## BBVA Research

## Chile

## Automobile Market Outlook

December 2010

## Economic Analysis

- 2010 has been a very positive year for the automotive sector, with strong economic recovery, favorable credit conditions and low prices supported by an appreciation in nominal and real exchange rates.
- Motor vehicle sales reached all-time highs, with an estimated total for the year of 275,000 units, while in 2011 the forecast is for a new record of 312,000 units.
- Leading automakers have also increased their market share against those that are more vulnerable to exchange-rate fluctuations. In geographical terms, there has been a notable fall in sales of Japanese makes in favor of Korean.
- Some $38 \%$ of households have at least one vehicle, and most of these ( $85 \%$ ) have only one. As is to be expected, the demand for cars is strongly linked to household income. The richest $20 \%$ of the population owns $44 \%$ of the total cars, while the poorest quintile owns only $7 \%$.
- $1.9 \%$ of households make use of a car loan, making it the main source of finance within the credit system. Banks provide $50 \%$ of the finance for the purchase of new vehicles, followed by automakers' finance agencies (25\%), importers (15\%) and self-finance (10\%).


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## 1. The vehicle market

Despite a relatively high GDP in terms of the region, estimated at around a current USD 11,000 and close to USD 15,000 adjusted for purchasing-power parity, with a population of only 17.1 million Chile is the sixth biggest Latin American economy in terms of GDP and the fifth in South America. In other words, the Chilean market is small, even by the standards of the region. This characteristic, together with its early process of market liberalization, which anticipated that in other Latin American countries, has determined the current structure of the Chilean automotive market, where supply is entirely made up of imports.
Despite this, in 2010 the Chilean market is the fourth biggest in Latin America in car sales, behind Brazil, Mexico and Argentina, and above countries such as Colombia, Venezuela and Peru, with twice or three times the Chilean population. Furthermore, Chile's expected economic and social progress and its low indicators of car market penetration in terms of the country's per capita income strongly suggest that there is room for continued development of the automotive market.
This report studies the main features of this market: the size of the vehicle fleet and the sales of new and second-hand vehicles; the principle characteristics of supply and demand; the channels of finance; and projections of its main indicators.

## 1.a. The vehicle fleet

According to the National Institute of Statistics (INE), the vehicle fleet in Chile amounts to 3,068,220 units, divided into 3 main groups: private vehicles, passenger transport vehicles and large vehicles, trucks and buses. The automotive market has fluctuated significantly, with a high average growth rate at the start of the 1990s followed by a slowdown in around 2000. The decade ending in 2010 also began with an upturn in growth levels followed by a slowdown starting in 2006.
The private vehicle fleet numbers around $2,760,000$ units, $89 \%$ (in 1998 it was $83 \%$ ) of the total vehicle fleet; next come large vehicles, trucks and buses, at 213,097 units ( $7 \%$ ) and collective transport vehicles (3.3\%) (see Chart 1).

Chart 1
Automotive fleet (units, \% y/y change)


Source: ANAC

Current estimates for new car sales, both by us and those by ANAC, indicate that the 2010 the automotive fleet should return to growth rates above those of the last five years.

The growth in the number of vehicles over the last 20 years has led to a sustained expansion of the rate of motorization (cars per person) or, put another way, the ratio of people per car has decreased. Chart 2 shows the change in the number of people per car over the years. In 1991 the ratio was 12.7, while in 2009 it had almost halved to 6.1. In other words, over 20 years the number of vehicles used by the population had doubled. The ratio of the number of cars per unit of gross domestic product varies according to cycle of economic activity, with increases during periods of crisis such as the years 19981999 and 2007-2009, although the trend is similar in both indicators.
The figures shown in Chart 2 indicate that the growth in the number of vehicles in Chile is characteristic of that seen in emerging economies, where the number of people per car continues to fall as the economy develops. In contrast, in economies with a higher level of economic development the ratio remains relatively static.

ANAC estimates of the average age of the automotive fleet in Chile have only been available recently. According to these estimates, the average age of the fleet is currently 8.5 years, and $50 \%$ of the vehicles were manufactured in 2001 or later.

Chart 2
Motorization rate and cars per GDP unit (people per car, no. of cars/CLP 100m)


Source: INE and Central Bank of Chile.

## Collective transport

The collective transport fleet is made up of cars used for basic, collective and tourist taxi activities. This sector contracted severely following the Asian crisis, bottoming out in 2003 with about 100,000 vehicles. Following a slight upturn around 2005 the fleet stabilized at some 102,000 units. It is important to note that in 1997 the taxi sector underwent a major regulatory change, when the government determined to freeze the provision of new taxi licenses. This regulatory change probably explains the lack of significant movement in the size of the taxi fleet starting in 2000.

Chart 3
Taxi fleet (\% y/y change)


Source: INE

## Trucks, buses and heavy goods vehicles

The size of the fleet of larger vehicles, which can be broken down into passenger transport and freight transport, has grown steadily since 2003 to 292,360 vehicles in 2009. Chart 4 shows the trend in the heavy vehicle fleet, composed of buses (school, company and passenger transport), trucks, tractor heads, tractors, trailers and semi-trailers, minibuses (passenger transport, school and company minibuses) and taxi-buses.

Chart 4
Heavy vehicle fleet (\% y/y change)


Source: INE

The biggest segment of the heavy vehicle fleet is trucks (41\%), which in 2009 numbered 119,487. This is followed by the trailer and semi-trailer segment, at 52,196 units (18\%) and passenger transport buses, at 41,414 units ( $14 \%$ ).

## 1.b. Record sales in 2010

The automotive market in 2010 showed significant signs of recovery, according to data including the third quarter. BBVA Research estimates the component of new car sales in 2010 will be 275,000 units. This level of sales will be an all-time annual high and a rate of annual growth of $50 \%$, which is also the result of a low basis of comparison (see Chart 5).
The strength of the automotive market to October 2010 is similar to that observed in other sectors of the Chilean economy. In fact, the strong upturn in domestic demand in the period in question has been a response both to temporary and more persistent factors (see our Chile Outlook report, Fourth Quarter 2010). Among the most important temporary factors is the recovery of damage caused by the earthquake of February 27, as well as the reversal of the contraction in domestic demand resulting from the recession of 2008-2009. Among the factors that will boost growth in the sector in the medium term are the continued expansive role of monetary policy, recovery of bank lending, appreciation in the real exchange rate and the favorable expected trend in employment.

Chart 5
New car sales (units, \% y/y change)

(*) BBVA Research forecasts.
Source: ANAC and BBVA Research.

As well as the above, there are also specific factors in the automotive industry itself that have led to a swifter recovery in new automobile sales. According to sources in the sector, financial agencies have been operating actively in coordination with auto dealers, and sometimes as part of the dealers themselves. They have played a role in providing alternative channels of finance to those offered by banks and financial institutions during a credit squeeze, and have had a direct impact on the speed with which sales in the sector have recovered.

## Automakers

Leading automakers increased their share of the new car market during the economic crisis of 20082009, while those in the second rank saw their shares fall back. Table 1 sums up the performance of the ten main automakers in order of sales to October 2010.

Table 1
Market share (main automakers)

| Ranking 2010 | Trademark | Sales 2008 | Sales 2009 Jan-October 2010 |  |
| :---: | :---: | ---: | ---: | ---: |
| 1 | Chevrolet | 16.90 | 17.30 | 17.30 |
| 2 | Hyundai | 12.00 | 14.60 | 13.00 |
| 3 | Nissan | 8.30 | 8.90 | 10.80 |
| 4 | Kia | 7.00 | 9.30 | 8.90 |
| 5 | Toyota | 11.50 | 7.70 | 8.70 |
| 6 | Suzuki | 8.60 | 6.90 | 6.80 |
| 7 | Mazda | 3.90 | 3.20 | 3.00 |
| 8 | Mitsubishi | 3.10 | 3.20 | 2.70 |
| 9 | Peugeot | 3.80 | 2.40 | 2.50 |
| 10 | Ford | 2.80 | 3.00 | 2.40 |
| 11 | Others | 22.10 | 23.50 | 23.90 |

Source: ANAC

In 2001 the four main automakers increased their market share, while four of the remaining six reduced theirs. Among the big four, there was an increase for the Korean automakers Hyundai and Kia of 2.6 and 2.3 percentage points ( pp ) respectively, and a fall of 3.8 pp for the Japanese Toyota. On average, the rest of the automakers (classified as "others" in Table 1) increased their relative share by 1.4 points between 2009 and 2009. Total sales of the main automakers in 2008 and 2009 are shown in Chart 6, which shows clearly that in 2009 there was a general fall in sales across all the brands.

Chart 6
New car sales (by maker)


Source: ANAC

Chart 7 shows the level of sales of the main automakers until october 2010 as a percentage of 2008 sales. Both Hyundai and Chevrolet nearly equaled 2008 sales, while Nissan and Kia already exceeded that level. The main factor explaining the change in market share of the main automakers is considered to be the depreciation of the dollar against the yen, which has affected the competitiveness of Japanese automobile exports against Korean ones.

Chart 7
Sales 2010/2008 (percentage)


Source: ANAC

## Models

Table 2 shows the ten best-selling models to October 2010. They are Accent (Hyundai), Spark and Aveo (Chevrolet) in cars; Santa Fe, Tucson (Hyundai) and Grand Nomade (Suzuki) in SUVs; and Terrano Pick-Up (Nissan), Hilux (Toyota) and Navara (Nissan) in commercial vehicles. A common feature of these vehicles is that they are a relatively lower price end within their segment.

Table 2
Best-selling models

| Ranking 2010 | Passenger cars | Units | Jeeps and SUV | Units | Commercial |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | Hyundai Accent | 9,727 | Hyundai Santa Fe | 3,451 | Nissan Terrano |
| 2 | Chevrolet Spark | 8,918 | Hyundai Tucson | 2,899 | Toyota Hilux |
| 3 | Chevrolet Aveo | 8,263 | Suzuki Grand Nomade | 2,508 | Nissan Navarra |
| 4 | Toyota Yaris | 5,801 | Chevrolet Captiva | 2,454 |  |
| 5 | Kia Río | 4,902 | Nissan X Trail | Chevrolet D Max |  |
| 6 | Chevrolet Corsa | 4,170 | Toyota RAV4 | 2,277 | Mitsubishi L-200 |
| 7 | Nissan Tiida | 3,778 | Suzuki Grand Vitara | 2,782 |  |
| 8 | Nissan V16 | 3,627 | Kia Sportage | 2,020 | Ssangyong Actyon |
| 9 | Renault Samsung SM3 | 3,590 | Kia Sorento | 1,720 | Hyundai H-1 |
| 10 | Chevrolet Optra | 3,497 | Kia Soul | 1,701 | Kia Frontier |

Source: ANAC

## Sales of larger vehicles

Public information on sales of larger vehicles is only available for the truck segment. In the new truck segment, the situation in recent years is similar to that for the sales of new cars.

Since the end of 2008 monthly sales of new trucks began to drop, bottoming out in February 2009. The sector then began a gradual upturn, which consolidated itself towards September 2009. From then on the level of monthly sales was similar to those in the first half of 2008. At the same time, second-hand truck sales (bigger than those of new trucks) were highly volatile in 2008 and this situation continued until May 2009. This is a sign that this segment provides a significant alternative for supply that is activated strongly at times of crisis.

## Chart 8

Truck sales (units)


Source: CAVEM

Chart 9 shows the major drop in new truck sales in 2009, and the substantially smaller drop in the case of second-hand trucks. A total of 12,855 new trucks were sold in 2008, while in 2009 the figure was only 8,652 units ( $33 \%$ down). The situation has been clearly better in 2010 to October, with total sales of 9,985 units, more than in the whole of 2009.

Chart 9
Truck sales (units)


Source: CAVEM

## Sales of larger vehicles by automaker

Chart 10 shows the breakdown of sales of new trucks by automakers in the domestic market. The industry leader is Mercedes Benz, followed by Freightliner and Chevrolet. These makers also headed up the sector in 2008 and 2009. In 2008 Mercedes Benz sold 2,067 units and in the first half of 2010 it sold 1,040. In 2008 the second biggest manufacturer (Chevrolet) had sales of 1,387 units, while in the first half of 2010 it sold 575, slightly below Freightliner's figure of 596. In general, over the last three years Mercedes Benz has been the clear market leader, with sales that double those of its main competitors.

Chart 10
New truck sales (units)*

(*) First half of 2010
Source: CAVEM

## 2. Characteristics of supply

## 2.a. New vehicles

New vehicles in Chile are all imported. Chart 11 shows the monthly figures for imports, sales and the arithmetical difference between the two. The series showing the difference aims to give an idea of the inventories of new vehicles in order to explain the situation of the industry during the period in question.

Chart 11
Imports, sales and inventories (units)


Source: CAVEM, National Customs Service.

There is a high level of pro-cyclicality in imports and sales, while inventories peak at periods of high sales and slump in periods of low sales. From the start of 2008 to the end of 2009 the industry underwent a process of transition in which the adjustment variable was the variation in inventories. In the first half of 2010 new car sales were limited by restrictions on supply caused by the fall in inventory levels. This situation began to reverse towards the end of the year, allowing sales to jump until the third quarter of this year.

A really important factor in determining supply is the behavior of the peso exchange rate with the countries of origin of new vehicle imports. As we have seen, the depreciation of the dollar against the yen ( $25 \%$ between January 2008 and September 2010) has resulted in imports from Japan becoming less competitive compared with those from other producer countries, in particular Korea (in the same period the won depreciated by approximately $21 \%$ against the dollar).

Chart 12
Market share by country of origin (percentage)


Source: National Customs Service

Variations in exchange rates have led to significant changes in the market share of vehicle imports by country of origin. Thus Japan reduced its market share from $25 \%$ in 2008 to $18 \%$ in 2009, while in the case of Korea it grew by 5 percentage points from $29 \%$ to $34 \%$ over the same period. Korea has now become Chile's main trading partner in the automotive industry (Chart 12).

## 2. b. Second-hand vehicles

The only reasonable way of gauging the level of supply in the second-hand vehicle market is through the level of deals registered in the National Civil Registry and Identification Service. This service is the official body that registers all legal transactions in second-hand vehicles.

Table 3
Second-hand vehicle transactions (units)

|  | $\mathbf{2 0 0 9}$ | Jan-October $\mathbf{2 0 1 0}$ |
| :--- | ---: | ---: |
| Auto | 326.34 | 308.593 |
| Sport Wagon | 79.125 | 75.88 |
| Jeep | 18.053 | 15.646 |
| pick up | 120.985 | 109.645 |
| Van | 35.801 | 34.11 |
| Livianos | 580.304 | 320.428 |
| Bus | 6.86 | 5.227 |
| Truck | 24.048 | 21.978 |
| Moto | 18.889 | 18.306 |
| Other | 18.022 | 15.955 |
| Heavy | 67.819 | 61.466 |
| Total | $\mathbf{6 4 8 . 1 2 3}$ | $\mathbf{6 0 5 . 3 4}$ |

Source: CAVEM

Table 3 gives the numbers of vehicles traded in 2009 and between January and October 2010. It can be seen that most transactions correspond to light vehicles (private cars, SUVs and commercial vehicles). It can be seen that sales to October 2010 have practically reached the levels of the total sales for 2009. This makes it very probable that the sales for last year will be exceeded, although we should warn that second-hand vehicle sales are notably less pro-cyclical than new vehicle sales. Chart 13 provides a breakdown of light vehicle sales by automaker and model in the first half of 2010.

Chart 13

## Sales of light second-hand vehicles (units)



Source: CAVEM

The segment of light vehicles is headed by Chevrolet, with 88,505 units traded and a $16.3 \%$ share of the market. It is followed by Nissan, with 59,073 units ( $10.9 \%$ ); Toyota, with 51,688 units ( $9.5 \%$ ); Hyundai, with 48,159 units ( $8.9 \%$ ); and Suzuki, with 37,140 units ( $6.9 \%$ ). These five leading brands have a $52.5 \%$ share of total deals in the second-hand vehicle market.

Table 4 shows the situation by type of model. In the segment of passenger vehicles the leaders are Chevrolet Corsa, Toyota Yaris, and Nissan V16. In the segment of SUVs the leaders are Suzuki Vitara, Suzuki Gran Nomade and Mitsubishi Montero. Finally, the leaders in the segment of commercial vehicles are Chevrolet LUV, Toyota Hilux and Nissan Terrano Pick-Up.

Table 4
Second-hand vehicle transactions (units)

| Passengers | Units | SUV | Units | Commercial | Units |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Chevrolet Corsa | 19,807 | Suzuki Vitara | 5,051 | Chevrolet LUV | 25,894 |
| Toyota Yaris | 17,457 | Suzuki G. Nomade | 3,867 | Toyota Hilux | 10,848 |
| Nissan V16 | 16,168 | Mitsubishi Montero | 2,651 | Nissan Terrano pick up | 10,242 |
| Hyundai Accent | 13,674 | Hyundai Tucson | 2,542 | Ford Ranger | 6,306 |
| Peugeot 206 | 8,879 | Nissan Terrano | 1,917 | Mitsubishi L-200 | 5,983 |
| Nissan Sentra | 8,030 | Kia Sportage | 1,891 | Nissan Pick Up | 5,949 |
| Toyota Tercel | 8,169 | Hyundai Terracan | 1,733 | Hyundai Porter | 5,358 |
| Toyota Corolla | 6,417 | Hyundai Galloper | 1,721 | Peugeot Partner | 5,116 |
| Chevrolet Aveo | 5,309 | Hyundai Santa Fe | 1,567 | Chevrolet S-10 | 5,014 |
| Hyundai Elantra | 5,146 | Hyundai Santamo | 1,246 | Fiat Fiorino | 4,695 |

Source: CAVEM

## 3. Characteristics of demand

The demand for cars is mainly from households, whether for private or work use. The information below giving the characteristics of demand has been extracted from the most recent household survey (CASEN 2009, Mideplan), as well as the Household Financial Survey (EFH, 2007, Central Bank of Chile).

Table 5
Income and cars per household

| Quintil | People per <br> household | Total average income of the <br> household (nominal CLP) | Autos(percent <br> of the total) | People <br> per car |
| :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 3.8 | 193,889 | 7.5 | 23.3 |
| 2 | 3.9 | 355,267 | 10.8 | 16.3 |
| 3 | 3.6 | 507,045 | 14.3 | 11.6 |
| 4 | 3.4 | 767,092 | 23.6 | 6.6 |
| 5 | 3.0 | $2,116,871$ | 43.8 | 3.1 |
| Source: CASEN 2009 |  |  |  |  |

Of the universe of $4,791,820$ households, $1,797,649$ ( $37.5 \%$ of the total) have at least one vehicle, whether for private or work use. Of these, the vast majority ( $85.2 \%$ ) has a single car. Across the country, there are about 8 people per car (equivalent to 124 cars per 1,000 people). However, this average hides major differences in terms of the end consumers of these cars. According to the survey, $44 \%$ of the cars are in the hands of the $20 \%$ richest population, while only $7.5 \%$ are in the hands of the poorest quintile. This is even more "unequal" if we take into account that households in the poorest quintiles have more people in them on average. Thus the number of people per car in the poorest quintile is nearly 8 times higher than in the richest quintile, where it is 3 people per car.

Based on information available in the Household Financial Survey by the Central Bank of Chile, barely $1.9 \%$ of households in Chile have a car debt, which on average amounts to 4 million pesos. Both this figure and that of the number of households accessing car finance increases with income levels (Table 6).

Table 6
Car debt and cars per household

| Level | Number of <br> household | Income of the house- <br> hold (nominal CLP) | Household with <br> car debt (percent) | Average car debt <br> (nominal CLP) | Hoseholds with <br> car asset (\%) | Average value of car <br> asset (nominal CLP) |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| All | $3,848,270$ | 788,385 | 1.9 | $4,000,000$ | 38.2 | $3,000,000$ |
| 1 | $1,927,568$ | 255,454 | 0.3 | - | 20.1 | $1,500,000$ |
| 2 | $1,155,755$ | 661,367 | 2.4 | $3,500,000$ | 42.7 | $2,300,000$ |
| 3 | 764,947 | $2,323,214$ | 4.9 | $4,990,000$ | 76.7 | $4,500,000$ |

* Stratum 1: Deciles 1 to 5
* Stratum 2: Deciles 6 to 8
* Stratum 3: Deciles 9 and 10

Source: EFH 2007, Banco Central de Chile

The percentage of households who have a car and the value of this grow with income. The differences between income segments range from $20.1 \%$ car ownership in households in Stratum 1 to $76.7 \%$ in Stratum 3, and the average value of the car in Stratum 3 at 3 times that in Stratum 1.
Use of car finance is limited, even in the highest stratum, where it is $4.9 \%$. This stratum has the highest number of cars per household and the highest level of car ownership (76.7\%), so it represents a significant potential niche.
Table 7 gives representative statistics for those households that have an outstanding car debt, who according to CASEN 2009 number 50,529 and correspond to only $1.1 \%$ of all households.

Table 7

| Car debt |  |  |  |
| :--- | ---: | ---: | ---: |
| Cars per household | Automotive debt (*) | Total debt (**) | Monthly automotive payment (**) |
| 1 | 63 | 5.84 | 28 |
| 2 | 56 | 5.05 | 17 |
| 3 | 93 | 0.58 | 4 |
| Total households | 64 | 5.77 | $\mathbf{2 5}$ |

(*) Percentage of total debt.
(**) Percentage of total income
Source: CASEN 2009.

We can see that within households with a car debt, the servicing of this debt represents a significant part of their income (on average 25\%), although this figure falls with the number of cars and thus with the level of household income. It is also important to point out that within these households car debt is the greatest commitment out of all the outstanding debt, for all segments.
Another point to highlight is that on average households with a car debt register a higher than average debt/income ratio (5.77 as against 2.1).

## 4. Finance

## 4.a. Models of finance

## Main actors

The key actor within the automotive industry in Chile is the importing firm, which distributes a wide variety of the makes of cars produced around the world. Traditionally these firms have been engaged in all the stages of the process of marketing a new vehicle, i.e. they were associated with certain brands of car, imported models from their countries of origin, moved the vehicles within the country and carried out all the operations needed to place the vehicle on the market. Among these operations is the finance provided for the end consumer.

The financial relationship between the importer and the bank was determined directly by the end consumer, who was responsible for finding the bank with which to arrange the finance for the vehicle purchase.

Recently the work of financing has been concentrated in entities known as the financial arms of importers. They operate as parallel brands and their only role is to obtain a profit through the placement of a car loan. To do so, they operate by paying commissions to importers with whom they have distribution contracts.
Currently, the main financial institutions specialized in cars operate in close coordination with the main importers. This company strategy has created a new model of finance that has gained significant ground within the automotive industry. The market share of each of the key actors in vehicle finance is set out in Chart 14, using data from sources within the sector.

Chart 14
Vehicle finance (market share, percentage)


Banks hold the leading position as the main channels of finance as a proportion of total annual sales, with an estimated share of $50 \%$. After banks come the financial agencies offering car loans, with a share of close to $25 \%$, while other alternatives such as importers and self-finance represent $15 \%$ and $10 \%$ of annual sales, respectively.

The agency with the biggest market share of sales financed by vehicle finance agencies is FORUM, which finances about $12 \%$ of annual sales in the industry. Other firms in the market are GMAC, with a market share of close to $4 \%$, MITSUI and MASFIN with $2 \%$ each. The remaining $5 \%$ is divided between Falabella, FACTORLINE, Santander Consumer (part of Santander Consumer España) and AMICAR. Table 8 shows a quantitative approach to the commercial relations between the main financial institutions specialized in vehicle sales and the importers.

Table 8
Vehicle finance

| Automobile finance | Importer | Sales with <br> financing | Importer <br> sales | Credit <br> per month |
| :--- | :--- | ---: | ---: | ---: |
| FORUM | Varias |  |  | 2,700 |
| GMAC | Red General Motors | $25 \%$ | 3,500 | 875 |
| MITSUI | Red Toyota | $25 \%$ | 2,500 | 625 |
| MASFIN | Marubeni | $30 \%$ | 1,500 | 450 |
| FALABELLA | Varias |  | 150 |  |
| FACTORLINE | Varias |  | 150 |  |
| SANTANDER CONSUMER | SK |  | 250 |  |
| AMICAR | Varias |  | 150 |  |
| TOTAL |  |  | $\mathbf{5 , 3 5 0}$ |  |

Source: BBVA Research

The vehicle finance firms operate with conventional fixed-rate and fixed-term loans ranging from 12 to 72 months, and an average of 36. Interest rates are competitive and similar to those offered by banks for conventional consumer finance for the same terms. The default rates faced by the sector are also similar to those for banks, at between $2.5 \%$ and $3 \%$ of the portfolio, and rising to between $5-8 \%$ in recessions, as happened during the years 2008-2009.

## 5. Growth estimates for the sector

As we mentioned in the first section, the estimate for total vehicle sales in 2010 is approximately 275,000 . Because of the low basis of comparison, these sales represented a growth of $60 \%$ on sales in 2009. For 2011, the growth in sales will be around $13 \%$, so that the total number of vehicles sold could be about 312,000 units.
The economic growth estimated by BBVA Research for 2012, together a moderate appreciation in the real multilateral exchange rate that year, will determine that the rate of growth of car sales will be around $9 \%$ for the year. This growth will give sales of about 342,000 units in 2012 (Chart 15) and a total vehicle fleet estimated at $4,070,617$ units, leading to a fall in the number of people per car from 6.1 in 2009 to 4.6 (Chart 16).

Chart 15
Vehicle sales (\% y/y change, units)


Source: BBVA Research

Chart 16
Motorization rate (people per car)


From the point of view of demand, and with a more long-term perspective, we expect significant growth in the population segments with the greatest purchasing power, which as we mentioned above are the households with the highest number of cars per person. The economic growth prospects for Chile are assumed to be favorable ( $5.8 \%$ in $2011,5 \%$ average in the medium term). In addition, demographic projections indicate that the population will grow slightly under the current $1 \%$ to 2020 , giving a total population in that year of 18.6 million. If to this we add an income distribution that remains without significant changes within this horizon, we estimate that the segment of the population with the capacity to buy a car (above a threshold of what we could call the middle class) will grow by $86 \%$ between 2010 and 2020. This is equivalent to 3 million additional consumers with average incomes that place them within the highest quintiles of income distribution.

## 6. Conclusions

The recent international financial crisis was a global event that tested the capacity of different economies and regions to deal with adverse conditions. One of the key lessons of this crisis has been the strength acquired by emerging economies to deal with external shocks. The Chilean economy in general, and the automotive sector in particular, have demonstrated an extraordinary capacity for recovery. As has been pointed out here, following a major but temporary adjustment period in 2009, sales have been at record levels in 2010. In this respect, it is important to highlight that although there is a statistical effect behind the surge this year, discounting this effect the strength of the sector is similar to that before the international financial crisis. Given this, we not only forecast that economic growth in Chile will stabilize at around its potential, leading to a per-capita income level similar to that current in the developed countries of southern Europe, but also expect that the activity of the automotive sector will remain strong and thus allow the people-per-car ratios to converge at similar levels to those in these countries. It is worth highlighting in this respect that even if our growth forecast to 2012 is achieved, the estimated 4.6 people per car will continue to be higher than in Mexico in 2009 (3.66), not to mention Portugal in the same year (1.98). In addition, the structural changes seen as a result of this growth and development include the rise of the so-called middle class (see Real Estate Outlook Chile 2010); in other words, an increase in the number of households, a greater number of cars per household and greater access to and use of car finance. In short, the upcoming years appear highly auspicious for the Chilean automotive sector.

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