Chart 2: Car sales by market 2012Exp.



Source: Company Data, Analyst estimates

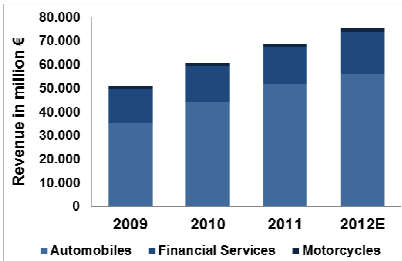
The company's core business, the **Automotive segment**, develops, manufactures and sells premium cars and suburban vehicles (SUV). In 2011, the BMW Group sold nearly 1,69 million vehicles worldwide. In 2012, the company is expected to defend its position as the world's best-selling premium car manufacturer with unit sales of around 1,8 million vehicles. BMW sells its products in a number of markets being Germany, USA and China the most important ones. In 2012, the company sold in Germany just short of 300.000 vehicles while the USA and China accounted for more than 600.000 vehicles. These three markets therefore represent approximately 50% of the Group's unit sales. The three brands under which these vehicles are sold are BMW, MINI and Rolls Royce. The Group's core brand BMW has the highest unit sales with expected 1.500.000 vehicles sold in 2012 (1.380.384 in 2011), followed by the MINI brand with about 300.000 unit sales (285.060 in 2011) and Rolls Royce with about 4.000 unit sales (3.538 in 2011). In 2011, the automotive segment contributed around €51,5 billion¹ to the Group's revenue while we expect this figure to increase by some 8% to around €55,6 billion for 2012.

The **Motorcycles segment** of BMW develops, manufactures and sells BMW and Husqvarna brand motorcycles. In 2011, the company produced 118,865 motorcycles, including 110,360 units of BMW branded motorcycles and 8,505 units of Husqvarna branded motorcycles. In 2011, it sold 113,572 motorcycles, consisting of 104,286 BMW branded motorcycles and 9,286 Husqvarna motorcycles. For 2012, sales of BMW branded motorcycles are expected to stay at the previous year's level while Husqvarna motorcycles sales are likely to increase around 10%. The most important markets in this segment are Germany,

¹ All presented segment results are net of intragroup transactions.

Italy and USA, accounting for more than 42% of the unit sales. The segment's revenue contribution in 2011 amounted to €1,427 billion and is assumed to increase to €1,490 billion for 2012.

Figure 3: Revenue breakdown (in mn. €)

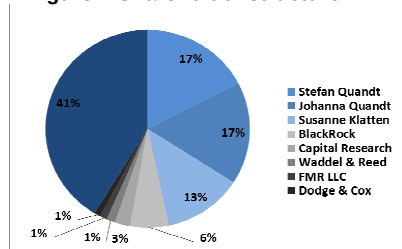


Source: Company Data, Analyst estimates

The Group's **Financial Services segment** comprises customer deposit business, retail customer and dealer financing, insurance activities, fleet business and car leasing where credit financing and the leasing of BMW, MINI and Rolls Royce brand cars and motorcycles to retail customers represent the largest line of business. In July 2011, the company purchased ING Car Lease Group, through which the company enhanced its leasing and fleet management contracts. At the end of 2011, the segment was managing a portfolio of 3,592,093 lease and credit financing contracts with retail customers and dealers. For 2012, we expect to observe a growth of around 5% in the contract portfolio. For 2011, the Financial Services segment reported revenue of €15,8 billion while we expect an double digit growth for 2012.

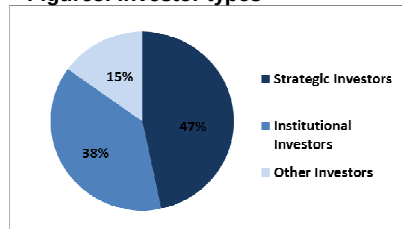
Shareholder structure

Figure4: Shareholder structure



Source: Company Data, Bloomberg

Figure5: Investor types



Source: Company Data

The BMW Group has 655.566.568 shares outstanding (as of 30th September 2012) with a par value of €1 per share. The company's shareholder structure, which has not changed meaningfully over the last years, is dominated by the founder family Quandt. Johanna Quandt and her two children Stefan Quandt and Susanne Klatten hold approximately 47% of the share capital translating into the same amount of voting rights. Subsequent shareholders are BlackRock (6,05%), Capital Research (2,45%), Waddel & Reed Financial Inc. (1,39%), FMR LLC (1,09%) and Dodge & Cox (1,06%).

In addition, Stefan Quandt is also Deputy Chairman of the Supervisory board and Susanne Klatten is a director of the supervisory board. As a result, BMW is not driven by decisions to achieve short term returns to please their shareholders but rather to ensure the realization of a solid long term strategy. BMW's remuneration policy is geared towards long-term sustainable performance, through a share-based incentive scheme for top-management. In our view, there is a good alignment of management and shareholder interests. On the other hand, the substantial share ownership allows the Quandt family to block major decisions, keeping the company's management dependent on the family's agenda.

Automobile Sector

Sector Description

The Automobile industry is an important driver of global growth, employment and innovation. Especially the European car sector is of high importance as it is the world's largest vehicle producer, accounting for approximately one quarter of global vehicle production. Furthermore, the industry it is an important employer as about 12 million employments in Europe are directly linked to the automobile sector.²

The automobile sector, leaving the suppliers a part, can be roughly divided into two different segments, the volume manufacturers and premium car manufactures. Volume manufacturers like Fiat, PSA, Renault, Volkswagen and Toyota rely on high production of smaller and low-priced cars and therefore achieving usually smaller margins. These companies derive their profits through economies of scale and high capacity utilization. Nevertheless, European volume market manufactures are more exposed to cyclicalities than premium car makers and are facing more pressure from pricing and declining capacity utilization as almost all of their revenue streams come from Europe. Premium OEMs, in turn, operate in the more profitable mid and large-sized segments and hence achieve higher margins. Their main challenge is to comply with the strict CO₂ regulations which make high R&D investments in lower emission engines necessary. Premium car makers are either subsidiaries of volume manufacturers like Audi, Porsche, Lamborghini, Bentley (all Volkswagen), Ferrari, Maserati (Fiat), Lexus (Toyota), Jaguar, Landrover (Tata Motors) or individual companies like BMW and Mercedes-Benz³.

One of the main earnings drivers in this industry is the volume of unit sales. Consecutively, car production and sales are fairly linked to macroeconomic developments such as GDP growth, consumer confidence, unemployment. The second important driver is pricing. The price of the cars is dependent on several factors. First of all, it depends on the current demand in the market. If the sales volume is lower than expected, car manufacturers launch purchase incentives and rebates to meet their sales targets. Another component of the price is the lifecycle of a certain model. A model which will be replaced in the near term by its next generation model will be offered at a discount to ensure a smooth

² According to ACEA (2012).

³ Mercedes-Benz's parent company Daimler AG is not considered as mass manufacturer.

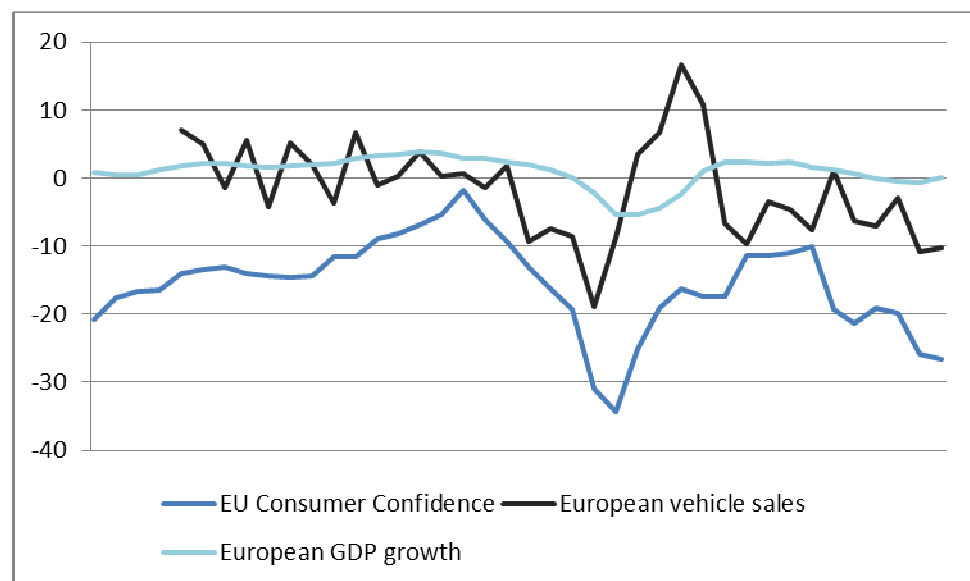
changeover. This fact already indicates the importance of another factor which is the model mix and model age as new models typically achieve higher unit sales and better prices.

Foreign exchange rates and raw material prices are two other important factors affecting the automotive industry. Most of the car manufacturers are operating globally and are therefore exposed to currency risks. Nevertheless, most of the currency exposure is usually hedged through derivatives or through natural hedging, meaning the local production of vehicles rather than to import all of the cars to certain markets.

Macroeconomic Outlook

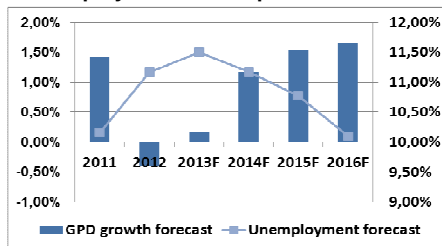
The recent years have been somewhat turbulent for most of the OEMs. As mentioned before, the sales volume of cars is fairly linked to the economic environment. Therefore, the financial crisis in 2007 and the European sovereign crisis in 2010 caused severe trouble for the industry. In order to evaluate future market developments, we identify for this report three important macroeconomic indicators to be the main drivers of car production and unit sales. In our analysis, we focus on the trends of GDP growth, unemployment and consumer confidence. These macroeconomic trends should be closely monitored in order to evaluate the automobile industry, although we are well aware of the fact that these factors might have some interdependence.

Figure 6: Consumer confidence, European vehicle sales and GDP growth in Europe from 2007 to 2012



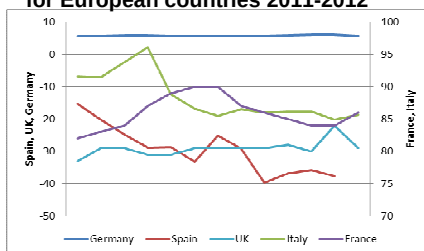
Source: Bloomberg

Figure7: Forecasts of GDP growth & Unemployment in Europe



Source: IMF

Figure8: Consumer confidence Index for European countries 2011-2012

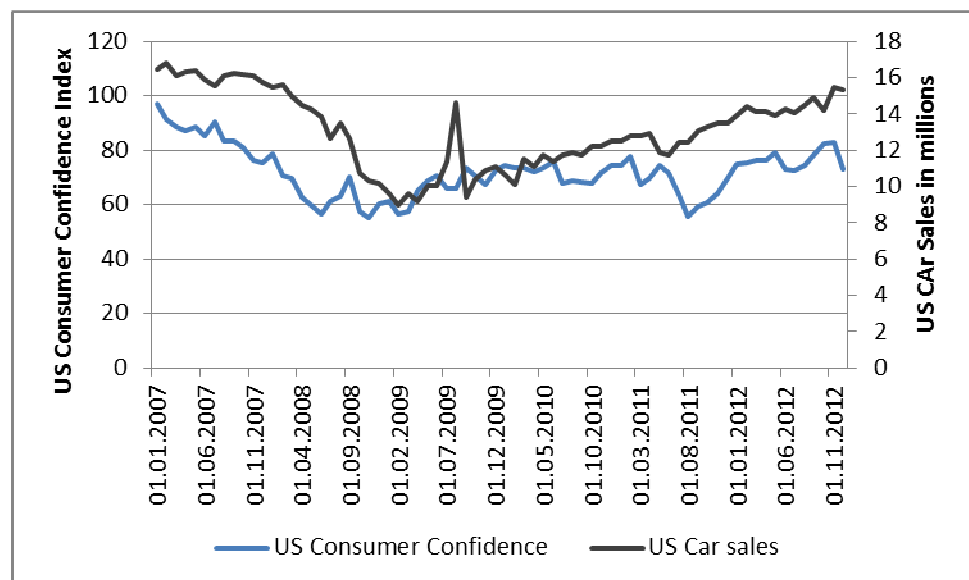


Source: Bloomberg

The mature markets show very different economic circumstances. The European malaise has different impacts on the countries. Especially the European peripheral economies are still suffering from the crisis which is well reflected in our key drivers. The unemployment rate in the Eurozone experienced a notable increase in 2012, rising from 10,1% to 10,7%. This is mainly attributable to the southern European countries, highlighting Italy, France and Spain. Italy's unemployment rate rose by 1,4% during 2012 whereas Spain's unemployment rate increased by 2,7% to 26,2% during the same period. As opposed to this, Germany and the United Kingdom were able to improve their employment rates by 0,2% and 0,4% respectively. The forecasts of unemployment do not display improvements in the near term for the Eurozone.

The consumer confidence index shows a similar trend. Especially for Spain and Italy the index trended clearly downwards. France kept approximately its consumer confidence level at the end of 2012 after having experienced a notably upside during the summer. Only the German index is indicating some growing confidence. The GDP growth for Europe shows a similar direction. The forecasted growth is about 0 for 2013 and around 1% for 2014. This coincides with our expectations about the European car market as a whole. We believe that there will not be a significant growth for the next 2 – 3 years.

Figure9: US SAAR vs. US Consumer Confidence Index



Source: Bloomberg

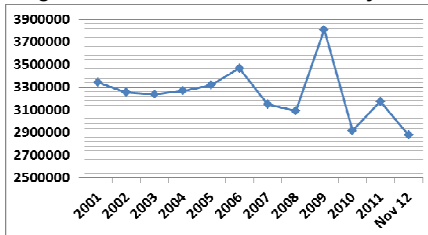
The outlook for the U.S. economy seems to be much better than in the old world. The GDP displayed a robust growth throughout the last quarters and is expected to keep that level. The American consumer confidence index performed as well quite notable in 2012 even though it is still well below pre-crisis level. Our

expectations for this market are therefore very modest in terms of possible car sales in the next periods.

Sales Development

Germany

Figure10: Vehicle sales in Germany

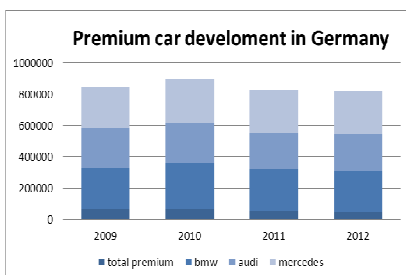


Source: KBA Germany

Despite the worsening economic environment in Europe, the German car market developed better than expected in 2012 but still got affected. Overall sales will amount to around 3,15 million units in 2012 which corresponds to a decrease of some 1,6% compared to last year but is still fairly below the 2009 sales of 3,8 million vehicles sold. The market is clearly dominated by volume manufacturers, especially by Volkswagen and its brands.

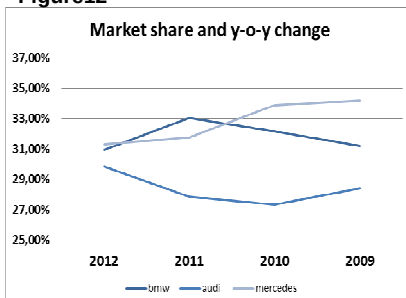
The market for premium and luxury cars, however, evolved differently. The amount of premium and luxury cars sold grew by approximately 1,7% in 2012. The amount of 915.000 (900.000 in 2011) sold premium vehicles in Germany are covered by 90% by the big three premium brands Audi, BMW and Mercedes-Benz with almost equal market share. Nonetheless, BMW had suffered a loss in market share. From 2009 on, the company could achieve an increase in market share in three consecutive years. From its peak market share of 33% in 2011, BMW reached a market share of approximately 31% in 2012. Mercedes-Benz, in contrast, was losing steadily in terms of market share over the last 4 years. Despite of being, again, the premium market leader in Germany with 31,31% of market share, the company had to observe a decline from more than 34% in 2009 to 31% in 2012. The beneficiary of this instance was clearly Audi. The Volkswagen-owned brand achieved to capture some market share of its two competitors, accounting for almost 30% of all premium cars sold in Germany.

Figure11



Source: KBA

Figure12



Source: KBA

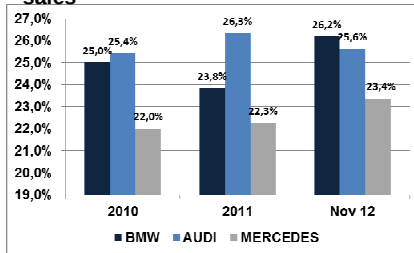
Germany is BMW's home-market and represents one of its key markets. Therefore, it is even a stronger throwback for the company to experience a decline in sale volumes and market share whereas Audi and Mercedes-Benz achieved at least a constant level in both.

It has to be noted that those figures include as well the amount of self-registrations by dealers and manufacturers. According to the Central Association of the German Automotive Industry (ZDK), approximately 30% of all new vehicles are subject to self-registration. As an amount of around 20% usually reflects a reasonable volume, the high amount of self-registrations reflects the

competitiveness of the current market environment which will probably continue in 2013.

One way to push the sales is the self-registration, either through the dealer or the manufacturer self. The reasoning behind this is that on the one hand, this controversial sales practice inflates official statistics and suggests a more pleasurable demand. On the other hand, a car which was previously registered by a dealer or manufacturer are considered as used cars and can therefore be sold at a lower price, without penalizing the official pricing levels, set by the manufacturers. The following part just focusses on the self-registrations by BMW, Audi and Mercedes-Benz, as other premium brands in Germany have very little market shares, so that the amount of self-registered vehicles is rather small.

Chart 13: Self-registration as % of sales



Source: KBA

BMW has been the most aggressive manufacturer in terms of self-registrations in 2012. In the recent years, Audi has been the premium brand that used this sales tool the most while Mercedes-Benz kept its self-registration levels always constant around 22%. In 2012, however, approximately 26% of new BMW vehicles appeared to be sold to their dealers or themselves. While this sales practice let the company to present a strong sales momentum in Germany, it creates future problems. As these cars were not actually sold to customers, the vehicle remains in the dealer's inventory, meaning that the dealer has to start with a deficit of sales target in the next period which could lead to further price discounts. Even though the manufacturers do not comment on this practice, it should be closely monitored as it probably affects the sales in the future.

The extent to which self-registrations are used to inflate market figures in other European markets is difficult to estimate, since there is no reliable information available for us. However, we see Germany as a guideline for the European market and expect as well some headwinds from this negative trend.

Considering all of the mentioned facts, we expect to observe a further downturn in the premium segment for 2013 and 2014 in Germany. While the whole car market should experience a decline of 5% and 2% respectively, the premium segment could be hurt by another decrease of 2%-3%. BMW, however, is likely to lose more market share in 2013 which should be captured by Audi and Mercedes-Benz relatively equal as seen in 2012. The amount of self-registrations should stay or in BMW's rather decrease in the next years as this high figure should not be sustainable.

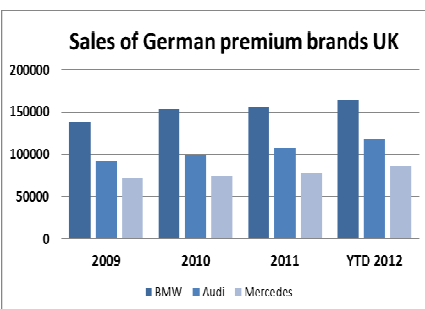
Base case	2011	2012E	2013F	2014F	2015F	2016F
German Vehicle Market	3.200.000	3.150.000	2.990.000	2.930.000	3.010.000	3.230.000
y-o-y change %		-1,6%	-5,1%	-2,0%	2,7%	7,3%
Premium Brands	900.000	915.000	890.000	880.000	900.000	920.000
y-o-y change %		1,7%	-2,7%	-1,1%	2,3%	2,2%
BMW Brand	257.094	245.000	240.000	236.000	250.000	265.000
y-o-y change %		-4,7%	-2,0%	-1,7%	5,9%	6,0%
MINI Brand	40.345	37.000	35.000	35.000	39.000	42.000
y-o-y change %		-8,3%	-5,4%	0,0%	11,4%	7,7%
Group Market Share Total	9,3%	9,0%	9,2%	9,2%	9,6%	9,5%
y-o-y change %		-3,7%	2,7%	0,6%	3,8%	-1,0%
Group Market Share Premium	33,0%	30,8%	30,9%	30,8%	32,1%	33,4%
y-o-y change %		-6,7%	0,3%	-0,3%	4,3%	3,9%

Rest of Europe

As the macroeconomic data for the United Kingdom already indicated, the market conditions have been pleasant for car manufacturers. The overall car market recorded a growth of 5,5% (-10,3% in 2011) with a sales volume of 2 million cars sold (1,8 million in 2011) and represents the highest growth in Europe and the second largest in terms of volume after Germany. The premium segment developed even better and displayed an increase of almost 10% and accounts for roughly one quarter of the market. BMW, like its main competitors, achieved to grow again its sales volume of about 6%. This is as well favoured by the fact that the UK used to be the home country of its MINI brand which is manufactured in the Oxford, Birmingham and Swindon facilities. In fact, BMW announced to invest £250 million to expand production capacities of MINI which is a signal of positive market expectations for the next periods. While BMW grew approximately with the whole car market, Audi and Mercedes-Benz sales grew even more than the premium market. The market share of the three big premium brands has been quite stable over the past years, where BMW is clearly the leader in this market. We assume that this market is less sensitive to the model mix of these brands and therefore expect do not expect a change in market share in the near term. The outlook for the premium market should remain stable in 2013 while the whole market will probably experience a slight decrease.

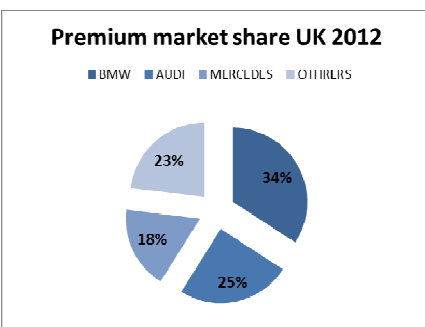
In the light of the current European malaise, the economies in the South of Europe are particularly affected. The car industry is no exception and suffered from a clear negative trend in sales volumes. We highlight especially the Italian market as a source of weakness in 2012. The market dropped by 24% to around 1,4 million vehicles sold, representing the worst sales volume for more than three decades. The market for premium cars in Italy was affected in the same manner an dropped by some 20%, BMW was felt the increase in its sales and observed

Figure15



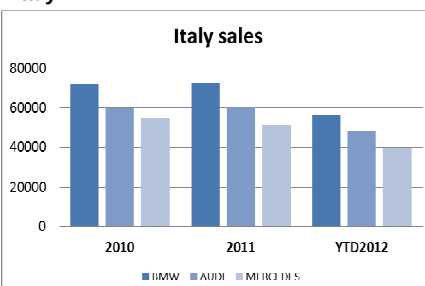
Source: Company Data

Figure 16



Source: UK transportation agency

Figure 17: German Premium sales in Italy



its sales declining linear to the premium market. We estimate 1.400.000 vehicles will be sold locally in 2013 (-2%).

The Spanish market has taken a further downturn in sales momentum most recently with the selling rate dropping to some 650.000 on average in the last 3month period. We understand that the increase in the Spanish VAT led to a further market weakening and the high unemployment rate continues to weigh on new car sales. For next year, we forecast another 4% decline to 700.000 units.

When considering the whole Euro area, we forecast a notably downturn in volumes, especially from the usually strong market Germany. We believe that there is no huge downside potential for the southern European countries as sales were already facing new record lows. Having said this, we believe that the German market is as well the one which is most likely to recover the fastest after

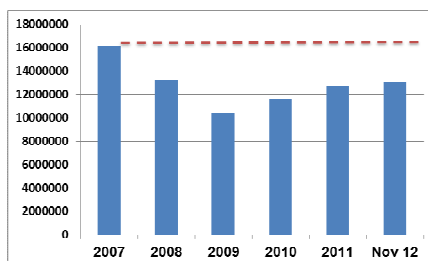
Figure 18: European Car and BMW sales forecasts; Base case

Market	2013F		2014F		2015F	
	€ Whole Market	BMW Sales	Whole Market	BMW Sales	Whole Market	BMW Sales
UK	1.950.000	141.927	1.930.500	140.508	1.988.415	143.318
Spain	700.000	25.000	686.000	24.250	720.300	25.220
Italy	1.400.000	50.000	1.372.000	48.250	1.468.040	51.145
France	1.860.000	51.000	1.804.200	49.470	1.948.536	51.944
Euro Area	11.340.000	805.000	10.943.100	772.800	11.490.255	807.576
Change in %						
UK	-2,50%	-1%	-1%	-0,50%	3%	2%
Spain	-4%	-3%	-2%	-2%	5%	4%
Italy	-2%	-3,50%	-2%	-3%	7%	6%
France	-4%	-3%	-3%	-2%	8%	5%
Euro Area	-4%	-4%	-3,50%	-2,50%	5%	4,50%

Source: Analysts Estimates

USA

Figure 19: US car sales



Source: Bloomberg

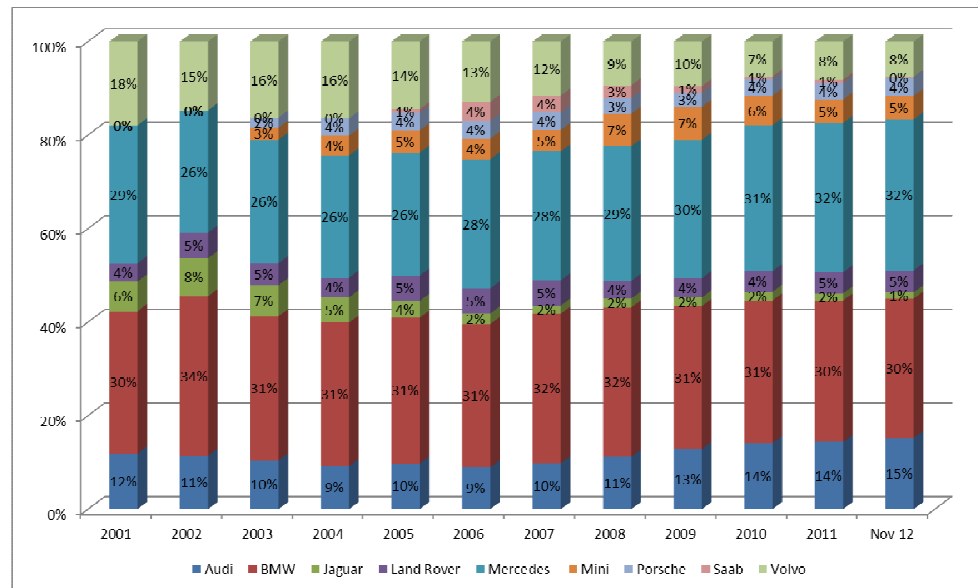
Automobile sales in the United States have developed favourably. The US car market recovered and grew faster than the overall economy in 2012. Nevertheless, there is still a lot of upside potential as the sales figure are still fairly below pre-crisis level. The overall car market increased by some 14% last year which should be mainly attributable to the moderate growth of the economy and a fair backlog of vehicle demand, created by the strong decline in car purchases during the last 4 years.

The American car market is dominated by the three local manufacturers General Motors, Ford and the Chrysler Group, as well as the two Japanese manufacturers Toyota and Nissan. Those five companies together accounted in

2012 for approximately two thirds of all vehicle sales. All German manufacturers, by contrast, captured some 8% of the market last year.

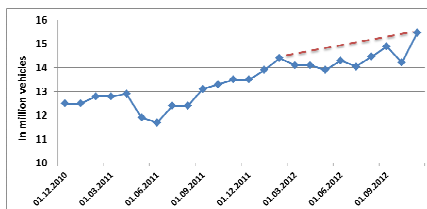
The market for premium cars developed similar with a strong increase of 12%. BMW was able to grow its sales in the US at the same rate as the premium market and became the segment leader with more than 300.000 sold units across its brands, clearly leaving Mercedes-Benz at the second place with around 250.000 sold units.

Figure 20: US premium car market share



Source: Edmunds

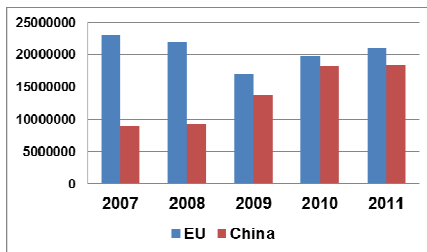
Figure 21: US SAAR development



Source: Bloomberg

The current US SAAR (seasonally adjusted annual rate) suggests sales in the vicinity of 15 million vehicles in 2013 which is in line with the observed trend. We expect the US market to further accelerate, but at a slower pace than observed in 2012. A growth of 4% to 5% seems to be reasonable whereas the premium market should continue its growth by 2%-3%. As for BMW, we do not expect to observe the same increase in sales like in 2012. The volume should rather increase linear with the premium market as we assume that the company will be able to maintain its current market share and remaining the market leader. 2014 and onwards should present a steady growth, scratching pre-crisis sale levels in the mid-term. This development should be backed by the importance of cars in the US society. This is on the hand a result of cultural habits and as well attributable to infrastructural reasons as there are, for instance, limited high-speed connections between major cities.

Figure 22: Chinese vs European car production



Source: Bloomberg

China / JV BMW Brilliance Automotive

China has become the largest car market worldwide in terms of both, production and sales during the last years. The increased production and demand of vehicles in China was triggered by China's accession to the World Trade Organization (WTO) in 2001. The world's leading car manufacturers established further joint ventures and new assembly plants as a result of China's entry to the WTO.

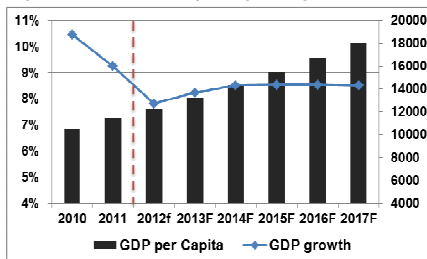
Over the last decade, several important factors have been supporting the huge increase in car production and sales. First of all, the country experienced double digit GDP growth rates and it is forecasted to achieve in the next years stable and high GDP growth rates of about 8% per year. Furthermore, disposable income for urban households experienced a CAGR of 11% from 2001 to 2011 which should have supported the flourished car market. But as well demographic and infrastructural factors have affected the industry. China experienced a fair increase in urban population which is likely to further increase in the upcoming years and to sustain the demand for vehicles. Moreover, according to the World Bank, the highway network in China improved significantly, meaning that the length of paved highway roughly tripled in the first decade of the 20th century.

The Chinese car market showed in 2012 again a tremendous growth. Despite the cooling in growth in 2011, which was mainly due to the slowing economic growth in 2011 and due to the elimination of subsidies for car purchases by the government. In 2012, after a weak start in the half of the year, the market experienced again double-digit growth rates among improving economic figures at the end of the year. The Japanese-Chinese dispute during the year led to a decline in Japanese brand sales resulting in a temporary drop of market growth. This gave German (especially Volkswagen) and Korean manufacturers the opportunity to gain some market share, mainly in the smaller vehicle segment.

For BMW, the Chinese market has been very profitable. This might be supported by the fact that BMW appears to have a strong brand reputation in China. According to Clear Asia, a Hong Kong-based brand consultancy, BMW is ranked first among 100 desired brands in China, overtaking its German peers Mercedes-Benz and Audi, but also other luxury brands like Rolex or Apple.

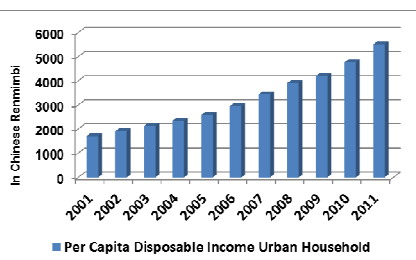
BMW is likely to report more than 300.000 unit sales of the combined brands (BMW and MINI) in China for 2012, a y-o-y growth of approximately 30%. This figure reflects both, locally produced cars (through a Joint Venture) and imported cars. The appetite for premium cars seems still not to be satisfied, meaning that we expect further growth potential premium brands like BMW. Considering a

Figure 23: Chinese GDP per Capita vs growth forecast



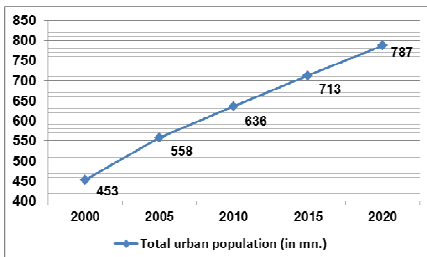
Source: IMF

Figure 24: Chinese per capita disposable income



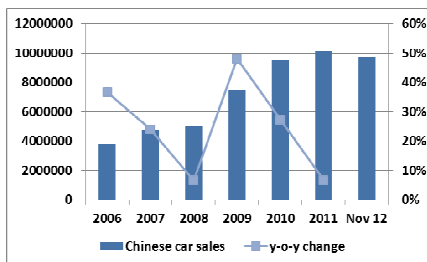
Source: Chinese national bureau of statistics

Figure 25: Chinese urban population forecast



Source: Worldbank

Figure 26: Chinese car market sales

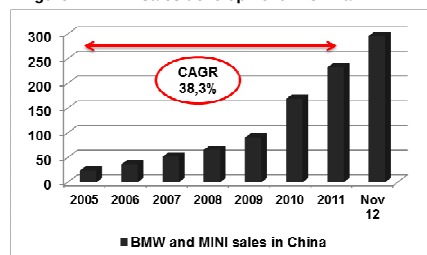


Source: Bloomberg

CAGR of around 12% for the overall Chinese car market from 2005 to 2011, BMW's combined sales reached for the same period a CAGR of approximately 38%. We understand that this figure is not sustainable but we still expect double digit growth for next periods, though at a smaller pace.

One indicator for a further increase of the car market could be the low vehicle ownership in China. Though it is in line with other emerging countries, it is still fairly below the worldwide average and even further away from other major car nations. The already mentioned continuing urbanization development and increasing disposable income of the Chinese population are other factors which should support the raising car sale figures in the near and mid-term.

Figure 27: BMW sales development in China



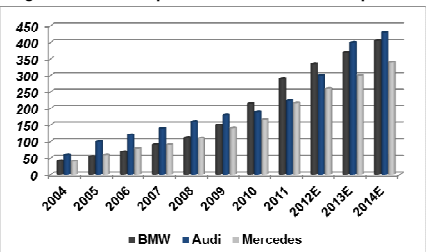
Source: Company data

Joint Venture BMW Brilliance Automotive

BMW entered into a Joint Venture (JV) in China together with Brilliance China Automotive Ltd. in 2003.

The JV has currently two plants in the country, both of which are in the city of Shenyang. The production includes currently the 3-Series and 5-Series in a long version (Sedan) which are exclusively made for the Chinese market. Additionally, the JV started to produce the X1-Series locally. Both production plants combined have a capacity 200.000 units. During 2012, the JV invested an additional amount of €500 million to further expand its production capacities. At the end of 2013, the two plants should be able to produce together 300.00 units. In the mid-term, BMW's CEO Dr. Norbert Reithofer stated that the capacity could even reach up to 400.000 units, depending on local demand.

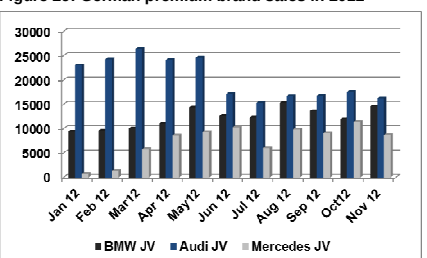
Figure 28: German premium brand network expansion



Source: Company data

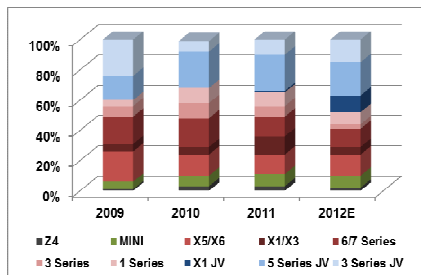
Compared to its two German competitors, BMW has the second biggest sales volume China, being Audi the clear leader. This is mainly attributable to a first mover advantage of Audi as it already entered into a JV with FAW (First Automobile Works) in 1991. The production capacity of that JV will amount to 700.000 units in the next periods, signalling the strong growth potential in the premium market that Audi sees. Mercedes-Benz entered into its JV in 2005 with BAIC (Beijing Automotive Industry Holding Company) and has only a local production capacity of 100.000 units. Mercedes-Benz clearly displays some deficits in the Chinese market. This materializes as well in the local dealer-network. While BMW dispose over 330 presences in China, Mercedes-Benz and Audi have a dealer-network of approximately 250 stores. As BMW expanded its dealer network faster, it could reach more cities, especially in the (still) less developed east china and was thus enjoying less competition.

Figure 29: German premium brand sales in 2012



Source: Bloomberg

Figure 30: BMW model mix in china



The structure of the import vs. local production is for the three German premium brands the same. The local production of the less profitable smaller cars enables the companies to share the smaller profits with its JV partner while importing larger and more profitable vehicles.

However, we expect for the near to mid-term that the competitiveness in the premium market will probably increase and therefore reduce the prices for premium brand vehicles. It is still questionable to which extend this will materialize because we believe that the manufacturers will try to protect their margins and consequently limit the downturn pricing levels.

Moreover, the sale of locally produced cars should scratch at the capacity limits of the JV. This would lead to a decreasing import ratio over the next years and ease some of BMW's earnings from China. Our assumptions and financial projections for summarized in the table below.

Figure 31: BMW JV Financial data and forecasts

In RMB 000	2009	2010	2011	2012E	2013E	2014E	2015E
Revenues	14.674.370	21.484.930	37.531.814	57.000.000	75.000.000	93.750.000	112.500.000
Operational costs	-13.963.788	-19.692.948	-34.091.288	-51.774.833,37	-68.124.781	-85.155.976	-102.187.171
EBITDA	1.227.891	2.432.927	4.771.734	7816422,387	10.472.455	13.212.175	15.976.215
EBIT	890.891	2.006.209	4.326.103	6554274,855	8.624.046	10.780.057	12.936.069
Interest	180.309	214.227	885.577	1329108,227	1.748.827	2.186.033	2.623.240
EBT	710.582	1.791.982	3.440.526	5225166,628	6.875.219	8.594.024	10.312.829
BMW's 50% share	355.291	895.991	1.720.263	2.612.583	3.437.610	4.297.012	5.156.414

Base case Source: Company data & Analysts estimates

Figure 32: JV car sales and import rate

Year	JV	Import	Total China	% Imports
2009	44.000	52.000	96.000	54%
2010	60.000	125.000	185.000	68%
2011	108.000	134.000	242.000	55%
2012E	150.000	170.000	320.000	53%
2013E	200.000	193.000	393.000	49%
2014E	250.000	209.000	459.000	46%
2015E	300.000	190.000	490.000	39%

Base case Source: Company data and analysts estimates

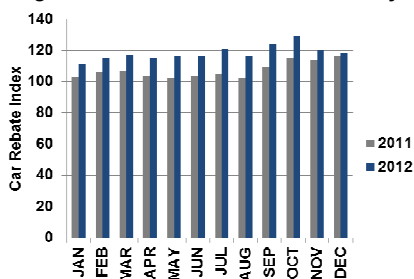
Pricing Trends

As mentioned before, the prices of the vehicles play a major in the profitability of car manufacturers and have a direct impact on earnings. The price for vehicle depends thereby on various factors. Usually, the car manufacturer sets a certain MSRP (Manufacturer Suggested Retail Price) or list-price for each of its models. But those prices often do not reflect the real price that the customer pays in the end. The effective net price that the manufacturer receives is usually the MSRP excluding the margin from its dealer. Every incentive set by the dealer is at his own cost. But there are certain circumstances, where the manufacturer entitles

the dealer to set price incentives. This could be either due to a model turnover, meaning that a new version of a model will be launched soon or because sales are evolving worse than expected and the manufacturer has to struggle with overcapacity. Nonetheless, it is difficult to estimate the real price impact for the manufacturers as these do not disclose nor quantify the dealer's margins and incentives that are supported by the company. But, we can assume that in certain volume downturns like currently in Europe, most incentives are to some extent backed up by the respective manufacturer.

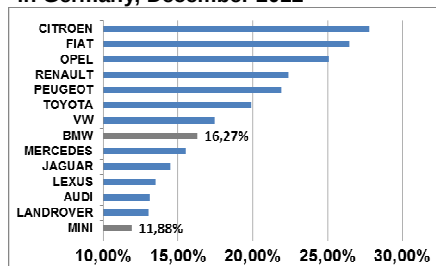
Another issue with pricing is the limitation of available data. However, there are some sources which can be used to get an impression of pricing situation. In Germany, the CAR-rebate index provided by the “Center of Automotive Research” of the University Duisburg-Essen, gathers information about average incentive schemes set by dealers and price rebates by internet retailers. Another reliable source of pricing information is the German car magazine “Auto-Motor-Sport” which gives an overview of the average rebates for different models across the different manufacturers. We are aware that internet retailers may not be the main retail channel of premium cars. Additionally, the price incentives of such online retailers might be at the upper end of the incentive range offered on the market. Nevertheless, we believe that they still serve as reasonable proxies as customers would probably not buy cars through conventional dealers if the price incentive lies at least in a comparable area. We consider Germany to be a good proxy for the European market because of its size.

Figure33: CAR Rebate Index Germany



Source: CAR – Center Automotive Research Germany

Figure 34: Average Discount by Brand in Germany, December 2012



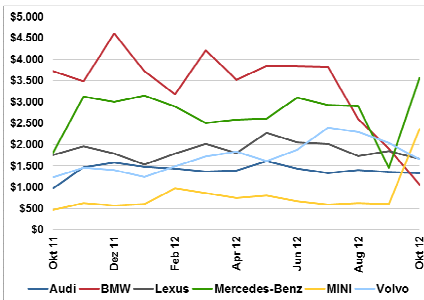
Source: Auto-Motor-Sport

Premium brands less affected by pricing pressure than European volume manufacturers

The CAR-rebate index followed in 2012 its trend from the second half of 2011 and increased throughout the year. After reaching its peak value in October 2012, the pricing situation appeared to be smoothing at the end of the year and returning almost to last year's level. The index reflects the tightening pricing situation that the car market experienced in Germany and Europe last year. If the year-end slowdown of the CAR-rebate index signals better pricing conditions for the manufacturers in 2013 is still questionable as we expect a further downturn in car sales for Europe which should translate into higher discounts again.

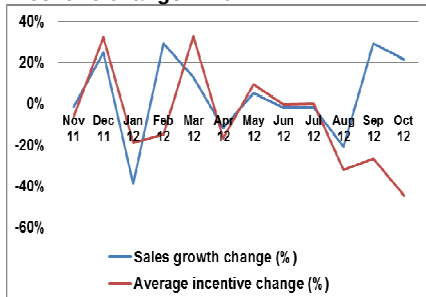
Concerning the average discount on new cars by manufacturer from December 2012, it becomes clear that European mass manufacturers were severely affected by the downturn of the European car market. In order to support the diminishing sales figures, the manufacturers were to offer huge price rebates on their new cars. The most aggressive ones have been Citroen and Fiat, offering on average more than 25% discount. Among the premium brands, BMW has been the most aggressive compared to its peers. While the MINI brand is still on a moderate pricing level with an average discount of 11,8%, the BMW brand were offered at an average discount of more than 16%. Compared to its closest

Figure35: USA average incentive costs by premium brand



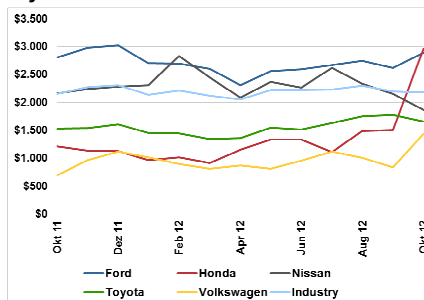
Source: Edmunds

Figure36: BMW monthly sales and incentive change in %



Source: Edmunds

Figure37: USA average incentive costs by volume brand



Source: Edmunds

peers Audi and Mercedes-Benz, which were offered on average with a discount of 13% and 15,5% respectively, the pricing situation seems to reflect the sales development in the German market, as BMW had to suffer a loss in market share.

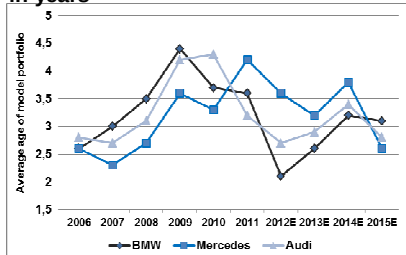
The pricing behaviour in the United States among the premium brands displayed a similar pattern like in Germany. We based our analysis on the data provided by “Edmunds”, which is the premier online resource for automotive information in the United States. “Edmunds” reports on a monthly basis the so called “True Incentive Cost” which is a definition of the manufacturers average incentive cost per retail vehicle sold in the U.S., which takes into account subsidized interest rates and lease programs, as well as cash rebates. Considering the discounts throughout 2012, the vast majority of majority of the mass manufacturers kept the incentive levels relatively stable, being Volkswagen the most conservative among its peers. The industry average discount between October 2011 and October 2012 was as well fairly constant around \$2.200. Contrarily to our Europe proxy Germany, the average incentives set by premium car makers were higher than the rest of the market. Alike in Germany, BMW has been the most aggressive brand at the beginning of the year. This changed completely in the second half of 2012 until BMW appeared to be the most disciplined in October. We could observe a clear pattern in the development of BMW’s sales in the U.S. and the average discount offered per vehicle during the last year. Increasing price incentives led to higher sales momentum and vice versa. Nevertheless, we note that this development was less obvious at the end of the year.

Audi, Lexus and Volvo held their incentive schemes quite stable around an average of \$1.500, while Mercedes-Benz, BMW’s strongest competitor in the U.S., held its incentive level as well fairly high and showed the highest average discount per vehicle at the end of the year among the premium brands at around \$3.500.

Model Mix

One of the most important sales and earnings drivers is the model mix, meaning the composition of the different models that were offered and sold as larger vehicles usually contribute higher margins than smaller ones. This model mix is mainly influenced by two factors, namely the age of the model and its age in comparison with the respective competitors’ models. New models tend to achieve both, higher pricing levels and unit sales. As premium cars can be easily substituted by wealthy consumers, a newer product portfolio could favour the decision of potential consumers. In this section, we will focus on BMW’s closest

Figure38: Average model portfolio age in years



Source: Company data; Analyst estimates

competitors, Audi and Mercedes-Benz, since the following analysed premium segments remain dominated by the German brands.

BMW launched several new models within the 1/3/5/6-Series, a Phantom II (Rolls Royce) and a new MINI Coupe/Roadster as well as some facelifts of its existing models like X1/6-Series and the 7-Series which led to youngest average product age among its peers. Furthermore, the company stated that it aims to renew roughly 75% of annual sales volume until 2016 with its product rejuvenation strategy.

Figure 39: BMW new model launches

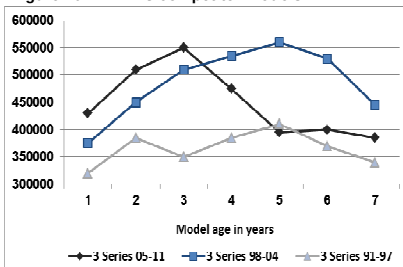
2010	2011	2012E	2013E	2014E	2015E
X5 FL X3 NG 7 Series hybrid 5 Series NG 5 Series touring Mini Countryman	6 Series convertible 6 Series coupe M5 5 Series hybrid 1 Series 5 door NG Mini coupe	X6 FL X1 FL 7 Series FL 6 Series gran coupe M6 5 Series hybrid 3 Series NG 3 Series touring NG Mini roadster 1 Series 3 door NG	i3 M6 cabrio Mini NG 3 Series coupe X5	4 Series cabrio M3 1 Series GT 1 Series coupe i8 X4	7 Series Z4 Z2

NG= New Generation; FL= Facelift; GT= Gran Turismo

Source: Company data

BMW has currently its youngest portfolio age

Figure 40: BMW vs competitor models



Source: company data

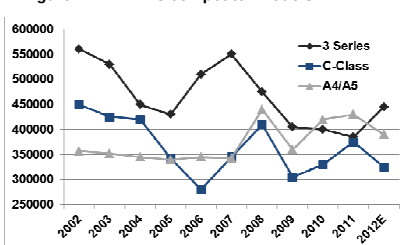
Audi introduced in 2012 as well a wide range of new models and facelifts and achieved to push its average product age down. Mercedes-Benz did not launch a lot of new products in the recent years but in 2012 new models and facelifts among its A/B/M/GL/SL/SLK-Classes were launched as well as the introduction of the new CLS and GLC. With the introduction of the new C-Class at the end of 2013, Mercedes could be able to pass below BMW's average product age during 2014.

BMW reached in 2012 the lowest age of its product portfolio which is one reason why the Bavarian car maker was able to sustain the headwinds from the European crisis. On the other hand, the company will be facing a weaker product mix in the following years as the model portfolio will age again and will probably experience a higher proportion of smaller cars in their sales mix. Moreover, it should be noted that some high profitable Series are at the end of their lifecycle. The X5 is in its last production year and the facelift of the 5 Series was available only in the last quarter of 2012.

If we take a closer look at the most important models of BMW, the 1, 3 and 5 Series and the X-family (SUVs), it becomes clear that the closest competitors are again Audi (A3; A4/A5; A6; Q Series) and Mercedes-Benz (A,C,E,M,G-Class).

By analysing the sales development of the important 3 and 5 Series of BMW over the last 3 and 2 model generations, it is obvious that the latest 3 Series generation (2005-2011) has come under pressure and lost very early in its lifecycle significant sales volume. The decline could be explained by different

Figure 41: BMW vs competitor models



Source: company data

BMW is the in the premium SUV segment... and likely to stay

factors. On the one hand, BMW introduced its first small premium SUV, the X3, in 2004 which could have captures some potential 3 Series buyers since the X3 was more successful than expected. On the other hand, the 3 Series experienced great headwinds from competitors through the emergence of the Audi A5 coupe. Audi had not offered a coupe in this segment for roughly ten years. However, it should be noted that the huge decline took place during the crisis in 2008 and 2009. For the next periods, we believe that the renewal of the 3 Series in 2012 and the new 3 Series coupe prior to the expected replacement of the new Audi A4 (2014E) and C-Class (2014E), would allow BMW to regain a lot of lost sales volume as well supported by the introduction of the complete new 4 Series in 2014E. Having said this, one should be aware of the fact that these models will be the oldest in the segment for the major time of their life cycles after the launch of the new A4 and C-Class.

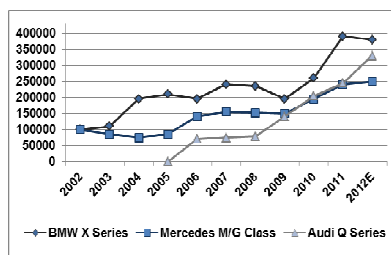
The less volatile sales trend of the 5 Series compared to the 3 Series can be attributed to the 5 Series' very strong competitive position and the favourable competitive environment that it operates in, as it basically competes with just two other models, the Mercedes E-Class and Audi A6.

BMW has been the unquestionable sales leader in SUVs since 2003. This has been due not only to the very strong market position of the X5 but it took four years for Mercedes-Benz and Audi to launch their competitor models against the X3 (M-Class and Q5 respectively). Moreover, BMW's X6 is again the first vehicle in a completely new segment, the upper premium sport SUV. Although the X6 is selling considerably smaller volumes compared to the X5, the X6 is positioned at the top-end of market prices and its sales volumes achieved to exceed initial expectations. The X4, which will be introduced in 2014E, is the smaller version of the X6 and could have a reasonable chance to repeat the X6's success.

However, BMW's time of undoubted leadership and significantly higher sale volumes could be at risk since its peers, especially Audi, have almost completed their model portfolio in the SUV segment. BMW's X1 stood alone in the SUV entry level segment until the launch of the Audi Q3 in 2011. Mercedes-Benz will likely launch this year a competitor to the X1 as well, the GLC. For the upcoming periods, we assume that BMW can defend its volume leadership in SUVs if the new X3 can close the gap to Audi's successful Q5 (107.833 vs. 156.378 at Q32012) and whether the new X4 will achieve reasonable unit sales.

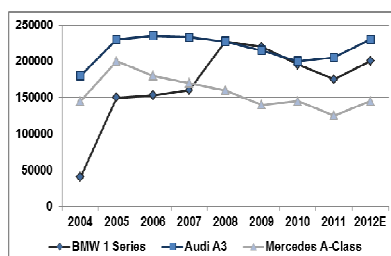
BMW's 1 Series is facing the highest amount of competing models in its segment, more than any other BMW model. The competing models come especially from volume manufacturers like Volkswagen with its Golf model, Ford Focus, Opel Astra, Skoda Octavia and others apart from the direct peers like

Figure42: BMW vs Competitor models



Source: company data

Figure43: BMW vs Competitor models



Source: company data

Audi A3 and the Mercedes A/B-Class. Nevertheless, regarding the growth from the launch in 2005 until 2011, the 1 Series has been BMW's strongest growing product line in BMW's model portfolio. This is even more surprising since this model is not selling high volumes in China and the U.S..

Figure44: BMW sales mix and forecast

Base case	2010	2011	2012E	2013E	2014E	2015E
BMW	1.224.280	1.380.384	1.503.674	1.609.454	1.713.507	1.822.665
1 Series	196.004	176.418	198.089	192.288	225.192	239.538
3 Series	399.009	384.464	457.405	461.492	481.092	500.852
4 Series				131.718	153.540	160.055
5 Series	238.454	332.501	360.162	314.392	283.537	290.712
6 Series	5.848	9.396	27.012	28.843	30.708	32.664
7 Series	65.814	68.774	90.040	96.144	92.124	108.881
X1	99.990	126.429	126.057	124.987	102.360	152.433
X3	46.004	117.944	127.857	144.216	122.832	108.881
X4					42.991	43.552
X5	102.178	104.827	68.431	57.687	112.596	119.769
X6	46.404	40.822	30.614	28.843	40.944	43.552
Z4	24.575	18.809	18.008	28.843	25.590	21.776
MINI	234.175	285.060	297.133	317.276	337.788	359.307
Rolls Royce	2.711	3.538	3.750	3.975	4.174	4.383
Total	1.461.166	1.668.982	1.804.558	1.930.706	2.055.470	2.186.355

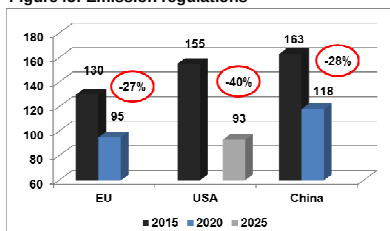
Source: company data; Analysts estimates

R&D and E-mobility

Another challenging factor for the automobile industry is to comply with emission standards for new vehicles, set by the governments and other authorities. The European Commission (EC), for instance, demands a considerable reduction of CO² emission per km for new vehicles until 2020 with a mandatory emission target in 2015. The European Commission considers this step as a win-win situation for the climate, consumers and the economy. As the new vehicles should become in future more efficient in terms of fuel consumption, the EC estimates savings per car of roughly €3.000 to €4.000 over its lifetime. Furthermore, the need for innovative engines forces the car manufacturers to spend heavily in R&D and, in turn, leading to higher labour demand.

Ambitious CO² emission targets can be observed in the most important car markets. China is aiming to reduce the fuel consumption for passenger cars significantly until 2020. Based on the Chinese administration's plan for the

Figure45: Emission regulations

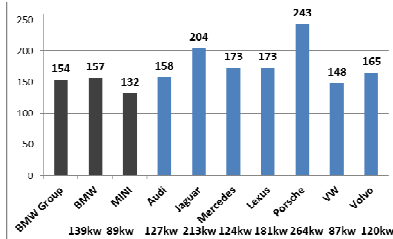


Source: European Commission

automotive industry and its impact on the environment, both imported and domestically produced must meet at least 6.9l/100km (163g/km CO²) by 2015, with energy efficient vehicles having to achieve 5.9l/100km (140g/km CO²). By 2020 this will fall to 5.0l (118g/km CO²) and 4.5l/100km (107g/km CO²) respectively.⁴

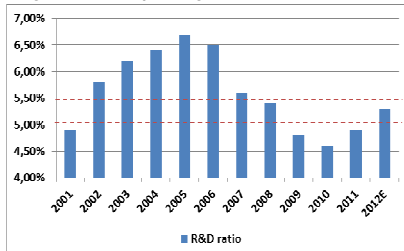
Even though the Chinese government sets very demanding emission targets, the penalties for car manufacturers which cannot comply with these standards are still not defined. However, it does not seem unlikely that they will be given a longer buffer period to meet the targets.⁵

Figure46: Fleet average emission of registered cars in Germany in 2010



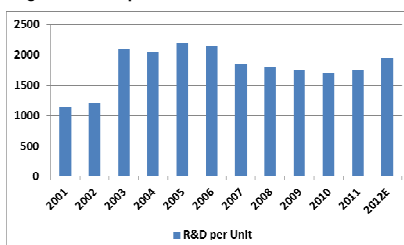
Source: KBA

Figure47: R&D spending of BMW



Source: Company data

Figure48: R&D per unit of BMW



Source: Company data

The European Union demands for the same period a target emission of 130 g/km CO² until 2015 and 95 g/km CO² until 2020. The U.S., in turn, demands a target of 155 g/km CO² until 2015 and until 2025 a target of 93g/km CO². Obviously, premium car maker are more exposed to these regulations than the manufacturers of smaller vehicles. As a result, BMW and its peers invested heavily in the development of alternative engines. At the moment, BMW is in comfortable position due to past investments which will pay off soon. The company is currently better prepared to meet the emission standards than Mercedes-Benz, implying that the latter will need to increase its R&D efforts in the following years.

Considering a study of the German Federal Motor Transport Authority (KBA), the average g/km of new registered cars in Germany in 2010 was for the whole BMW group 154 g/km. For the BMW brand, the value was 157 g/km, just one g/km below Audi, but significantly below other premium brands like Mercedes-Benz (173 g/km), Jaguar (204 g/km), Lexus (173 g/km) or Porsche (243 g/km). Though the technological advantage over Audi does not seem be very meaningful at first sight, it is important to note that the average performance of these cars (measured in kilowatt) was fairly higher (12 kilowatt on average).

Bearing this in mind, BMW can be considered as the technology leader in the premium car segment. This is attributable to the company's high R&D efforts of the past years. The company invested heavily in new engine technologies at the beginning of the last decade. The R&D expenditures reached its peak in 2005 with a R&D to sales ratio of more than 6,5%. Due to BMW's cost reduction program which was introduced in 2007 ("Strategy Number One"), the respective expenditures have decreased moderately are should remain in the future at the upper end of the company's target of 5,5% of sales in order to meet its planned emission reductions.

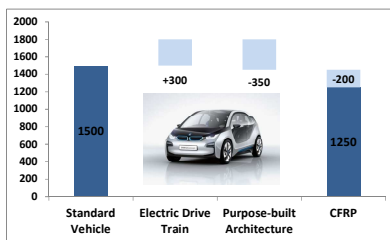
⁴ Source: "China's CAFE to streamline the industry" – China Automotive Review.

⁵ Source: „Fuel-saving targets need driving home" – China Daily.

BMW “Efficient Dynamics” is an innovative program to reduce fuel consumption and CO² emissions while enhancing dynamic performance. The technology is a package which is offered throughout the model portfolio. Similar fuel efficiency standards are also offered by Mercedes-Benz (“BlueEfficiency”) and Volkswagen (“BlueMotion”), albeit they are only attributable to certain models and not throughout the model portfolio.

The long-term goal is fully emission-free mobility. This part of BMW’s innovation efforts includes full electronic vehicles. The “i3” will be BMW’s first full electronic vehicle equipped with an electric engine and a battery and will be launched in next year’s fourth quarter. The other models from the “i-technology”, the i8 and i1, are planned to be launched in 2014 and 2016 respectively. The value proposition of the i-models will definitely not come from the electronic engines but from their carbon shell. The light weight of the carbon should offset the additional weight that electronic engines bring over traditional engines. In order to reduce the expenditures of the expensive carbon fibres, BMW entered into a JV with SGL Carbon in 2010 in order to industrialise and automate the production of carbon fibres and set up production facilities in the U.S.. In the long-term, if the carbon fibres appear to come at a reasonable cost, the next logical step would be the implementation of carbon shells in other models and thereby reducing significantly the weight of the cars which in turn would lead to less fuel consumption.

Figure49: Weight explanation of i3



Source: company data

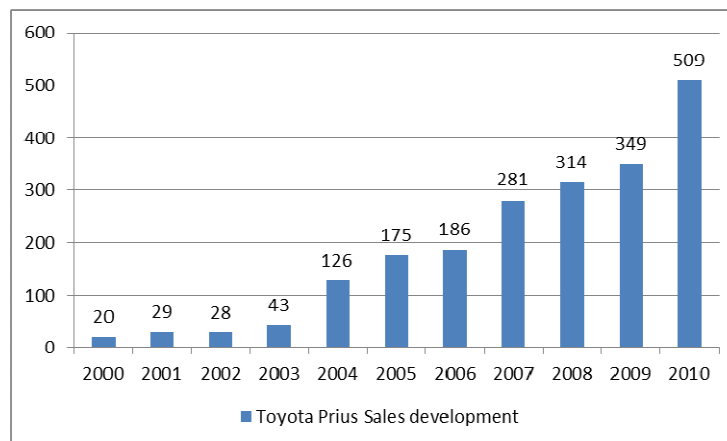
But the introduction of the pure electronic vehicle will have as well some strategic aspects. Considering that the car will command a pure electric powertrain, the CO² emission equals zero. This will have a direct impact on BMW’s average fleet emission especially regarding the long-term emission target by the European Union in 2020 of 95g/km (even though the company stated that its own target would lie at the lower end of the 100-110g/km until 2020). By then, each excess gram of the fleet’s average emission triggers a fine of €95 per sold vehicle. This means that the company will not only save emission fees by each electronic vehicle that is sold, but brings the company also in the comfortable position of not being forced their profitable large car fleet to cope with emissions fees.

The major risk of the electronic vehicle is the assessment of the possible market volume. Almost every comparable vehicle launched by other manufacturers missed the targeted sale figures, implying that the market for electronic vehicles is still small. This is mainly due to the low performance of batteries. Toyota, for instance, cut its sale projections for its “iQ” for 2012 due to the low acceptance in the market. The German government cut its target of having 1 million registered electronic vehicles by 2020 as this figure turned out to be too optimistic.

Nevertheless, most governments are supporting the sale of electronic vehicles through vehicle tax exemptions or R&D subsidies for the manufacturers.

We tried to find a proxy for the i3 vehicles to have an idea of how much impact this model could have. As the iQ from Toyota was a clear sacrifice, we found another model of Toyota which could approximately match the characteristics of the i3. We believe that the Japanese manufacturer achieved to fulfil the demand of wealthy customers to drive differentiate, innovative and environmental friendly vehicles. As the i3 will be launched into a new model class of premium electronic vehicles,

Figure50: Sales development of Toyota Prius

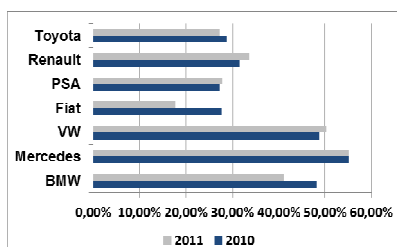


Source: Company information

The first years after the introduction, the Toyota Prius reached reasonable but not high volume sales. The probably change in consumer behaviour in 2005 and experienced high demands from there on. Even if the i3 is not able to achieve the same high volumes, it is likely to gain market share in the electronic vehicle market due to the absence of a premium vehicle in this market. In our view, half of the Prius' sales volume would be a satisfying start in this segment.

Financial Services

Figure51: Penetration rates

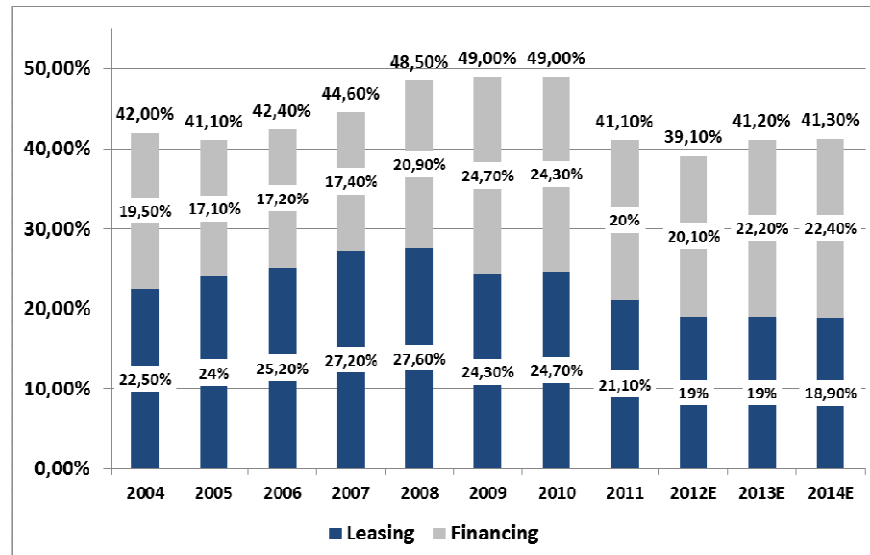


Source: Company data

The group's Financial Services (FS) segment has evolved to a very important part of the sales and revenues. Alike most other car manufacturers, the penetration rate of new vehicles sold through BMW's financial captive has a significant volume. BMW had in 2011 a penetration rate of 41% with an almost equal share of leasing and credit financing, meaning that 41% of BMW's sold vehicles in 2011 were financed by the FS segment. The recent decrease in this figure is mainly due to the sales growth in China, where most purchases are still

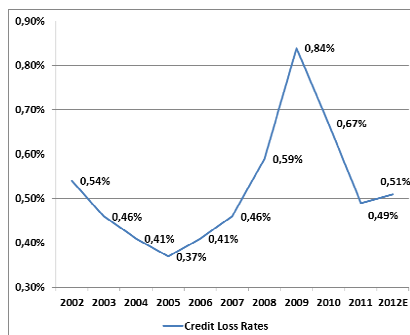
carried out in cash with no major financing. In 2012, the penetration rate in China was around 12%.

Figure52: Penetration rate evolution BMW



Source: Company data

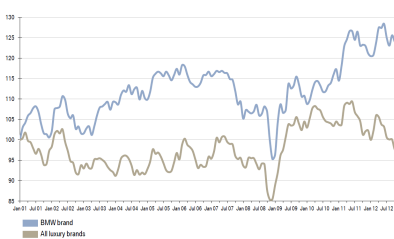
Figure53: Credit loss portfolio



The main portion of revenues from this segment is generated through leasing instalments, the sale of vehicles which were previously leased and the interest income from the credit financed cars. After being hurt from the financial crisis in 2008 and 2009, the FS segment experienced a strong recovery. This was attributable to both, the improvement of residual values of used vehicles and the normalization of the credit loss portfolio after the huge increase during the crisis. The credit losses peaked in 2009 and have already been halved in 2011. We expect credit loss rates to continue on the path of 2012 and to stay relatively flat, mainly driven by the expected slow recovery of the European economy over the next periods.

Concerning the revenues from leasing operations, we believe that the amount of leasing contracts will further rise in the next years, although the penetration rate and the proportion of leasing vs. credit financing should stay flat at current levels. The first revenue stream from leasing operations, the instalments, should grow proportionally with the growth in leased cars. The second source of revenues from leasing which comes from the sale of vehicles which were previously leased to customers is completely dependent from the market values of used cars, i.e. the residual values.

Figure53: US Used vehicle index



Source: Manheim consulting

The Used Vehicle Value Index provides a single measure that captures used vehicle pricing trends in North America. While the whole used vehicle market

experienced a downturn during the last year, BMW branded used vehicles have clearly outperformed both, the overall used vehicle market and the average of luxury brands. This instance, in combination with an expected further upturn in the U.S. car market let us believe that the prices for used BMW's should stay around its current level.

Base case Figure54: Revenue forecast Leasing

Revenues Operational Lease	2011	2012F	2013F	2014F	2015F	2016F
Income from Lease installments	5.628	6.467	6.915	7.325	7.705	8.066
Income from sale of prev. Leased cars	6.226	6.746	7.321	7.827	8.291	8.721
Total Revenues	11.854	13.214	14.235	15.151	15.996	16.787

Source: company data; Analysts estimates

The other main source of revenues of the FS segment arises from the interest income of vehicles which are financed through credits, financial lease as well as dealer financing. Most of the FS segment's credit financing and lease business is refinanced on capital markets. The BMW Group has good access to financial markets thanks to its strong creditworthiness (Moody's A2, S&P A-) and is able to raise money at competitive conditions. Furthermore, BMW operates a retail bank with deposits of more than €11 billion which represents another attractive source of liquidity for the FS segment.

Base case

Revenues Credit financing	2011	2012F	2013F	2014F	2015F	2016F
Interest Income	2.774	3.018	3.237	3.466	3.717	3.916
Interest expense on loan financing	-1.914	-2.267	-2.432	-2.604	-2.792	-2.941
Net interest income	860	751	806	863	925	974

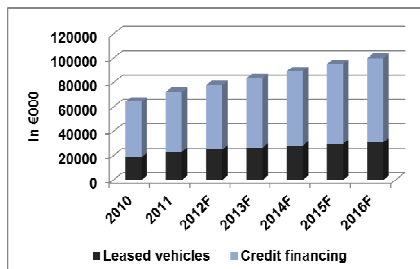
Valuation

Scenarios

We valued BMW using a SOTP approach, valuing BMW's industrial and financial operations separately as well as the JV in China. The industrial operations include the automotive segment and the motorcycles segment. As the motorcycles division has very little impact on the whole group's financial results, to pass on a deeper analysis for this segment. The assumptions behind the evolvement of the motorcycles segment follow the pattern as for the automotive part anyway.

For BMW's industrial operations and the Chinese JV, we used a DFC model, discounting the future free cash flows to the firm (FCF) at a proper WACC. As for

Figure55: Value of financing contracts forecast



Source: analysts estimates

the Financial Services segment, we used the flow to equity method, discounting the free cash flows to equity at the corresponding cost of equity for this division.

We decided to apply three different scenarios for the valuation and attributed each result a certain probability. All of the assumptions and forecasts in the main analysis of this report reflect our base case scenario, which seems to be most probable one. We attributed this case a probability of 75%.

In our second scenario, the bad case, we assume a worse economic development for Europe and the United States for the next years which would directly translate into tougher environment on the respective car market, leading to lower unit sales. As a result, we expect the pricing situation to further deteriorate in Europe and to higher average discounts in the U.S., which in turn triggers easing EBIT margins. Furthermore, we would believe that this would have a certain spillover effect to the Chinese market where we adjusted our projections for growth. In this scenario, the Financial Services segment would not only be hit by less new financing contracts, but as well by a higher credit loss portfolio and lower residual values for used vehicles. We attributed this scenario a probability of 20%.

In our third possible case, the good scenario, we assumed a better than expected economic situation, especially for Europe, meaning that the car market will recover faster than expected. Having said this, a rebound in prices for new cars in Europe would be the logical result. Moreover, we assumed that BMW would be able to capture some market share of its competitors in the most important countries. Considering the Financial Services segment, we would expect higher revenues due to a higher amount of new financing contracts and increased residual values. We assigned a probability of 5% to this scenario.

Weighted Average Cost of Capital

In order to come up with a proper discount rate, we calculated for BMW's industrial division and the Chinese JV different WACCs and for the Financial Services segment the respective cost of equity.

As for the industrial part, we calculated the cost of equity through the CAPM equation. The last year's average yield on 10 years German governmental bonds served as our risk free rate. To account for the systematic, non-diversifiable risk, we obtained a beta by regressing the company's excess returns against our benchmark index excess returns. We decided to use the MSCI World index as benchmark, since BMW is operating globally. By unlevering the obtained betas from BMW and its peers, we found our industry beta which was subsequently

relevered by BMW's capital structure. To complete the CAPM equation, we choose a market risk premium of 5,5%. The respective cost of equity amounted to 7,15%.

The next step was to calculate the cost of debt. For that, we used the following formula: $(1 - \text{Probability of default}) \times \text{Market yield} - (1 - \text{Recovery rate}) \times \text{Probability of default}$. We calculated the market yield by adding a default spread on our risk free rate. As proxy for the default spread, we used the last years average 10 year CDS spread for BMW. Given its good creditworthiness (Moody's A2, S&P A-), we decided to neglect the second part of the cost of debt equation. Our obtained cost of debt is 2,94%.

We followed the same approach for WACC of the JV. The main difference is that we decided to include a country risk premium for China in our cost of equity equation. As for the cost of debt, we used an average of BMW's previously calculated cost of debt, and the one of its JV partner, Brilliance China Automotive.

The cost of equity of the Financial Services segment was calculated as well through the CAPM equation. But in this case, we used a different beta than for the automotive part. This seems to be reasonable since this segment not only depended on the sale of cars, the company's main business, but as well to its credit loss portfolio and the residual values of the used vehicles. Therefore, we used similar consumer finance companies as comparables to estimate the beta. The following table summarizes our WACC and cost of equity results.

Industrial WACC		Joint Venture WACC		Financial Services Cost of Equity	
Risk Free Rate	1,60%	Risk Free Rate	1,60%	Risk Free Rate	1,60%
Market Risk Premium	5,50%	Market Risk Premium	5,50%	Market Risk Premium	5,50%
Beta	1,087497	Country Risk Premium	1,05%	Beta	1,27
Cost of Equity	8%	Beta	1,29	Cost of Equity	8,58%
		Cost of Equity	10%		
Cost of Debt	2,94%	Cost of Debt	4,90%		
Tax Rate	33,50%	Tax Rate	25%		
WACC	7,21%	WACC	8,79%		

Valuation Summary

As mentioned above, we considered three different possible scenarios and obtained a certain share price by discounting the free cash flows to the firm (and free cash flows to equity) by the respective WACC (cost of equity). Finally, we

weighted our results by the probability that we previously assigned to each scenario. The following table provides an overview of our valuation summary.

	Bad 20%		Base 75%		Good 5%	
	Equity Value	Per Share	Equity Value	Per Share	Equity Value	Per Share
Industrial	36.300	55	52.437	80	54.433	83
Financial Services	856	1	3.331	5	4.209	6
Joint Venture	3.064	5	5.118	8	6.049	9
Group	40.221	61	60.886	93	64.691	99
Weighted Average						
	Equity Value		Per Share			
Industrial	49.309	75				
Financial Services	2.880	4				
Joint Venture	4.754	7				
Group	56.943	87				

Appendix

Income Statement Base Case	2010	2011	2012F	2013F	2014F	2015F	2016F
Revenues	60.477	68.821	75.387	79.898	84.659	88.530	91.822
COGS	-41.866	-46.852	-52.579	-55.781	-59.681	-62.574	-65.133
Gross Profit	18.611	21.969	22.807	24.117	24.979	25.956	26.689
SG&A	-5.529	-6.177	-6.612	-6.991	-7.401	-7.721	-7.994
Other op. income/(expense)	-292	-350	-185	-193	-203	-210	-215
EBITDA	12.790	15.442	16.010	16.932	17.374	18.026	18.481
D&A	-7.679	-7.424	-7.977	-8.539	-9.060	-9.559	-10.035
EBIT	5.111	8.018	8.033	8.393	8.314	8.466	8.445
EBIT Margin	8,45%	11,65%	10,66%	10,50%	9,82%	9,56%	9,20%
Net interest	-258	-635	-345	-190	-238	-282	-334
EBT	4.853	7.383	7.688	8.203	8.077	8.184	8.111
Income taxes	-1.610	-2.476	-2.576	-2.748	-2.706	-2.742	-2.717
Net income	3.243	4.907	5.113	5.455	5.371	5.443	5.394
Balance Sheet Base Case	2010	2011	2012F	2013F	2014F	2015F	2016F
Intangible assets	5.031	5.238	5.788	6.292	6.773	7.209	7.600
Property, plant and equipment	11.427	11.685	11.911	12.205	12.556	12.961	13.395
Leased products	19.089	23.112	25.067	26.790	28.370	29.834	31.226
Other Investments	389	863	561	561	561	561	561
Fixed Receivables from sales financing	27.126	29.331	31.506	33.793	36.181	38.795	40.763
Other Fixed Assets	3.952	4.196	4.196	4.196	4.196	4.196	4.196
Total Non Current Assets	67.014	74.425	79.029	83.838	88.637	93.555	97.741
Inventories	7.766	9.638	10.299	10.863	11.488	11.957	12.494
Trade receivables	2.329	3.286	3.688	3.882	4.097	4.259	4.396
Receivables from sales financing	18.239	20.014	21.626	23.196	24.834	26.628	27.980
Other Assets	7.385	8.290	8.290	8.290	8.290	8.290	8.290
Cash & Cash Equivalents	7.432	7.776	8.893	9.922	10.733	11.630	12.522
Total Assets	110.165	123.429	131.825	139.990	148.078	156.320	163.423
Equity	23.930	27.103	29.904	32.464	34.967	37.431	39.869
Long term Financing Liabilities	35.833	37.597	33.099	35.519	37.867	40.371	42.400
Other Long term Liabilities	10.268	11.516	11.516	11.516	11.516	11.516	11.516
Short term Financial Liabilities	26.520	30.380	39.896	42.778	45.602	48.596	50.990
Trade Payables	4.351	5.340	5.917	6.220	6.633	6.912	7.155
Other Short term Liabilities	9.263	11.493	11.493	11.493	11.493	11.493	11.493
Total Equity & Liabilities	110.165	123.429	131.825	139.990	148.078	156.320	163.423

Cash Flow Statement Base Case	2010	2011	2012F	2013F	2014F	2015F	2016F
Noplat	3.168	4.642	4.371	4.585	4.447	4.465	4.435
D&A	3.839	3.634	3.576	3.766	3.957	4.153	4.348
CF from Operations	7.007	8.276	7.947	8.351	8.404	8.618	8.784
Capex	3.363	3.637	4.351	4.561	4.786	4.991	5.171
NWC	389	1.982	486	455	426	352	432
Others	-634	-125					
CF from Investing	3.118	5.494	4.556	5.017	5.212	5.343	5.603
Free Cash Flow	3.889	2.782	3.391	3.334	3.192	3.275	3.181
Interest paid	-291	-537	-77	9	19	31	38
Interest x TR	97	180	26	-3	-6	-10	-13
Change Net debt	-4.101	903	-1.267	-704	-610	-604	-530
Change in pension prov	-1.359	488	0	0	0	0	0
Change in Equity	1.766	-3.816	-2.073	-2.636	-2.594	-2.691	-2.676
CF from Financing	-3.889	-2.782	-3.391	-3.334	-3.192	-3.275	-3.181

Disclosures and Disclaimer

Research Recommendations

Buy	Expected total return (including dividends) of more than 15% over a 12-month period.
Hold	Expected total return (including dividends) between 0% and 15% over a 12-month period.
Sell	Expected negative total return (including dividends) over a 12-month period.

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