This study was undertaken by KHSK Economic Consultants
in association with

Peter Bacon & Associates
ECONOMIC CONSULTANTS

Strategic Review and Outlook: the Irish Motor Retail Sector

September 2009

Table of Contents

Sponsors' Foreword, Highlights and Key Recommendations

Foreword

The retail motor industry is in crisis. The new car market has collapsed in 2009 and the outlook for 2010 and 2011 is not much better. Retail motor businesses have experienced a collapse in turnover and in used car values causing significant losses in the industry. This has in turn resulted in closures of long established businesses, job losses and pay cuts. It also had major implications for the exchequer as a result of the collapse in VRT and VAT revenues.

A group of concerned motor dealers (who sponsored this report) believe that the collapse resulted from external economic, taxation and regulatory inefficiencies which have existed in the Industry for many years but which were masked by the years of the Celtic tiger rather than from internal inefficiencies within the industry. The sponsors believed the industry needs significant reform to enable it to survive the current market difficulties and to ensure that the industry has a long term future in Ireland. We believe that the necessary reform can only be achieved after the facts of how the industry operates have been fully disclosed. We need to demonstrate the uncompetitive impact that the current economic and regulatory inefficiencies have on the industry. Once these have been disclosed and analysed we could seek reforms which were based on what the industry really required rather than on what we believe to be a fundamental misunderstanding of how our industry operates. We concluded that we should sponsor a report which would conduct a comprehensive strategic review of the retail motor Industry in Ireland and which would finally disclose the economic reality of our Industry. We need to ascertain what happened to the Industry where it stands now and whether or not there is a sustainable future for the Industry. At the same time it became evident that the Government would be very receptive to a clear plan as to what direction the Industry needed to take and what reforms could be made to the Industry to make it more efficient.

Accordingly, we approached *Peter Bacon & Associates, Economic Consultants*. When we discussed the basis for the report with the consultants they insisted on three very important conditions:

1. The report would be an independent one and would not be the views of the Industry. It would be based on the economic facts and that any conclusions would be drawn from the facts alone.
2. The report would be a "warts and all" report. If the economic analysis disclosed that the Industry was in fact responsible for its own downfall then the Consultants insisted that this would be included in the report.
3. The report would take consumer welfare into account and anything that impacted on consumer welfare, even if it would damage the reputation of the Industry, would be included.

We agreed to all three conditions as we believed that the only way to change the perception of the Industry to what we believed to be the reality was to maintain the independence of the Report. We believed strongly that if the facts concluded that we were responsible for our own downfall then we needed to know this so that we could change and eliminate any operating inefficiencies that might be identified in the Report. We also concluded that what was good for the consumer could only be in the long term interests of the Industry. We believe than any issues identified in the report which would improve the ability of the retail motor industry to be remain competitive will also have significant benefits for consumers.

The Consultants have now completed their Report and we believe that it is the only comprehensive and honest analysis of the Retail Motor Industry in Ireland. The facts are finally disclosed in full and we trust that the reality of the conditions in which the Industry operates will finally be laid bare and accepted as such. We plan to use this report and the detailed research contained therein as a basis for discussion within our Industry and with the relevant bodies to instigate the appropriate and necessary reform of the Industry.

We wish to thank the Consultants for their honesty, diligence and professionalism shown in preparing this report.

Highlights

1. The report recommended various solutions to assist the sector through the current crisis and remove identified distortions in the market. However, these solutions should not be seen as aiming to prop up the Sector in its current format or to avoid business closures and job losses where there are reasons to doubt the long term viability of these businesses.
2. The long term economic model used in the report did not accurately predict the collapse in new car sales in 2009. The model predicted a fall in total registrations (new cars and imports from the UK) of 9.2 per cent in 2009 while the actual fall was approximately 65 per cent. There are additional factors specific to the Irish retail motor Industry which caused this collapse. There are four main factors that contributed to the unexplained element of collapse in the market,
   - a significant increase in transaction cost (the difference between the trade-in value of a used car and the price of a new car) caused mainly by the depreciation effects of the VRT changes introduced on 1st July 2008 and the devaluation of sterling,
   - the slowdown in tourism and the changes to VRT as it relates to the rental market,
   - the impact of the credit crunch and the subsequent reaction of finance providers and
   - the fall in consumer confidence.
3. The Report predicts that the new car market will remain close to 2009 levels in 2010 and 2011 in the absence of any stimulus package. The market should recover in 2012 as the general economy recovers and achieve 2007 levels by 2015. Therefore, the disruption is not permanent and the long term sustainability of the sector is not in doubt. The unknown factor is how many car dealerships will survive in the short term.
4. The increase in car registrations during the boom years mirrored the general increase in retail sales during the same period. The Industry did not oversell the market during the boom years.
5. The VRT changes implemented in July of 2008, although welcomed by the Industry for the longer term, were implemented at a time when used car stocks at Irish dealerships were at their highest levels ever. It also coincided with the devaluation of sterling which, in turn, had a significant depreciating effect on used car values in the Irish market. These factors generated significant losses for the Industry in 2008 and 2009.
6. The prices of used cars fell in the market from February 2008 to February 2009 by an average of over €5,000 or 22%. Used car values were lower than at any time from 2000 to 2008. This resulted in the average transaction price (difference between the price of a new car and the trade in value) increasing by 31.6% in early 2009.
7. As a result of changing used car values, by the end of 2008 many dealers were faced with high levels of used car stocks which were seriously overvalued. Dealerships found that the arrangements they had in place for used car stocking funding were insufficient and funding providers were unable or unwilling to increase facilities. This led to many companies not having sufficient funding to enable normal trading in 2009 with a consequent refusal to accept trade-ins.
8. Operating margins in the Industry were low overall. The average return on turnover ranges from 1% to 1.5%. Therefore, despite public perceptions to the contrary, there was no profiteering by the Industry during the boom years.
9. There have been a considerable number of high profile investments in car showrooms throughout the country. This has created the perception that the Industry has expanded creating a level of capacity and a cost base that it out of line with realistic expectations. These investments were made to meet manufacturers' standards which resulted from changes to the European legislation governing the sector (Block Exemption Regulations). The report concluded that large investments in premises had not distorted or affected the ability of the sector to adapt to the downturn. There is no evidence that the problems in the sector are as a result of excessive investment in premises.
10. Fixed costs accounted for an average 12.3% of total costs in the sector. Variable costs accounted for an average of 87.7% of the total costs in the sector with labour costs and new and used car stocking costs accounting for the majority of the variable costs. Both these costs increased significantly in recent years and the increase in these costs was unsustainable given the current level of the market. There will have to be significant cuts in both of these costs if there is no market improvement through 2010.
11. The seasonality of sales in the sector is dramatically out of line with the rest of Europe. In Ireland, January accounted for 25% of total registrations and the first three months accounted for 54%. In contrast, the last three months of the year accounted for only 3.4% of

registrations. In Europe, the only months that show any notable divergence from the average were a peak in March and a quiet period in August. The seasonal profile of the Irish market has a major impact on the economics of the market and the way in which it is financed. The report estimated that the additional working capital required to handle the requirements of this seasonality amounted to €278m - costing in excess of €23.6m in interest. The additional working capital required to deal with seasonality will be reduced by the Banking sector which in turn will diminish the sector's ability to deal with the financial requirements of seasonality in the immediate future. Seasonality also introduced significant risk to the market. The extreme downside of this risk became evident in July 2008 following the introduction of the VRT reform. The combination of seasonality and the risk imposed by high residual VRT lead to a sector with a higher cost-base and risk factors than should be the case. Ultimately, these costs are borne by the consumer in the form of increased transaction price.

12. The format of the registration plate system would appear to be an important cause of this excessive seasonality. The emphasis this format places on the year of first registration confers a premium on cars with the current year's plate. Consultations have shown that consumers placed disproportionate emphasis on this factor often overvaluing cars with more recent plates relative to older cars that might be of superior quality.
13. Clear evidence has been uncovered in the Report that VRT is distorting market activity. High registration taxes distort consumers' decisions regarding ownership thereby negatively impacting on consumer welfare. The EC Commission has concluded that VRT has detrimental impacts in terms of both the internal market and the environment. It recommends that VRT should be gradually reduced over a period of five to ten years. The absence of an export refund for cars exported to the UK introduced inefficiencies into the Irish supply chain as this effectively allowed importation but inhibits exports. In addition, the research suggested that there may be considerable deadweight losses from registration taxes and that there were socially regressive effects. This means that the cost of the tax outweighs the revenue generated from the tax. The EU commission has recommended that registration taxes should be replaced with taxes on usage.
14. The Report also concludes that VRT acts as a barrier to an efficient market. As part of the evidence the researchers pointed out that there are no large UK car retailers present in the Irish motor sector while they do operate in other retail sectors of the economy. The UK operates a low car tax policy. The tax system, particularly the difference in tax rates and the lack of any accommodating measures such as an export refund of VRT, meant that this part of the market remains less efficient in Ireland. As a result, expansion into the Irish market would mean, not a replication of the opportunities inherent in the UK market, but expansion into a market where the return on investment would be low. Thus, the tax system was said to act as an effective barrier to entry with a likely associated increased cost to the Irish consumer.
15. The Report also compared the Irish market to other markets in Europe and concluded that the only relevant comparison is with the UK market as they were the only other market with right hand drive. There were major differences between both markets and the conclusion was drawn that an open market does not exist between both countries. Trade can only happen in one direction at any one time due to the differences in currencies. When sterling weakens vs a vs the Euro, new and used cars are imported from UK and when sterling is strong, new cars are exported to the UK. The absence of an export refund prohibited the export of used cars to the UK irrespective of the relative strength of sterling and the VRT system is thus anti-competitive and damaging to the consumer.
16. In July of 2008, the government changed the VRT system and linked car taxes to emissions. The changes are based on the premise that transport causes CO_2 emissions; thus the tax code aims to change consumer behaviour towards the environmental consequences of these emissions. This philosophy was espoused during the changeover in 2008, however it ignores the fact that it is the use of transport which causes the emissions not the actual means of transport itself. A question needed to be asked as to why there was such an emphasis on taxing car emissions (Cars account for just over 10% of the total greenhouse gas emissions in Ireland in 2007) while there is a notable reluctance to apply similar taxation to all other sectors of the economy where emissions arise.
17. Car prices in Ireland are high after tax. Our VAT rates are slightly above the EU average but VRT taxes are applied at a rate that is over twice as high as the EU average of new car registration taxes. In addition revenue collected from VAT and VRT taxes on cars was the highest in Ireland when expressed both as a percentage of GDP and a percentage of total Exchequer revenue in 2007.

18. Retail car prices in Ireland were the highest in the EU 15 when Denmark, which was viewed as an outlier, was excluded. The average price for the top 10 selling cars in Ireland was €19,990 which was approximately €2,400 above the European average.
19. The Report further concluded that our Sector is highly fragmented with too many small independent retailers operating outside the scope of manufacturers' processes; unit sales per dealer were small even during the boom years. Manufacturers have recently begun to take control of the Irish market from independent distributors. It was predicted that there will be a move to larger, regionalised car dealerships operating to the standards and processes of the relevant manufacturer. It is further predicted that this significant change will take place in a chaotic manner due to the collapse in the market with a continuation of this collapse for further two years. It would be more desirable if this change could take place in an orderly manner.
20. The sector has been over-reliant on independent financial institutions to provide the funding for retail purchases of cars. The availability of this funding has been significantly curtailed in the past year. The manufacturers need to become more involved in the provision of retail finance to allow consumers to buy cars.

Key Recommendations

1. The Industry has a long term future but faces the same problems in 2010 and 2011 as the sector faced in 2008 and 2009. It is unknown how many car retailers will survive these two years. The report recommends that the government introduce net revenue generating stimulus packages in order to stabilise the sector in the short term.
2. It is recommended that the format of the registration plate is amended, moving the design away from the prominence of the year and the original county of registration.
3. VRT should be replaced with usage taxes. This should be done in stages with a 25% reduction in VRT rates on 1st January 2010 combined with a government and Industry funded scrappage scheme for two years. This option has been costed and would leverage expenditure of 8 to 10 times the Exchequer input -VRT should be then phased out, beginning in 2013.
4. The Report recommends a system whereby the high residual VRT in used cars is protected during the phase-out period so as to not repeat what happened in July 2008.
5. The proposed change in the VRT rebate to car rental companies should be delayed for at least two years.

Denis Murphy, Managing Director, Blackwater Motors

Dr. Arthur O'Sullivan, Managing Director, Sheehy Motor Group

Jim Ring, Director, Newgate Motor Company

Executive Summary

Recent Performance

1. New car sales in 2009 to date indicate that there will be a fall of 65 per cent this year compared to the annual average for the period 1999-2008. While Irish retail sales have undergone a dramatic fall across the board in 2009 the most pronounced falls are in the motor sector. As a result, the retail motor sector is facing crisis with sales in June 2009 down by over 30 per cent compared to a year earlier. This fall is the latest in an ongoing trend with sales in the second quarter down over 48 per cent on the same three months in 2008.

2. The average annual number of first registrations of cars in Ireland in the period 1999-2008 was 174,059. In these ten years, the first six months of each year on average accounted for 78.5 per cent of the annual total of registrations. To date, registrations in 2009 have amounted to 47,097 indicating that total first registrations for the year will amount to only 59,962 or under 35 per cent of the annual average over the past decade.

3. In 2006 there were 17,589 people employed in the sale of motor vehicles in Ireland with a further 8,000 employed in maintenance and 6,319 working in parts supply and repairs. The 65 per cent fall in the sales of new cars will result in job losses. Furthermore, the motor sector creates demand in other sectors so this decline will impact these other sectors also. The main sectors affected are transport services, post and communications, insurance, real estate, computer services and other business services, all of which are service sectors where employment ratios tend to be high. Combined, the impact on these sectors will mean a fall in demand of €0.24 for every €1 fall in gross margins in the motor sector.

Cost Trends are not Sustainable

4. There has been an upward trend in labour costs per unit of sales which would certainly appear to be unsustainable. This means that if businesses are to survive these costs will have to be reduced. If labour costs per car sold in 2009 were to fall to their 2007 level then labour costs would have to be cut by about 25 per cent. A further interesting finding relates to stocking costs for new and used cars. New car stocking costs declined in 2006 and 2007 but saw a sharp increase in 2008. This has continued in 2009 and survey data indicate that this cost item per unit sold in 2009 is almost three times its level in 2006-07 and about double its long term level. No evidence was found that excess investment has pushed up costs to unsustainable levels.

Seasonality of Demand: A significant Cost Burden

5. The highly seasonal nature of the Irish new car market reduces the efficiency of the sector since it is necessary for dealers to gear up for a busy season and then try to reduce costs during a prolonged slow period. This has had a major impact on the economics of the sector and on the way in which it financed. Seasonality gives rise to costs in a number of ways:
   - It increases the interest payments on stocking costs as cars need to be held for longer periods. The excess working capital that is required is estimated to cost the sector €23.6 million per year in interest payments.
   - The high peak in January increases the risk associated with projections as a good month can be taken to indicate a good year ahead. However, as 2008 showed clearly, this can lead to mistakes.
   - Dealers need to be geared up with sufficient labour and floor space for the peak, but need to be able to cut back after the first few months. This is costly and not always possible thereby driving up costs and customer waiting times.
   - The emphasis on the year in the number plate increases depreciation rates on stock in dealers. This is particularly important if a used car is held over the change of year or is in stock as the final months of the year approach when customers already perceive the car to be a year older.

Car Rental Sector an Integral part of Retail Motor Trade

6. The operation of the car rental sector has been based in part on rental firms reselling cars to the retail trade in the latter part of the year. This also assists dealers in providing a supply of used cars in this period. However, the system changed in 2008 when buybacks came on the market at above their market value resulting in losses for retailers and finance houses. As a result, dealers are no

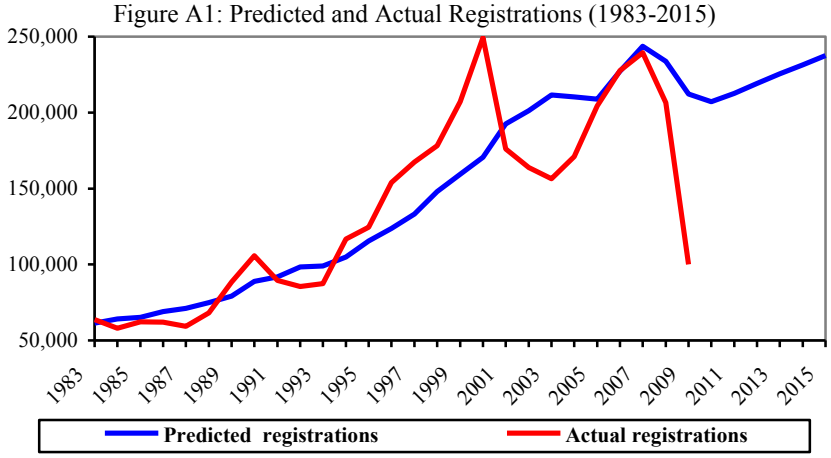
longer able to supply the car rental industry which cannot itself afford to purchase the required number of cars to meet a six week summer demand period. The prospect is that there will be a shortfall in the car rental sector's ability to meet demand at internationally competitive rates.

The Demand for Cars

7. An econometric analysis was undertaken to identify the determinants of demand for cars in the Ireland. Datasets were constructed for a number of variables including the numbers and prices of new and used cars sold annually going back to the early 1980s, incomes, running costs and a variable to account for changes in the technical specifications of cars in this period. Income growth was found to be the key determinant of demand with trend demand rising approximately one for one with changes in incomes. There is no evidence of excessive demand above this trend in recent years. While not statistically significant, the implied price elasticity is -0.4 i.e. demand would fall by 0.4% for every 1% rise in price. However, the international literature indicates that price changes within the market have a much larger impact on the choice of brand.

8. The econometric model indicates that demand for new cars was running in line with trend incomes in 2007 but the fall in sales since then has been far greater than would be expected, as shown in Figure A1.

Figure A1: Predicted and Actual Registrations (1983-2015)



In total, demand in 2008 and 2009 will be about 140,000 less than predicted on the basis of long term trends. Five factors are identified as responsible for this: lower demand from the rental sector, increased costs of purchase, financial constraints and changes in credit criteria, market disruption following the VRT reform and loss of consumer confidence. The final factor is the most important and probably accounts for 75 per cent of the underperformance. While there will be some long term consequences of the disruption to the sector and subdued sales in 2010 and 2011, the impact of these factors will pass with income growth being the major determinant of a recovery in demand.

9. The credit crunch, the exit of some finance firms from the market and the need to adjust to a period of lower economic expectations have all disrupted car financing in the short term. Car finance providers are revising their criteria for the longer term so that the loan to value ratio is moving towards a 50 per cent LTV target, there is a move towards scheme based finance and away from personal loans; also finance is being provided over a shorter time period and residual valuations have been reduced with first year depreciation rates increased from the previously typical 15 per cent to 25 per cent and above.

10. Projections for car registrations in the medium and longer term were developed using the econometric model and additional relevant data. These indicate a gradual recovery with sales of cars in Ireland reaching their 2007 level by 2013. However, the overall car stock in Ireland declines up to 2013 before returning to about its 2009 level in 2015. In the longer term, demographic factors and relatively low car ownership rates in Ireland combine to suggest that the stock of cars is likely to grow somewhat faster. Sales of cars are projected to stabilise at about 240,000 per annum with the car stock growing at about 4.3 per cent per annum up to 2021. These projections indicate that once the current disruption passes the sector will recover and has potential for growth.

Barriers to Market Entry

11. A question which arises is why the Irish car retail sector has not attracted into the market large regional operators which exist in the UK since, from their point of view, Ireland could be seen as a moderately sized regional market where they might have a competitive advantage by replicating their larger operations? Apart from the scale of the Irish market – the total market is less than the Manchester area – the tax regime acts as a barrier to entry. Irish dealers are effectively excluded from selling onto the used car market in the UK due to from the inability to reclaim VRT, which is high in Ireland but does not exist in comparable form in the UK. This has led to considerable distortion and inefficiency in the second-hand market. This is greatly exacerbated by the seasonality of the Irish market so that that the holding period of used car stocks in the dealer network in Ireland is much longer than in the UK. As a result, expansion into the Irish market would mean not the replication of UK market opportunities but expansion into a market where the return on investment would be low. Thus, the tax system acts as an effective barrier to entry and a cost to the Irish consumer. However, the size of the UK market relative to Ireland means that, given appropriate conditions in terms of the exchange rate, the new car market in Ireland can be disrupted if movements make used cars from the UK very competitive. This has happened in recent years.

Fragmentation, Consolidation & Change

12. Membership data from the *Society of the Irish Motor Industry* (SIMI) show that there are 1,600 businesses in Ireland which could be considered to comprise the motor sector. Of these, approximately half are involved in the motor retail sector with approximately 540 franchise dealers with the remainder being independent retailers. Thus, the sector is very fragmented with a very large number of relatively small businesses, particularly when compared with the UK. Even in the peak sales year of 180,000 new cars in 2007 there was an average of only about one new car sold per trading day per franchise dealer. This has fallen to about 1 sale every 3 days in 2009. Consolidation is likely.

13. The motor retail sector in Ireland is likely to undergo considerable change prompted by the strategies being followed by manufacturers and by the shakeout that is likely to accompany the current severe downturn. A likely development would appear to be greater interaction between manufacturers and dealers with increasing integration of the existing importers into the operations of the manufacturers. Along side this, there will be an ongoing emphasis on standards in dealerships and the need for investment to protect brand image. In addition, it will be necessary for dealers to have improved access to managerial knowledge about their businesses and to remove barriers to efficiency.

14. A planned strategic approach to the future of the sector would result in the most efficient dealers surviving and in a regional distribution of dealerships appropriate to consumers' needs. There is a role and an opportunity for manufacturers to create efficient supply chains to get cars to customers in the most competitive way. However, rather than this process taking place in a managed evolutionary manner, it was first delayed, probably because the boom allowed inefficiencies to persist and adjustment is now happening in a chaotic manner as business strategy becomes a fight for survival rather than development. This raises a possibility for economic policy to contribute to an orderly rationalised sector in which the benefits accrue to consumers and inefficiencies in the supply chain are eliminated. This is a key rationale for a number of the recommendations below.

Car Prices & Tax Rates in Europe

15. Comparisons of the before and after tax prices of the top-10 selling cars in Europe were undertaken, along with the sales and registration taxes that are imposed at the point of sales. This shows that Ireland is the second most expensive country for cars with only Denmark, which is a notable outlier in this regard, being more expensive. This is because Ireland has one of the highest tax rates on cars in the EU while pre-tax prices are slightly above average. An effective tax rate of 44 per cent is levied on the top selling models such that VRT and VAT on average account for 30.6 per cent of the purchase price in Ireland. This is well above the average for all countries and, when Denmark is excluded, the effective tax rate on cars in Ireland is about 1½ times the average rate in Europe. Irish and UK pre-tax prises were similar in 2008 although comparisons are affected by exchange rate movements. Car prices are set by manufacturers partly on the basis of what the market will bear and the deep recession in Ireland has increased price pressures. Irish

pre-tax prices have fallen during 2009 while UK prices are moving up and the expectation is that UK prices will increase further in 2010. However, mush higher taxes in Ireland mean that retail prices remain well above UK levels.

Taxes Relative to the UK

16. From the point of view of the retail sector in Ireland, the tax rates levied elsewhere in Europe are largely irrelevant, with the exception of the UK. The reason of course is that only Ireland and the UK have right hand drive cars so only these countries could ever be considered to be in a position to have a shared market. The effective tax rate on new cars in Ireland has averaged 53.8 per cent compared with 17.8 per cent in the UK over the past decade i.e. the tax rate on cars in Ireland was just over three times the rate in the UK. This ratio has fallen somewhat in recent years and is just over 2.5 times in 2009.

The EU Commission's Policy on Car Taxation

17. The Commission has concluded that VRT-type taxes, as are currently levied in some member states, have detrimental impacts in terms of both the internal market and the environment. Its work shows that the existing system results in:
    - Obstacles such as double taxation;
    - Tax-induced distortions in cross border trade in cars;
    - Inefficiencies that impede the workings of the internal market and reduce consumer benefits;
    - Productivity losses for manufacturers who cannot fully exploit economies of scale;
    - Lack of price and specification standardisation; and
    - Sub-optimal taxes to achieve the EU emissions target of 120g of CO_2 per km by 2012.

18. The Commission has concluded that registration tax levels should be gradually reduced, preferably with a view to the total abolition of this tax over a period of five to ten years. In addition, it called for the immediate creation of a registration tax refund scheme in any member state where a registration tax continues to exist so as to remove the distortion effects of the tax during the transitional period. The European Council has not yet adopted the Commission's proposal.

The Rationale for Reform of Car Taxation in Ireland

19. Clear indicators have been uncovered that taxes are distorting activity. These include:
    - A high correlation between the level of VRT and car ownership levels across countries: Ireland is well below most other EU-15 countries in terms of ownership. This indicates that high registration taxes distort consumers' decision regarding ownership thereby reducing consumer welfare.
    - The EU Commission has concluded that VRT-type taxes, as are currently levied in some member states have detrimental impacts in terms of both the internal market and the environment.
    - The lack of an integrated cross-border car market is particularly important in the case of Ireland due to the costs that are introduced into the Irish supply chain as a result of the effective restrictions on Irish owners exporting to the UK. In just about any other tradable goods or services sector, Irish policy is focussed on promoting exports; in the case of cars it effectively prohibits exports.
    - Such limited research as is available suggests that there may be considerable deadweight losses from registration taxes and that there can be socially regressive effects. .
    - While progress is being made towards reaching the EU's objective of 120g of CO_2 per km by 2012, the Commission has concluded that further measures such as replacing registration taxes with taxes on car usage, will be required if the objective of 130g per km for the average new car fleet is to be achieved.
    - Replacing VRT with fuel taxes would make tax revenue less cyclical.

The Options for Efficient Reform of Ireland's VRT

20. There are considerable costs arising from the existing system of car taxation in Ireland, such that there are opportunities for adjustments to be made that would reduce the cost to the economy of raising the amount of tax revenue that accrues from car sales. However, the process of reforming taxes, even if there is a long term benefit, is not in itself costless. It is important that the process is undertaken in a manner that minimises disruption. This issue has been recognised by the industry and the SIMI has called for stability as a result the disruption that resulted from the VRT reform

introduced in mid-2008. Reform of VRT to reduce the excess costs that are imposed on the economy must therefore balance the need to reform the tax with the need to ensure that the sector is not disrupted. This is particularly important in the light of the expected weakness of the sector as detailed in the projections in this report.

21. Irrespective of the approach taken, the consultants are of the view that, given the current difficulties in the public finances, it is necessary to ensure that the reform is revenue neutral. This can be best done by rebalancing the taxes towards taxes on fuel usage. Not only would this have a much improved relationship with usage, it would provide an incentive to drive less frequently and to drive newer more fuel efficient cars. It would also address the fact that Ireland is out of step with other EU countries in having a combination of high car taxes with relatively low fuel taxes.

Recommendations

22. The motor retail sector has been hit with a number of adverse shocks that can usefully be categorised according to whether they relate to short term or longer term issues. The first type are problems arising from the severe downturn of the past two years, which is likely to persist for at least another year, before a period of recovery. The recommendations are designed to assist the sector through the current crisis and remove distortions in the market in the longer term, not to prop up the sector in its current format or to avoid business closures where there are reasons to doubt the long term viability of these businesses. The second type of problems are longer term. Some of these arise from the structure of the sector but many arise from deadweight losses of the tax system and its impact on consumer welfare, the distortion of competition and the risks that arise from the asymmetrical integration of the Irish and UK car markets. The recommendations are framed to address both of these sets of difficulties.

Stabilising the Sector in the Short Run

Scrappage Scheme

23. Scrappage schemes have been introduced by many Governments in developed economies and Ireland has experience with the successful operation of a scrappage scheme in the 1990s. As an initiative to address the short term crisis in the motor retail sector:
    - Scrappage schemes have been shown to work with high take-up;
    - Schemes are fast acting as consumers' response times tend to be short;
    - Government expenditure has immediate leverage on expenditure of 8 to 10 times;
    - They are selective and can include specific requirements such as the age of the car being traded in, the engine capacity and fuel consumption and energy efficiency of the new car.
    - The scheme can leverage co-financing from the industry;

24. ***It is recommended that a co-financed scrappage scheme worth €2,000 per car be introduced for cars first registered before 2000 when traded in against a new car sold in Ireland with emissions below 140g CO_2 per km***. The scheme should have a total exchequer budget of €100 million and should operate for two years. The scheme should be limited to private purchasers of cars who cannot reclaim VAT against the purchase.

25. A calculation was undertaken based on an exchequer budget of €100 million. This showed that by bringing forward sales and thus tax revenues by two years, there would be an exchequer saving of €32 million. It was also estimated that the scheme would save 1,625 jobs in the sector thereby saving the exchequer €65 million over the two years of its operation. It is estimated that there would be a total reduction of 520,000 tonnes of CO_2, giving a saving of €8 million. Together these values are sufficient to cover the cost of the scheme. An additional important benefit is that by easing the crisis, the sector would be better able to adapt in a planned manner to the changes that are happening and to the need for consolidation. The stimulus provided to the sector would also lead to additional demand in related services sectors in the wider economy.

Rental Sector

26. The VRT rules include a 15 per cent to 50 per cent refund to the rental sector but it is proposed to remove this refund starting in 2010. While the longer term impact of removing this refund is likely to be minor, the short term impact is to increase the perception of risk in the sector and it is

likely to thereby suppress demand for rental cars in 2010-11. ***It is recommended that the process of removing the VRT refund for rental cars should be delayed for two years i.e. it should be removed beginning in 2012.***

VRT assessment of imports

27. Used cars imported to Ireland are subject to VRT. However, it has been indicated to the consultants that the way in which the VRT liability on imported used cars is assessed can mean that there still exists a saving relative to the residual VRT in an equivalent car bought in Ireland. ***It is recommended that the assessment procedure is reviewed in detail and in its operation to identify and eliminate any such distortion.***

Addressing Structural and Operational Inefficiencies

Reform of VRT

28. ***It is recommended that a target should be set that VRT will be eliminated within 10 years, that the reform should be undertaken in a manner that is revenue neutral and that the revised taxation of cars should provide a strong incentive to reduce emissions by incentivising consumers to purchase low emissions cars and fuels.***

29. The way in which this is done is important and three options for reform are analysed:
    - Remove VRT in a single move in the short run to avoid ongoing deadweight costs of the tax.
    - Remove VRT in an incremental series of reductions according to a pre-announced programme in order to reduce uncertainty about the future.
    - Reduce VRT by 10 per cent, introduce new lower rates, and then allow the revenue stream to wither away as emissions from cars fall.
    - Remove VRT according to a pragmatic timetable that allows for alternative sources of revenue to be generated and that minimises the disruptive impact of the change on consumers' decisions. This means that there is a need for flexibility regarding the precise details of this option, but the reform should be along the lines of a once-off 25 per cent reduction in VRT at end 2009 along with a number of measures, detailed below, to overcome the main distortions caused by VRT. When new car sales start to recover towards their 2007 levels, such that the risk of consumers deferring their purchases is reduced, the Government should pre-commit to a programme of reductions in VRT to remove the tax completely over say five years.

30. The target of revenue neutrality effectively means that excise duties on fuels could need to increase sufficiently to make up the loss of revenue due to removal of VRT. The first option would require such a big increase in fuel prices that it would likely result in a revenue shortfall as consumers cut back and a fall in car buying in the short term. ***As a result, the consultants do not favour this approach.*** The second would provide an incentive for consumers to defer car purchases in the early years when a sales stimulus is required and would allow the costs of VRT to persist. ***For these reasons, this incremental approach is not advocated.*** The third option has some merit but it is risky as it depends on emissions targets being achieved and for the government to facilitate the loss of a revenue source without action. It also allows VRT to persist as a revenue generating tax and so ***this approach is not advocated.*** The final approach establishes the objective for Ireland to eliminate VRT and move the balance of taxation onto car usage. This is much more in line with good environmental policy and would remove the severe trade, consumer welfare and competition distortions that exist currently. At the same time, this approach would avoid creating an incentive for consumers to prolong the downturn in car sales by deferring decisions to replace and would allow for an incremental adjustment to more fuel efficient cars and driving patterns. As a result, ***it is recommended that the effective VRT rate on cars be reduced by 25 per cent in the next budget and that when car sales have recovered to trend levels that the Government commit to a five year programme to eliminate VRT completely in a revenue neutral manner.*** At the same time the interim measures discussed below to ease the distortionary impacts of the residual levels of VRT should be introduced. Given the potential for changes to VRT to disrupt the sector, ***it is recommended that the Government should engage in consultations with the sector in advance of this reform to identify measures to minimise the disruption***.

Seasonality and the Number Plate

31. The seasonal nature of new car sales in Ireland is identified a source of inefficiency in the supply chain as it pushes up the costs of dealers. The inclusion of the year of first registration in the

registration number leads to an excess emphasis on the year of first registration as an indicator of the quality and value of a car. This is distorting the seasonal distribution of demand, is making the sector inefficient in terms of the leverage of assets and is distorting the customers' perceptions of new and used cars and the prices of used cars. The retention of the initial county of registration also distorts prices in the used car market. As a result, there are good reasons from the point of view of both dealers and customers to address this issue. ***It is recommended that the format of Irish number plates be revised following consultations with the industry to one that does not actually contain the year of first registration but where the age of the vehicle can be ascertained easily.***

VRT Offset Scheme

32. Unless action is taken, the Irish industry will remain effectively excluded from the UK market during the adjustment period until VRT is removed and the costs of seasonality will persist. Since a particular stock of cars will be required irrespective of their origin, the introduction of a scheme whereby excess used cars early in the year were exported with a refund of residual VRT and then imported later with VRT being paid would have no net impact on the exchequer. ***It is recommended that a VRT off-set scheme should be introduced whereby the export of a car to the UK or another EU country would create a VRT credit equal to the residual VRT in that vehicle that could be offset against a VRT liability.***

Road Tax Rates

33. The car road tax reform that was introduced in 2008 has disrupted the market and cars with similar levels of emissions are liable to very different rates of road taxation. ***It is recommended that a uniform system of road taxation should be used, based on CO_2 emissions, and applied to all vehicles irrespective of the year of registration.***

VAT Margin Scheme

34. To assist dealers in handling the distortions to cash flow that arise due to the highly seasonal peak over the winter months, ***it is recommended that the motor sector should be included in the VAT margin scheme for second-hand movable goods and motor vehicles be reclassified as margin scheme goods under the regulations***.

Business Strategies

35. Despite the years of boom, the motor retail sector entered the downturn in a weak position. It is important that the sector takes this lesson on board. ***It is recommended that the retail sector engages in an exercise to identify best business and management practices to ensure it is as competitive as possible***. It is likely that this is best done by dealers working with distributors and manufacturers where each is complimentary and has a role in the supply chain, rather than as a sector of competing interests. **As part of this,** ***it is recommended that the sector is careful that, in its communications with policymakers, the topics chosen are those that aim to improve efficiency and consumer welfare*** and that issues that may artificially prolong outdated businesses or practices are avoided.

36. In the long term, the sector is under pressure from manufacturers with considerable economic and pricing power. Manufacturers are developing strategies to cut the costs of getting cars to market and to increase their influence in the market. ***It is recommended that dealers work closely with manufacturers to clearly identify their role in these new strategies***. This will likely mean a loss of independence, but the era of dealers working independently rather than as part of a supply chain is passing.

37. One important element of the process of buying a car is acquiring finance. This has been badly disrupted over the past couple of years and while the immediate crisis may pass, there are long term changes in the business. ***It is recommended that dealers engage with manufacturers to create long term structures that would ensure a more reliable flow of finance*** and that the criteria governing the allocation of finance would work to ease the cyclical nature of demand rather than the reverse as has been demonstrated in the current downturn.

Improving Data Quality

38. Finally, the consultants have faced a number of data deficiencies in undertaking the research for this report. ***It is recommended that statistical sources be upgraded in respect of data on used car***

transactions and prices and that the research be undertaken into the potential for a hedonic i.e. quality adjusted, price series for new cars to be developed.

1. Introduction

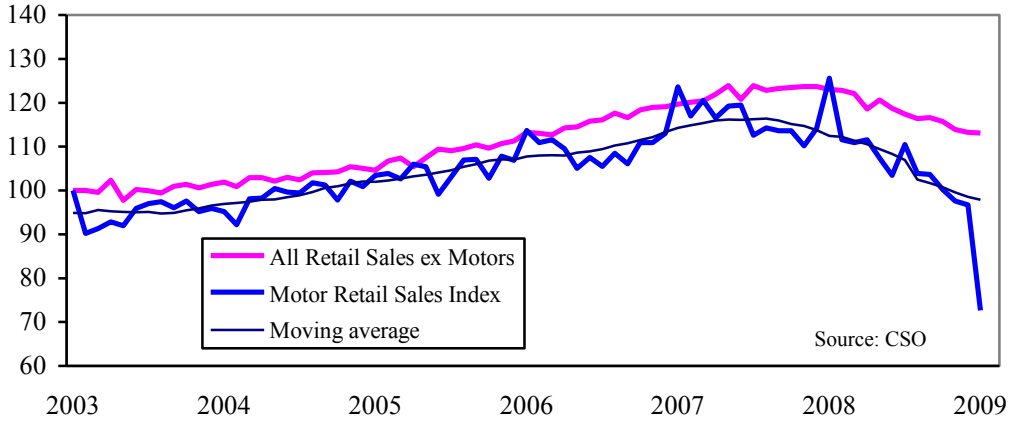
1.1 Context of the Report

The fall in retail sales right across the Irish economy has been dramatic. The latest figures show that sales volumes fell by 13.9 per cent in the second quarter of 2009 compared with the same period in 2008. The most pronounced falls are in the motor sector. The data point to a retail motor sector facing crisis with sales in June 2009 down by over 30 per cent compared to a year earlier. This fall in is the latest in an ongoing trend with sales in the second quarter down over 48 per cent on the same three months in 2008. Using 2005 (= 100) as the base, the motor retail sales index stood at 51.5 in June 2009.

A total of 124,779 cars were first registered in Ireland in the first 6 months of 2008, but the total for 2008 fell by almost 19 per cent from the 2007 peak to 152,455 registrations. According to data provided by *SIMI Statistical Services*, the average annual number of first registrations of cars in Ireland in the period 1999-2008 was 174,059. In these ten years, the first six months of each year accounted for 78.5 per cent of the annual total of registrations on average. To date, registrations in 2009 have amounted to 47,097. If the first six months of 2009 also accounts for 78.5 per cent of the eventual 2009 total then first registrations for the year will amount to only 59,962 or under 35 per cent of the annual average over the past decade. Thus, the experience to date indicates a fall in new car sales in Ireland in 2009 of 65 per cent compared to the annual average for the period 1999-2008.

The longer term performance of the sector, in terms of the volume of sales, is shown in Figure 1.1 along with aggregate retail sales in other sectors of the economy[1].

Figure 1.1: Retail Sales Index (2003=100)



Two features are worth noting. First is that over the period 2003-2007, retail sales in the motor sector grew at a fairly similar rate to retail sales in other parts of the

[1] The figure also includes a 12 month moving average of motor retail sales to remove the impact of seasonal variation in sales.

economy although the seasonal peaks can serve to disguise this trend at times[2]. This is in some contrast to a common perception that the sector experienced very high growth during the boom.

The second feature is the extent of the underperformance since mid-2007, the exceptional peak in January 2008 being noted. The twelve-month moving average peaked in mid-2007 at 22.5 per cent above its 2003 level and has been falling since. Most notably, the motor retail sector index showed no seasonal peak in the early months of 2009, an indication that sales will not recover this year.

The report explores in detail the forces that have led to this severe downturn and the implications for the future of the sector. In summary, the past two years have seen the sector being hit by a number of shocks, some of which are sector specific and some of which will have temporary impacts. However, along with the general economic downturn, there are also some important structural changes that will have longer term effects on the performance of the sector. The shocks may be categorised under three headings: cyclical developments, structural changes and once-off factors.

Among the cyclical developments there is the general economic downturn and the rapid fall in the exchange rate of sterling against the Euro which occurred in the second half of 2008. The impacts of these developments are discussed in Chapter 2 and quantified in Chapter 4. These have coincided with a dramatic fall in consumer confidence and a decline in purchases of cars by the tourism rental sector. Thee impacts are also discussed in detail in Chapter 4 below.

A number of once-off shocks have also hit the sector. The most widely discussed has been the impact of the VRT revision in July 2008 which disrupted the sector. The rates of VRT levied on cars in Ireland have long been a subject of intense debate and Chapter 3 explores this issue in detail. A somewhat less noted shock, but one that was highly disruptive, is the increase in the transaction cost of buying a new car that occurred in 2008. The causes of this are complex and while the trigger mechanisms may be temporary there are likely to be long term effects as perceptions of risk have altered as a result of the disruption.

It is possible to categorise this disruption as having longer term structural impacts on the sector particularly in the way cars are financed. However, there are also important long term forces as a result of manufacturers' strategic responses to developments such as EU policy, particularly in relation to the environment and the block exemption regulation (BER). All of these will have an influence on consumer welfare, choice and the viability of a competitive market in the longer term.

[2] The CSO data, which use 2000 = 100 as the base, have been rebased to January 2003 = 100 as the year 2000 was an exceptional year for the motor sector and its use as a base would distort the picture relative to other sectors of the economy, the impact being to suggest a major under-performance of the motor sector over this period.

1.2 Structure of the Report

The report is arranged as follows. Chapter 2 provides an overview of the motor retail sector and the factors which are impacting on its performance. It contains data on the Irish car stock and examines the structure and operations of the sector. The analysis is informed by data from a survey of franchise dealers which examines the cost structure of these businesses and the way in which features of car demand such as seasonality are managed. It also examines the impact of EU policy on the sector.

Chapter 3 provides a comparative overview of the sector relative to other EU countries. It examines recent comparative performance in demand and compares car prices in Ireland with other EU countries. The chapter also examines the structure of transport taxes in Ireland relative to other EU countries and contains a discussion of the efficiency of car taxes as currently implemented. This section provides analysis and support for those sections of the report dealing with demand and projections and the analysis of issues underlying recommendations, particularly in relation to tax and overall economic policy.

Chapter 4 contains the results of the econometric analysis of demand. This identifies the long term drivers of the demand for cars in Ireland and provides a forecast up to 2015. A notable result is that demand in 2008 and 2009 has fallen far below the predicted trend level. This issue is analysed in detail and the prospects for the short term recovery of car sales are examined.

Chapter 5 extends this work by developing a model to project future demand for sales using data on the existing stock of cars, the factors that will determine demand and the consultants' analysis of the outlook for recovery in the Irish economy. It further extends the analysis by incorporating demographic features and car ownership trends into the model to project the car stock and annual sales over the next decade.

Section 6 contains the recommendations based on the results of the above analysis. Recommendations are identified to assist the sector through the crisis in the short term. Additional recommendations are identified to address inefficiencies in the sector and to assist the sector in adapting to the structural changes that are occurring, in order for it to provide a competitive market to its customer base.

2. Overview of the Sector

2.1 The Irish Car Stock

The number of car registrations in Ireland since 1980 is shown in Figure 2.1. These comprise first registration of cars sold in Ireland and cars imported into Ireland. This latter group is composed primarily of cars from Japan in the 1990s and cars from the UK more recently.

Figure 2.1: Car Registrations: Number by Year (1980-2008)

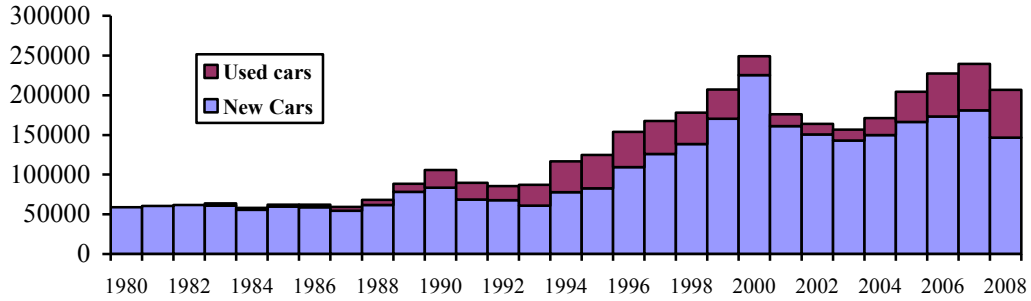
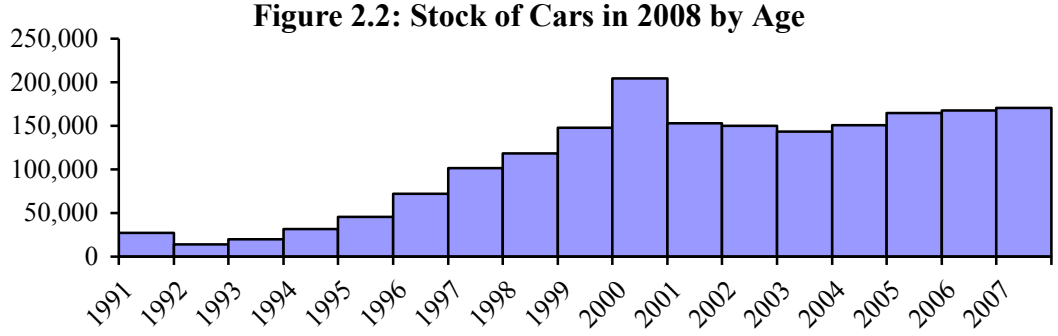


Figure 2.1 shows a peak in registrations in the years 1999 to 2001, particularly in 2000. The consultations have suggested that this resulted from the wish to obtain the '00' registration plate and economic factors, in particular the fall in interest rates that preceded the introduction of the Euro[3]. The data in Figure 2.2 on the existing stock of cars in Ireland show that there is a similar peak around 2000 thereby indicating that there was a big renewal of the car stock in Ireland in these years[4].

Figure 2.2: Stock of Cars in 2008 by Age



[3] The weakness of the Euro in the year following its introduction also made it profitable to export new cars from Ireland to the UK. These cars were never registered in Ireland and so they are not an explanation for the peak in Figure 2.1. However, the fact that exports took place supports the idea that Ireland and the UK are potentially a single market for cars. As discussed in Chapter 3 below, the operation of this market is severely distorted due to the separate currencies and the very different registration tax systems in the two areas. Despite this, a sufficiently big movement of the Euro/UK£ exchange rate will cause cross border sales to rise. In 1999-2001, this led to the export of cars from Ireland. In the past two years the strength of the Euro has led to the reverse flow of about 60,000 nearly new used cars per annum. Data on cars registered for the first time in Northern Ireland that have been imported from outside the UK – to a considerable extent these will be from the Republic show a peak in 1999 to 2001. In these years the annual totals were 5,073, 3,473 and 1,218 respectively. In the period 2002 to 2007 the average annual total was 852.

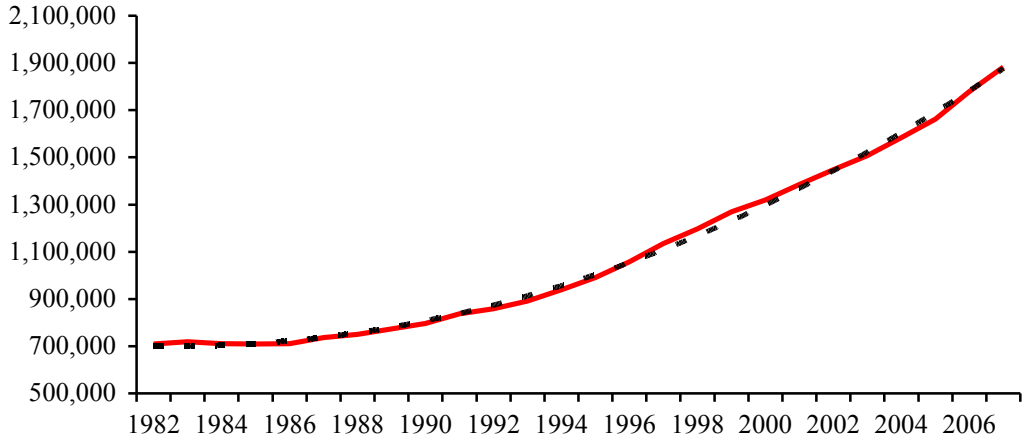
[4] Department of Transport (2008) *Irish Bulletin of Vehicle and Driver Statistics* 2007.

This suggests that along with economic factors, the wish to have a '00'- plate was an important determinant of the big increase in registrations in 1999-2001. As discussed in detail later in this Chapter, this obvious identification of a car with the year of manufacture is an important characteristic of the Irish market that has considerable impacts and costs in terms of the seasonality of car sales through the year. These cars are still registered in Ireland so this peak has an effect on the projections for future demand developed in Chapter 5 below. It continues to influence the stock of cars throughout the time period of the projection, although it is of decreasing importance.

A second issue refers to the number of new registrations of used cars, particularly in recent years. They have risen from a low of 13,472 in 2003 to 60,091 in 2008. This is believed to reflect mainly imports from the UK, with some additional imports from other EU countries as immigrant workers moved to Ireland. These are included in the stock of cars.

Figure 2.3 shows the number of cars under current licence in Ireland in each year since the 1980s[5]. These data (red line) show a steady increase in this period but there has not been a surge above the trend (dotted line) in the number of cars on the roads in recent years as is sometimes suggested.

Figure 2.3: Cars Under Current Licence (1982-2007)



2.2 Structure and Efficiency of the Motor Retail Sector

Membership data from the *Society of the Irish Motor Industry* (SIMI) show that there are 1,600 businesses in Ireland which could be considered to comprise the motor sector. Of these, approximately half are involved in the motor retail sector with approximately 540 franchise dealers with the remainder being independent retailers. These data indicate that the sector is very fragmented with a very large number of relatively small businesses, particularly when compared with the UK. An interesting question is why the sector has not attracted in the large regional operators, such as those which exist in the UK? After all, they could view the Irish market as a moderately sized regional one where they might have a competitive advantage by

[5] In this report, the use of the word 'licensed' refers to the total stock of cars on the roads in Ireland in any year irrespective of the year they were registered.

replicating their operations. Apart from the scale of the Irish market – the total market is less than the Manchester area – there appear to be two sets of reasons to support the view that there are effective barriers that make entry into the Irish market unprofitable. However, the sector may be on the verge of major change.

Entry barriers are of several types. The first set is familiar and exist in many industries and are unambiguously of benefit to incumbents[6]. These include factors such as:

- Existing customer relationships, databases and familiarity. Buying a car is a large financial decision for most consumers and one that is characterised by asymmetric information: most customers know relatively little about cars in general and very little about any particular car under consideration. They will almost invariably know less than the dealer or at least will be under the perception that this is the case. In addition, while advertising and brand reputations are important in a general sense, there is always the possibility, even with new cars, that the particular car being considered might not be representative of the brand in general. As a result, familiarity with a particular dealership is important since this can act as a proxy for familiarity with the actual car. On the other side, the dealer can leverage this relationship by keeping in touch with previous customers.
- Market saturation: The fragmentation of the sector means that car dealerships are ubiquitous in Ireland – any increase in demand can be accommodated leaving little opportunity for large UK dealers wishing to enter the Irish market to build the scale that would be required to enable replications of the systems that give rise to economies of scale.
- Sunk costs: there are considerable costs related to entering the market and any new operation that would wish to be competitive relative to an established dealer would need to gain a high profile presence leading to large property acquisition costs. However, established dealers will have had time to depreciate their premises. While the Block Exemption Regulations (BER) revisions have resulted in the need to invest in premises, thereby pushing up sunk costs, this actually weakens this barrier to entry since new investment is required from existing operations as well as entrants.

However, there appears to be a set of factors which are specific to the motor retail sector in Ireland that may be effectively acting as barriers to entry:

- Tight margins: the consultants are not in a position to independently assess margins across the Irish motor retailing sector within the scope of this work but such data as have been accessed indicate that margins have been tight and that many businesses have moved into a loss making position in 2009. The data indicate a margin of about 1.5 per cent of turnover across all departments – sales of new and used cars, service and part – in the first 5 months of 2008. Sales were fairly strong in this period and the disruption caused by the tax reform in July 2008 had not yet impacted. The equivalent data for 2009 show

[6] Much of the economics literature on barriers to entry is traced back to Bain, J. (1956) *Barriers to New Competition*. His work identified three types of barriers to entry: reputation/brands, economies of scale, and sunk costs. Some schools of research have cast doubt on the effectiveness of sunk costs as a defendable barrier but there is plenty of evidence from many industries that incumbent firms push up costs by activities such as saturation advertising in order to deter entry. While they have been identified from the consultations that have taken place in researching this report, it is notable that the three factors discussed here closely mirror Bain's classification.

a small loss. While very tight margins would deter new entrants, it would not necessarily be an effective barrier for large dealers who may be able to exploit economies of scale that could be used to build a competitive position with higher long run margins;

- Currency risk: it might be argued that the different currencies in the two areas provides a disincentive for UK dealers to enter the market by increasing the risk on holding stock due to the potential for exchange rates to move. While one of the main reasons for the creation of the Euro was the promotion of cross-border trade in the EU, thereby suggesting that it does reduce risks, this argument is unconvincing. Not only would it be fairly straightforward for large dealers to hedge any such risk, but most manufacturers have no problem in pricing in Euro. There is no indication that UK-based retailers in other sectors such as clothes, supermarkets or services have been deterred from entering the Irish market due to the position of the UK outside the Euro and even a cursory glance at any Irish high street would indicate that UK operators in many retail sector have expanded into Ireland during the Euro's existence.
- The tax regime: at first glance it is difficult to see that the existence of relatively high VRT and VAT in Ireland compared to the UK would inhibit entry, given that firms in many sectors operate across borders with differing tax laws. However, apart from the impact that high taxes have in depressing car ownership rates, the extreme difference in tax rates between Ireland and the UK means that the single market in the two countries remains a potential only. Despite this, the size of the UK market relative to Ireland means that, given appropriate conditions in terms of the exchange rate, the new car market in Ireland can be disrupted if movements make used cars from the UK very competitive. This has happened in recent years. In the longer term, the barrier to exporting (arising from the inability to reclaim VRT) has led to considerable distortion and inefficiency in the second-hand market. Irish dealers are effectively excluded from selling onto the used car market in the UK. In itself, this is a problem for the sector, but it is greatly exacerbated by the seasonality of the Irish market. As discussed in the next section, the result is that the holding period of used car stocks in the dealer network in Ireland is much longer than in the UK. The Irish market has also failed to develop car auction houses such as exist in the UK for bulk supplies, in large part as a result of this seasonal imbalance of demand and supply. While good management of new cars is an important element of the motor retail sector, the efficient management of used cars is a key driver of success. The tax system, particularly the difference in tax rates *vis-à-vis* the UK and the lack of any accommodating measures, means that it is more costly to operate in this part of the market in Ireland than in the UK. As a result, expansion into the Irish market would mean not the replication of UK market opportunities but expansion into a market where the return on investment would be low. Thus, the tax system acts as an effective barrier to entry and a cost to the Irish consumer.

Despite these features, the motor retail sector in Ireland is likely to undergo considerable change prompted by the strategies being followed by manufacturers and by the shakeout that is likely to accompany the current severe downturn. A planned strategic approach to the future of the sector would result in the most efficient dealers

surviving and in a regional distribution of dealerships appropriate to consumers' needs.

There is a role and an opportunity for manufacturers to create efficient supply chains to get cars to customers in the most competitive way. This could have major implications for the future of the sector. However, rather than this process taking place in a managed evolutionary manner, it has been delayed, probably because of the boom, which allowed inefficiencies to persist. Adjustment is happening now in a chaotic manner as business strategy becomes a fight for survival rather than development. This raises the possibility for economic policy as it impacts on the sector to contribute to an orderly rationalised sector in which the benefits accrue to consumers and inefficiencies in the supply chain are eliminated. This is a key rationale for a number of the recommendations in Chapter 6 below.

2.3 Analysis of the Motor Retail Business

Car retail businesses are increasingly integrated in the supply chain of manufacturers to consumers. They are required to comply with manufacturers' strategies to protect brands and market share. An important aspect of this development is that dealers are required increasingly to achieve higher standards in terms of premises and training in line with the characteristics of the particular brand. This may mean that the fixed costs of retail businesses is rising as a proportion of overall costs complicating the ability of businesses, in particular the leading businesses, to reduce costs and adapt in the face of a cyclical downturn. There has been a considerable number of high profile investments in car showrooms around the country and, while Ireland has not seen the development of motor retail parks on any scale, these developments feed the perception that the sector has expanded creating a level of capacity and a cost base that is out of line with realistic expectations. This perception has been further enhanced by a number of high profile business closures in recent months and fears expressed by the industry that there are more to come.

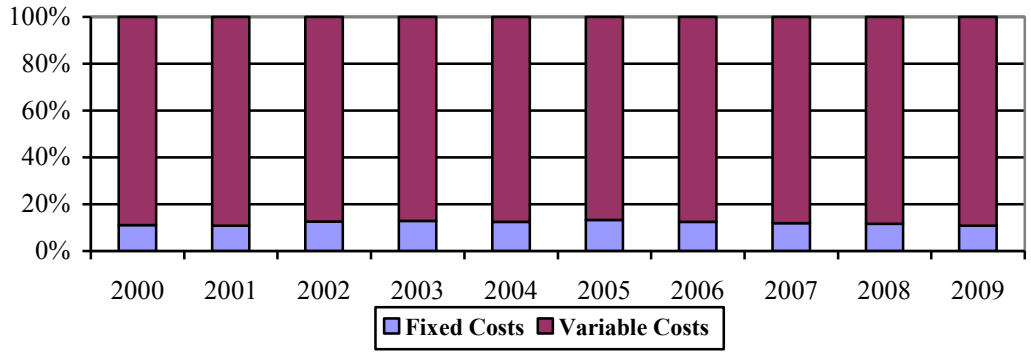
Cost Structure

A survey of a number of main dealers was undertaken during the research for this study. This examined the accounts of dealers over the period 2000-2009[7]. The initial proposition was that fixed costs would account for a higher proportion of overall costs in the sector[8]. However, the data do not support this idea. Figure 2.4 shows fixed costs as a proportion of total costs. On average, fixed costs accounted for 12.3 per cent of total costs in these businesses with a range of 10.8 per cent to 13.3 per cent. In 2007 and 2008 fixed costs accounted for 11.9 per cent and 11.7 per cent of total costs respectively. This suggests there is not an upward trend in fixed costs, and fixed costs remain a relatively small part of the overall cost base.

[7] Some of the responses only covered the years 2002-2009 but this is not a major constraint on the usefulness of the data. However, the data that were received in respect of 2009 are not fully consistent as the accounting periods for some dealers do not coincide with the calendar year. As a result, data for 2009 are interpreted with caution in the analysis.

[8] As the survey data are in accordance with the accounting practices adopted in the sector, costs do not include the cost of cars but the interest cost of stocking the dealership with new and used cars.

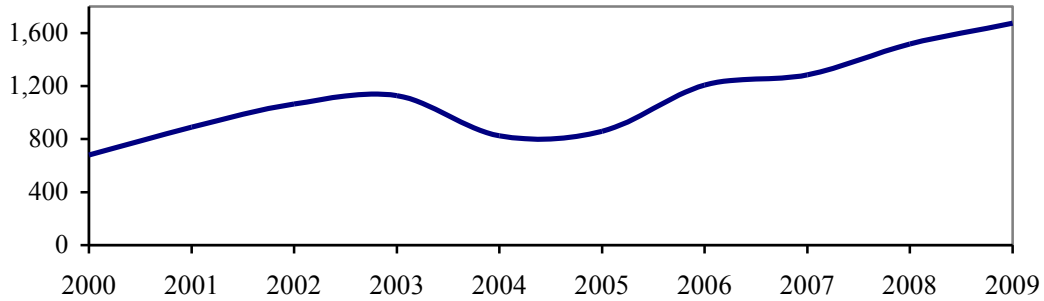
Figure 2.4 Fixed and Variable Costs as a % of Total Cost



Costs per unit sold grew by an annual average of 7.9 per cent over the period 2003-09 while fixed costs grew by 6.6 per cent in this period. Capital repayments on debt averaged about €32 per car sold. This is less than the cost of stocking which averaged about €41 in the period up to 2007 before rising to almost €63 in 2008. As a result, the survey returned no evidence that large investments in premises have distorted or affected the ability of these businesses in general to adapt to the downturn.

Payroll and other labour costs are by far the most important element of the cost base. Labour costs in the businesses included in the survey accounted for just under €25 million in 2008 and accounted for 67 per cent of total costs. Total labour costs grew at an average of 20 per cent per annum in the years of 2003-07 but were almost flat in 2008. This rate of growth is important as it means that labour costs per unit of sales grew rapidly in this period. This is shown in Figure 2.5.

Figure 2.5: Labour Costs per Unit of Sales



The upward trend in this variable in 2001 to 2003 is worth noting as sales in these years were below trend. Labour has not been treated as a fully variable cost as businesses retained labour in the slow years, resulting in unit labour costs rising, and then as sales recovered increased productivity allowed labour costs per unit to fall. This upward trend would certainly appear to be unsustainable. This means that if businesses are to survive there will have to be job losses. However, if labour costs per car sold in 2009 were to fall to their 2007 level then labour costs would have to be cut by about 25 per cent.

A further interesting finding from the survey relates to stocking costs for new and used cars. New car stocking costs declined in 2006 and 2007 but saw a sharp increase in 2008. This has continued in 2009 and the survey data indicate that this cost item

per unit sold in 2009 is almost three times its level in 2006-07 and about double its long term level[9].

A second survey was undertaken that sought information from businesses that had completed major investment projects in recent years. The firms participating in the survey had undertaken investments in premises totalling €73 million since 2002. Approximately 80 per cent of this investment had taken place in the period 2004-06. Clearly, these firms are not typical of the dealership population as a whole but were chosen specifically to identify the costs of investment.

The results show that about 25 per cent of the cost of the investments related to land acquisitions with 66 per cent accounted for by the cost of constructing the premises. Stamp duty, planning costs and equipment made up the remainder. A notable result is that over 52 per cent of the total cost of the investment was financed by equity. In other words, new investment in premises was leveraged at less than 2:1. Almost all of the borrowings were over 15 to 20 years with an average of 13.7 years remaining on loans at the time of the survey. Repayments on this debt averaged €18.50 per car sold in 2007 i.e. something less than 0.1 per cent of the sale price of a new car, rising to €22.50 in 2008 as sales fell.

Clearly, meeting debt repayments in a sector experiencing a sharp fall in sales will be an issue for some. However, as in the cost survey, there is no evidence here that the problems in the sector are as a result of excess investment. Of course, this conclusion is based on averages and it is likely that some dealerships will have problems. However, the key short term issue in response to the downturn in sales is to control labour costs either by cutting salaries or reducing numbers employed.

There are other longer term issues to be addressed. Clearly, with 540 franchise dealers and perhaps 150 other dealers, the motor retail sector is highly fragmented. Even looking at peak year sales of 180,000 new cars – an average of about one sale per trading day per franchise dealer – and 710,000 used cars in 2007 supports this conclusion[10]. Consolidation is likely. Industry research indicates that Irish dealers feel excluded from decisionmaking and a higher level of dis-satisfaction with importers than is typical across Europe[11]. A likely development would appear to be greater interaction between manufacturers and dealers with increasing integration of the existing importers into the operations of the manufacturers. Along side this, there will be an ongoing emphasis on standards in dealerships and the need for investment to protect brand image. In addition, it will be necessary for dealers to have improved access to managerial knowledge about their businesses and to remove barriers to efficiency.

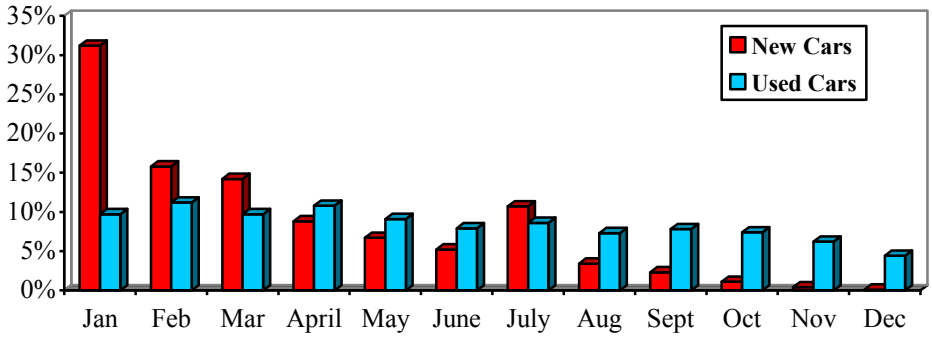
Seasonality of Demand

The highly seasonal nature of the Irish new car market has been identified as one of the main barriers to a more efficient retail sector. Not only is it necessary for dealers to gear up for a busy season and then try to reduce costs during a prolonged slow

[9] The data on used car stocking costs show no similar increase in 2008 and a smaller rate of growth in 2009. However, these data are incomplete so no definite conclusions can be drawn.
[10] At the 2009 rate of sale, the average is about 1 new car per dealer for every 3 trading days.
[11] Reindl, S. (2008) Dealer assistance report for European Dealer Council.

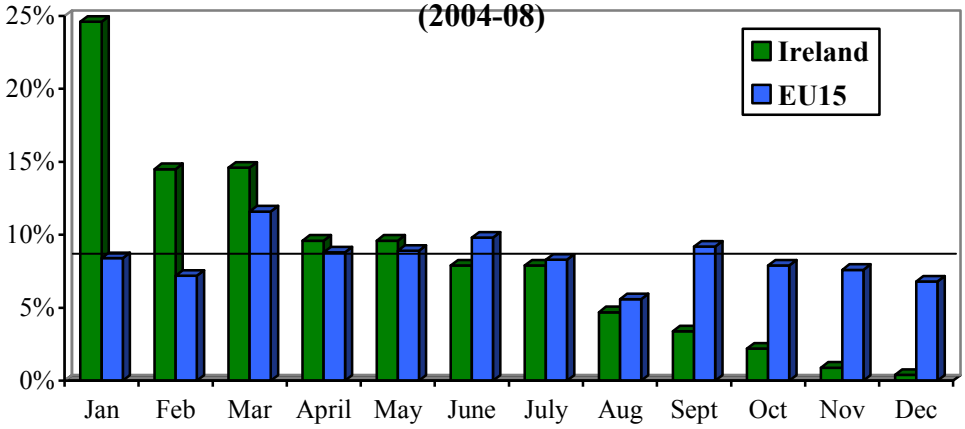
period, but considerable difficulties arise because of differences in the seasonal profiles of new and used cars. Figure 2.6 contrasts the monthly sales profile of new and used cars in Ireland in 2008[12]. In that year, over 61 per cent of new car sales occurred in the first three months of the year compared to less than 31 per cent of used car sales.

Figure 2.6: New and Used Car Sales by Month in 2008



While it may be inevitable that there will always be some seasonality in car sales, the evidence is that this extreme skewness is not typical of other EU countries so that some factors are determining this issue in Ireland. The extent of the seasonal concentration in the first few months in Ireland is contrasted in Figure 2.7 with the much less seasonal distribution in the EU15.

Figure 2.7: First Registrations by Month in Ireland and EU15 (2004-08)



The horizontal line in this figure shows the level that would be reached if registrations were evenly distributed throughout the year. In the case of the EU15 data, the only months that show any notable divergence from average are the peak in March and the quiet period in August. However, the Irish trend is in some contrast with January registrations accounting for almost 25 per cent of total registrations in 2004 to 2008, and the first three months accounting for 54 per cent. In contrast, the last three months of the year accounted for only 3.4 per cent.

This seasonal profile has had a major impact on the economics of the Irish car retail sector and on the way in which it financed. Dealers take new car orders beginning in October for delivery beginning in the following January. This leads to a significant increase in the stock of new cars in November to February. Funding for this stock

[12] The 2008 data for new car sales show an atypical spike in July. This arose as a result of the VRT reform and reflected some sales that had been deferred in May and June.

increase is supplied by the manufacturer through a bank with approximately 60 days interest free after which time interest is paid by the dealer to the bank. Once the car is sold and registered, the bank must be paid by direct debit within five working days.

This build up of new car stocks results in a large VAT refund to dealers in mid-January. Furthermore, as the majority of dealers have a deferred payment system with the revenue commissioners, backed up by a bank guarantee, the payment of VRT is deferred until the 15th of the following month. As a result, dealers find that January is usually positive in terms of cash flow. However, the large VRT debit comes due in mid-February and a large VAT payment has to be made on 15th March balancing the reclaimed VAT in the Nov/Dec return. This greatly distorts cash flow and makes financial management more difficult for dealers.

Almost 80 per cent of new car sales involve a trade in. As discussed, this causes a large build up of used car stocks in the first four months of the year which then reduce gradually until the autumn. Achieving autumn sales of used cars then presents problems as new car sales are effectively finished and the stock of used car stocks has been sold. To avoid a shortage of used cars, dealers buy back cars from rental companies that had been sold earlier in the year. These buybacks are financed almost 100% by banks with interest accruing one month after the car is bought back. In October, the whole process starts again.

This process is expensive for dealers since it significantly increases the working capital requirements of the business. To provide an estimate of this cost, an analysis was undertaken of the cost of seasonality on a leading dealership by comparing the working capital that was required given the existing seasonal profile with what would be required if new car sales were spread evenly throughout the year. New unit sales in this dealership amounted to almost 1,400 cars in 2007, of which just less than 50 per cent were sold in the January to March period and 30 per cent in the second quarter. This is in line with the overall seasonality of new car sales.

It is estimated that the total excess working capital that is required as a result of seasonality amounted to €278 million on an annualised basis, equivalent to €1,485 per new car sold. Interest payments on the excess working capital requirement, calculated at the 2007 overdraft interest rate of 8.5 per cent, amounted to over €126 per car. This is a pure cost of the skewed seasonal sales profile. Given total sales of new cars of 187,000 in 2007, the cost to the industry of the excess working capital needed to handle the implications of seasonality for stocking amounted to €23.6 million. This provides an estimate of the efficiency loss arising from the extreme seasonality.

However, the increase in working capital costs does not fully capture the full costs of seasonality. Risk is an important issue. While inefficient in terms of stocking and operating costs and distorting cash flow, the financing arrangement tended to work in a manageable way up to 2008. However, the combination of factors in 2008 exposed the weakness of the underlying structures and the problems that seasonality can cause. As a result of the VRT reform in July 2008 when used car stocks were very high, already weakened used car prices in Ireland and in the UK as a result of the emerging slowdown in the economy, and a depreciation of sterling against the Euro, the inflow of used cars from the UK rose rapidly and caused their value in Ireland to fall significantly in a short period. Dealers tried to liquidate stocks in order to reduce their

exposure. Not all managed to do so with the result that remaining used car stocks and buy backs were significantly overvalued while sales slowed. Buybacks coming to the market in 2008 were in all cases valued significantly above market value and were in some cases valued above the price of an equivalent new car. This resulted in significant losses for retailers and finance houses alike. The finance companies also lost significant amounts on dealerships that closed in late 2008 and 2009 as many of these dealerships still had these overvalued buybacks.

As a result, by the end of 2008 many dealers found that the arrangements they had in place for used car stocking financing and buy back funding were insufficient and finance companies were unwilling or unable to increase funding. This led to many companies not having sufficient finance to enable normal trading in 2009 and a refusal to take trade-ins. Both retailers and finance houses have now shied away from buybacks and the current situation is that even if a dealership wished to engage in this business, it is difficult to secure the finance to fund these deals. The impact of this disruption is discussed further in Chapter 4 below.

Clearly, this extreme outcome was a combination of a number of factors some of which have passed through the system, although perceptions of risk have changed negatively. However, in addition to indicating the costs and risks that seasonality can lead to, this experience also shows the risks that exist in a market that cannot export to the UK but into which there can be sudden large-scale imports from the UK. As a result, the combination of seasonality and the high residual VRT leads to a sector with higher costs and risks than should be the case. Ultimately these costs are borne by the Irish consumer

Format of the Number Plate

A key element in promoting the seasonality of the new car market in Ireland would appear to be the format of the number plate. The emphasis this format places on the year of first registration confers a premium on cars with the current year's plate. To maximise this premium customers have a strong incentive to purchase the car in the early months of the year. The argument in favour of the number plate is that it provides customers with a clear means of identifying the age of a car and is relatively easy to remember. However, it is debateable whether the plate actually provides an advantage to consumers. While age is an important factor in terms of a car's quality, it is not the only factor and may not be the most important. In any case, the year of manufacture can be easily ascertained by a customer wishing to buy a car. However, the prominence given to this feature of a car due to the plate means that it has become the key factor in pricing used cars. Consultations with operators in the retail sector have consistently indicated that customers place disproportionate emphasis on this factor often over-valuing cars with more recent plates relative to other cars that might be superior in quality.

A second issue is the impact of hire cars for the tourist trade. These cars are generally registered in the first few months of the year and then placed on the market as second-hand cars in the autumn. In 2007, new cars registrations in the car rental fleet amounted to 22,628[13]. Over 54 per cent of sales to the rental sector took place in the

[13] Data supplied by Car Rental Council of Ireland

March to May period with only seven per cent taking place after July. As a result, demand from this sector is highly seasonal although the peak is somewhat later than is the case for sales in general.

Because the used car market is not seasonal and because the UK market is effectively closed to exports of used cars from Ireland due to the level of residual VRT which pushes up the price of Irish used cars, Irish dealers are required to sell in Ireland almost all used cars that are placed on the Irish market. This pushes up the number of cars in stock and thus stocking costs, as dealers are left with a very large number of used cars on their books in the first half of the year. This increases holding periods and drives up costs thereby resulting in an inefficient supply chain. Best UK operators would aim for stock turnover of used cars of perhaps ten times a year: in Ireland used cars typically remain in dealerships up to four months. There is an obvious cost to this in terms of cash flow and working capital, but the potential for depreciation, particularly when the car is held over the change of year, greatly increases the costs. These costs must be covered by sale prices so that the price of used cars is higher than would be the case if these costs could be reduced.

Seasonality therefore gives rise to costs in a number of ways:

- It increases the interest payments on stocking costs as cars need to be held for longer periods. This is clearly inefficient in terms of stock management. Indeed, stockholding costs for new and used cars are the largest cost item after labour costs.
- The high peak in January increases the risk associated with projections as a good month can be taken to indicate a good year ahead. However, as 2008 showed clearly, this can lead to mistakes.
- Dealers need to be geared up with sufficient labour and floor space for the peak, but need to be able to cut back after the first few months. This is costly and not always possible thereby driving up costs and customer waiting times.
- The emphasis on the year in the number plate increases depreciation rates on stock in dealers. This is particularly important if a used car is held over the change of year or is in stock as the final months of the year approach when customers already perceive the car to be a year older. At the same time, it is distorting customers' perceptions of the quality of a car rather than providing transparent information.
- Consultations indicate that the inclusion of the county of registration in the number plate may disrupt prices in used car markets without providing any proof of address of owners.

2.4 EU Policy and the Motor Retail Sector

The Commission's Policy on Car Taxation

While the EU has limited competence in the area of taxation, it has expressed concern that the policies being pursued at national levels are distorting trade in cars in the EU. Its views have been set out in a number of studies. The Commission has concluded that VRT-type taxes, as are currently levied in some member states have detrimental

impacts in terms of both the internal market and the environment. Its work shows that the existing system results in[14]:

- Tax obstacles such as double taxation;
- Tax-induced distortions in cross border trade in cars that can either promote or restrict trade in any particular direction;
- Distortions and inefficiencies that impede the workings of the internal market and reduce the benefits to consumers of the market;
- Productivity losses for manufacturers who cannot fully exploit economies of scale;
- Lack of price and specification standardisation; and
- Lack of optimal taxes to achieve emissions targets, specifically the EU target for car transport of 120g of CO_2 per km by 2012.

The Commission has concluded that registration tax levels should be gradually reduced, preferably with a view to the total abolition of this tax[15]. It has recommended that this action should take place over a period of five to ten years following the adoption of a directive that has been published[16]. In addition, the Commission called for the immediate creation of a registration tax refund scheme in any member state where a registration tax continues to exist so as to remove the distortionary effects of the tax during the transitional period. However, it ruled out that this refund could be considered to be an alternative to the abolition of registration taxes. Although the Commission has subsequently called on member states to adopt its proposal, the European Council has not yet done so[17]. As a result, while Ireland is clearly ignoring the aims of the Commission and its stated objectives, it is not in contravention of any Directive in persisting with VRT

EU Competition Policy and the BER

The EU cars block exemption regulation (BER) exempts from EU competition rules arrangements in the EU for the distribution of new cars and their subsequent servicing[18]. In effect, the BER allows car manufacturers to create networks of selected exclusive dealerships. This exemption was originally introduced as it was deemed that due to the technical requirements of cars and their servicing and the multitude of specifications, customers would be best served if manufacturers could enter into these arrangements while protecting their intellectual capital. However, within a few years the Commission concluded that the exemption was only achieving its aims at the cost of an excess restriction on competition. The result was that consumers were facing difficulties in purchasing cars from other member states, dealers were not able to achieve commercial independence from much larger manufacturers and independent servicing companies were effectively exclude from

[14] European Commission, (September 2002,) *Taxation of Passenger Cars in the European Union*. Communication to the Council and the European Parliament.
[15] The initial call for the total abolition has been subsequently restated that registration taxes would not account for more than 10% of the pre-tax price, provided a refund system is introduced. It is clear that the EU sees this as a 2nd best option but acceptable as an interim target.
[16] *Commission Proposal for a Council Directive on passenger car related taxes* (2005)
[17] *Results of the Review of the Community Strategy to reduce CO_2 emissions for passenger cars and light commercial vehicles*. Communication from the Commission to the Council and the European Parliament (2007).
[18] European Commission Regulation 1400/2002, formerly Regulation 1475/95.

working on many cars. As a result, the original exemption was partly reformed in 2002. This allowed dealers to set up operations in other countries, to stock more than one brand and aimed to facilitate the growth of internet sales of cars. A major aim was to open up the after sales servicing to independent operators.

The EU Commission considers that this reform has been successful in many of its aims and there is some evidence that prices across countries have begun to converge. This is deemed to indicate improved competition[19]. However, the Commission accepted that some elements of the reform have resulted in manufacturers imposing more onerous standards on dealerships. The current BER was due to expire in 2010 but has now been extended for three years.

While the Commission has tended to focus on promoting competition in the after sales areas which it estimates accounts for 40 per cent of consumer expenditure on cars, it is clear that the BER as reformed in 2002 has had an unintended effect as a result of the strategies being employed by manufacturers. Faced with high costs of getting their cars to market and intense competition, manufacturers have tried to impose ever higher standards on dealers and increase their influence in the market. A study on behalf of the Commission found that following the reform of the BER, the number of franchised outlets in the EU fell[20]. The study concluded that this was as a direct result of rationalisation of dealer networks by manufacturers, in particular, the larger brands. This was described as a '*massive campaign of network rationalisation'*. There was also an increase in the direct involvement of manufacturers in car distribution. As a result of increased standards, the compliance costs faced by car dealers rose. Under the BER, the number of dealerships has fallen and the larger groups have increased in size. However, this was not found to result in a reduction in competition but a concentration in higher population density areas. The adoption by manufacturers of selective distribution systems has also worked to ensure that exclusive territories are not as common as previously again increasing competition.

These developments have had important implications for Irish dealers and the system of car distribution. Given the fragmentation of the sector, it is inevitable that rationalisation will occur and will probably accelerate as a result of the current collapse in sales. Manufacturers will increasingly impose standards and while there has been considerable investment in the sector, the wish of manufacturers to protect their brands whose profile depends to a considerable extent on independent dealers will mean that closer integration with the dealer network will continue to be an important element of strategy.

Environment Policy

While EU emissions requirements for light vehicles have existed since the early 1970s, current EU environment policy in relation to cars is included under the CAFE (Clean Air for Europe) programme. While emissions requirements regulated a number of groups of compounds, the EU has generally set non-binding targets for

[19] European Commission IP/08/810, 28th May 2008.
[20] *Developments in Car Retailing and After-Sales Markets under Regulation No. 1400/2002*. report to DG Competition by London Economics, June 2006

CO_2[21]. These have resulting in technical innovations in manufacturers' designs. For example, the Euro-5 regulations make it compulsory to fit a particulate filter for all new diesel cars. The new regulations also require that technical information be made available to independent servicing firms. The EU has also promoted the linking of car taxes to emissions.

Regarding CO_2, the commission has set a target for the car industry that average emissions will not exceed 120g CO_2 per km by 2012. This is to be achieved through better car technologies and through a move towards bio-fuels. This compares to current levels of 160g per km. The European Parliament has backed the Commissions in its objectives. It is generally thought that this is unlikely to be achieved by this date. However, a programme of targets and incentives has been set out. The long term target is that by 2020 the average new car will have CO_2 emissions of 95g per km. This is to be phased in with interim targets for manufacturers starting in 2012. For the first time, the Commission and Parliament have also agreed a series of fines for manufacturers who exceed the targets. From 2012 up to 2018, these excess emissions premiums will be

- €5 for the first gram of excess CO_2 per km;
- €15 for the second
- €25 for the third; and
- €95 for the forth and further excess emissions.

From 2019, manufacturers will have to pay €95 for each gram of CO_2 per km that exceeds the target.

The agreement of this policy approach and the emphasis on linking car taxes to emissions is often interpreted as meaning that the fact that transport causes CO_2 emissions provides a rationale for taxes to address the environmental consequences of these emissions. This was certainly emphasised in the VRT reform in Ireland in 2008. Without wishing to criticise the basis of this argument, it does raise the question as to why there is such an emphasis on this issue in relation to transport but a noticeable reluctance to apply similar analysis to all sectors of the economy where emissions arise.

This development means that reducing the emission per km will be a major objective of manufacturers over the next decade. This will be potentially costly, the premiums providing the upper limit. As a result, there will an increased attention paid to reducing costs in other areas. The supply chain is an obvious area where this attention will focus.

2.5 Impact of the Downturn

With the number of new car sales in Ireland falling by 65% compared to the long run annual averages and sales of used cars falling by large but less catastrophic levels, it is inevitable that there will be a contraction of the economic size of this sector and wider impacts. Within some constraints as a result of data deficiencies it is possible to

[21] Euro 5 targets for NOx and particulates are currently being introduced with further reduction under Euro 6 targeted for 2014.

provide some estimates of what this contraction means. According to SIMI estimates, turnover in 2007 in respect of new cars was about €4.3 billion falling to €3.5 billion in 2008. The 2009 projections would indicate that it will be about €1.4 billion. Consultations suggest that new car sales account for in the region of 40 per cent of revenue in the sector so total turnover will have fallen from €10.75 billion to around €3.5 billion. VRT revenue earned by the exchequer from new car sales is likely to fall from the €1.4 billion earned in 2007 to under €400 million. Similarly, VAT is likely to fall to about €230 million[22].

CSO statistics indicate that in 2006 there were 17,589 people employed in the sale of motor vehicles in Ireland[23]. A further 8,000 were employed in maintenance and 6,319 working in parts supply and repairs. While it cannot be concluded that a 65 per cent fall in the sales of new cars will result in a fall in magnitude of similar level in employment, there is likely to be significant job losses. SIMI have estimated that the fall in sales will result in 5,000 job losses in the sector in 2009.

As with any other part of the economy, the motor sector is not a stand-alone entity but interacts creating demand in other sectors. Thus, this fall in business will impact these other sectors also. According to work undertaken by the CSO, the sector defined as motor fuel, vehicle trade and repair has a gross output multiplier of 1.355[24]. This means that the aggregate reduction in demand for the outputs of other sectors in the economy falls by €1.335 for every €1 fall in gross margins in this sector. The main sectors affected are transport services, post and communications, insurance, real estate, computer services and other business services[25]. As a result, while it is the case that most of sales of the sector are imports, it is not true to conclude that there are therefore no impacts on other sectors of the economy. Combined, the impact on these sectors will mean a fall in demand of €0.24 for every €1 fall in gross margins in the motor sector. Gross margins are estimated to be in the region of 10% of the value of sales so the fall in demand that has been experienced will reduce demand in these other sectors of the economy by about €175 million in 2009.

It is notable that the main impacts all fall on service sectors where employment ratios tend to be high. As a result, the employment impacts of the fall in demand will be substantial. However, employment multipliers are not available to provide estimates of what this impact is likely to be.

Car Components

One of the sectors that have been hardest hit by the fall in car sales is the car components manufacturing sector. This sector is highly dependent on exports and was badly hit in 2008 by the fall in car sales in the UK. However, it has been under competitive pressure for some time in Ireland with some high profile job losses.

[22] These estimate are derived from applying projected sales in 2009 to 2007 tax revenue figures contained in the SIMI's *Pre-Budget 2009 Submission*

[23] CSO (2008) *Annual Services Enquiry 2006*

[24] CSO (2009) *Supply and Use and Input-Output Tables for Ireland 2005*. As with other distribution sectors, the CSO estimate for the motor sector is based on gross margins – the price at which the vehicles are sold less the input cost of the vehicles – rather than turnover.

[25] It is not unexpected that the main sectors of interaction are service sectors since cars are all imported.

However, as a manufacturing sector focussed on exports it is particularly important for Ireland.

According to CSO statistics, there were 21 enterprises in Ireland in 2007 in NACE Sector 343 (Manufacture of parts and accessories for motor vehicles and their engines)[26]. Total turnover was €537 million rising to €548 million in 2007. These enterprises employed 2,835 people with a total labour cost of €91 million. An ongoing weakness of motor sales would seriously affect the sustainability of this employment.

[26] CSO (2008) *Census of Industrial Production* 2007

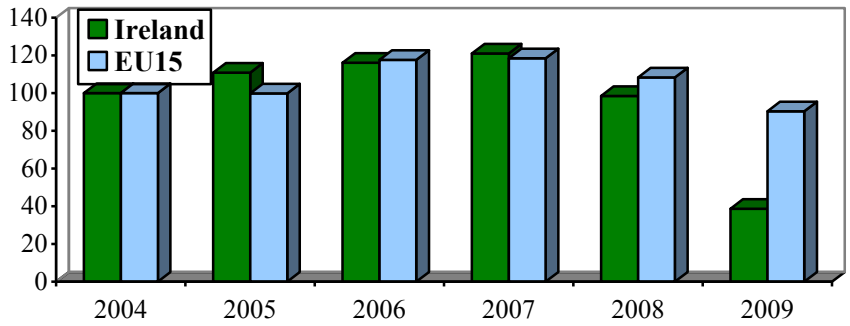
3. Comparative Analysis

3.1 First Registrations in Ireland and the EU

The analysis in Chapter 1 above indicates that first registrations of new cars sold in Ireland in 2009 will be just below 60,000, a fall of 65 per cent compared to the annual average for the period 1999-2007. This contraction in Ireland is far more pronounced than has been experienced in the EU in general. Over the period 2004 to 2008, average annual first registrations in the EU-15 amounted to 15.38 million cars[27]. First registrations in 2008 were only marginally below this average amounting to 15.29 million. The market is far less seasonal than in Ireland with 54.5 per cent of cars being sold in the first six months on average. Registrations in 2009 lead to a projection of 12.78 million cars for the year, equal to 83.1 per cent of the annual average over 1999-2007.

Figure 3.1 shows first registrations of cars in Ireland and the EU-15 compared to the base year 2004=100. In the years 2004-07 the number of first registrations in Ireland grew slightly faster than in the EU-15 – 21 per cent compared to 18.5 per cent – but that the collapse in registrations in Ireland has been much more dramatic in 2008 and in 2009 in particular. In 2008, first registrations in the EU fell by 8.6 per cent and are projected to fall by a further 16.5 per cent in 2009. For Ireland the figures are a fall of 18.7 per cent in 2008 and a further fall of 60.7 per cent in 2009.

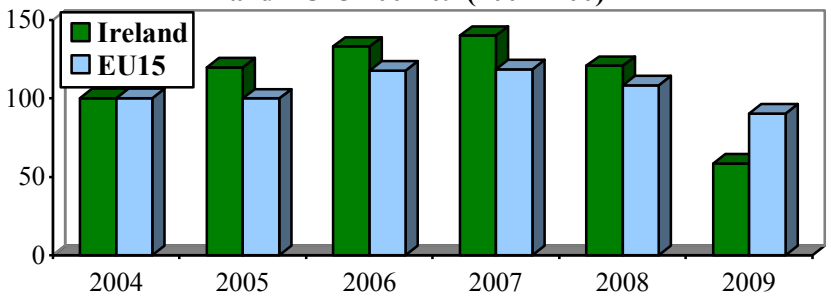
Figure 3.1: First Registrations in Ireland and EU-15 2004-09 (2004=100)



These numbers for first registrations of cars sold in Ireland have been supplemented by imports of used cars. The trend in total new registrations in Ireland – first registrations of new cars plus registration for the first time of used cars in Ireland – is shown in Figure 3.2. In this Figure, it is estimated that the number of imports to Ireland will be about 40,000 in 2009. Close to 50 per cent of imports in recent years occurred in the January to June period. CSO data show that there were 30,455 registrations of used cars in the first six months of 2009, but the rate of import is likely to decline in the second half of 2009 since the sterling has gained against the Euro, overall demand in Ireland has weakened and, most importantly, the excess supply of used cars that was seen in the UK in 2008 has now been sold. These factors are likely to contribute to reduce the price advantage of UK used car imports.

[27] If this shorter time period is applied to the Irish data then the 2009 projection is reduced to 58,344 since 80.7% of new registrations in the period 2004-08 occurred in the first 6 months of the year.

Figure 3.2: All First Registrations (sales plus imports) in Ireland and EU15 2004-09 (2004=100)



The number of cars coming on the Irish market increased by about 40 per cent in 2004-07, compared to 18.5 per cent in the EU-15 – but has fallen sharply since. Even when the supply of cars from the UK is taken into account, the decline in registrations in Ireland has been dramatic with the total falling from about 240,000 in 2007 to 206,000 in 2008 and a projected 100,000 in 2009.

3.2 Car Prices and Taxes in the EU

Prices for similar car models differ between countries for a number of reasons. Table 3.1 shows the before and after prices in January 2009 of the top-10 selling cars in the Eurozone countries in 2008, along with the sales and registration taxes that are imposed at the point of sales[28]. The countries in the table are ordered according to the price of cars after tax.

Table 3.1: Average Car Prices and Tax Rates in the Eurozone

	Average Price before tax	Average Price including tax	Tax Value	Average Tax as % of Price	Effective Tax Rate
Greece	€12,104	€16,212	€4,108	23.7%	33.9%
Italy	€13,433	€16,441	€3,008	18.3%	22.4%
Spain	€13,665	€16,594	€2,929	17.6%	21.4%
France	€13,940	€16,799	€2,859	16.8%	20.5%
Belgium	€14,080	€17,086	€3,006	17.5%	21.4%
Germany	€14,482	€17,227	€2,745	15.9%	19.0%
Austria	€13,867	€17,714	€3,847	21.5%	27.7%
Portugal	€13,190	€18,862	€5,672	29.4%	43.0%
Finland	€12,255	€18,920	€6,665	35.2%	54.4%
Netherlands	€13,488	€19,939	€6,451	31.8%	47.8%
Ireland	***€13,881***	***€19,990***	***€6,109***	***30.6%***	***44.0%***
Average	€13,490	€17,799	€4,309	24.2%	31.9%

Source: European Commission[29]

[28] These models are VW Golf, Peugeot 207 1.4, Ford Focus 1.6, Opel/Vauxhall Corsa, Renault Clio, Ford Fiesta, Opel/Vauxhall Astra, Fiat Punto 1.3, VW Polo and Audi A4

[29] Data on car prices are from European Commission (June 2009) *Car Price Report at 1.1.2009*. Own calculations.

As shown in the demand analysis in the next chapter, incomes have a much greater impact on the decision to buy than does price, although the experience of the past two years would suggest that consumers' perceptions of the sustainability of their incomes i.e. confidence, is the key determinant of demand. In the current year, the deep recession in Ireland has increased price pressures and there is evidence that prices are falling. There are also differences in the way cars are brought to market that affect costs. Estimates provided to the consultants by dealers and manufacturers' representatives place these costs in the range of 30 to 40 per cent of the final price paid by consumers for a car. Manufacturers are following strategies designed to reduce these costs so the supply chain is changing in a direction where manufacturers deal more closely with a smaller number of regional dealers. Small countries such as Ireland also lack scale.

Table 3.1 shows that Ireland is the most expensive country in terms of the retail price of these cars. Prices before taxes are about 3 per cent above the average in the Eurozone. Pre-tax prices in France, Belgium and Germany are higher than in Ireland but it is notable that these countries also have the lowest tax rates. On the other hand, Ireland has one of the highest rates of tax on cars in the EU. An effective tax rate of 44 per cent is levied on these models such that VRT and VAT on average account for 30.6 per cent of the purchase price of these top selling models. This is well above the average so that the effective tax rate on cars in Ireland is almost 1½ times the average rate in the Eurozone. Only the Netherlands (47.8 per cent) and Finland (54.4 per cent) have higher tax rates while Portugal (43 per cent) also levies taxes that are well above average rates. The result is that retail prices including taxes in Ireland are 12.3 per cent above the average in the Eurozone[30].

All EU countries impose VAT on car sales. Table 3.2 shows VAT rates for the main EU countries[31]. In all cases, VAT is levied at the standard rate for the country in question. Apart from the UK and Spain where VAT rates are relatively low and Sweden where rates are high, these EU countries apply fairly similar VAT rates. As a result, the real difference emerges as a result of non-VAT taxes on cars.

Table 3.2: VAT Rates on Cars in Europe (%)

UK	15	Portugal	20
Spain	16	Hungary	20
Germany	19	Belgium	21
Greece	19	***Ireland***	***21.5***
Netherlands	19	Finland	22
France	19.6	Poland	22
Italy	20	Sweden	25
Austria	20		

[30] When other EU countries outside the Eurozone are included price comparisons are somewhat more difficult due to the impact of exchange rate movements. Denmark also emerges as a considerable outlier so it has to be excluded from the analysis. When this is done, Ireland remains the most expensive country when taxes are included and the conclusion remains that Irish tax rates are about 50% above those levied in the EU on average.

[31] These rates are taken form European Commission (2009) *VAT Rates Applied in the Member States on the European Community: Situation at 1st January 2009*.

EU Member states have a wide variety of taxes on cars and it is not the purpose here to provide a comprehensive description of these taxes. Because of the complexity arising from a multitude of exemptions and other criteria, registration taxes are not expressed in the relevant national legislation as simple rates that can be replicated here in a table. However, by using estimates for the total effective tax rates on new cars and subtracting the relevant VAT rates applied, it is possible to provide estimates for the rates of VRT, or its equivalent, in EU countries. These estimates for the effective non-VAT taxes on new cars in EU countries are shown in Table 3.3[32]. This shows that cars sold in Ireland are subject to registration taxes amounting on average to 22.5 per cent of the pre-tax price. This is a little over twice the average for these EU countries.

Table 3.3: Estimated non-VAT Tax Rates on Cars in Europe (%)

Germany	0.0	Austria	7.7
Belgium	0.4	Hungary	10.3
France	0.9	Greece	14.9
Sweden	2.0	Ireland	22.5
UK	2.1	Portugal	23.0
Italy	2.4	Netherlands	28.8
Poland	2.4	Finland	32.4
Spain	5.4	**Average**	**10.4**

Table 3.4 provides a broad overview of vehicle registration taxes in those EU-15 countries, excluding Denmark, where taxes broadly comparable to Irish VRT are levied. As can be seen, the revenue collected from these taxes was highest in Ireland when expressed both as a percentage of GDP and as a percentage of total tax revenue in the economy in 2007.

Table 3.4: Car Registration Taxes in Europe

	Name of tax	Tax as % of GDP	Tax as % of all tax revenues
Ireland	VRT	0.73	2.36
Portugal	Tax on motor vehicles	0.74	2.03
Netherlands	Registration tax	0.63	1.63
Finland	Car tax	0.67	1.57
Greece	Car registration tax	0.44	1.39
Spain	Motor vehicles tax	0.20	0.55
Austria	Duty on vehicles	0.16	0.40
Belgium	Tax on entry into service	0.09	0.22
Italy	Public motor vehicle register tax	0.08	0.19
Average		0.42	1.15

Note: Annual road taxes and their equivalents are not included in this table.
Source: European Commission

[32] Denmark has been excluded from these tables as it is clearly an outlier. It levies VAT at 25 per cent meaning that other taxes amount to 117.5 per cent of the pre-tax price.

In summary, therefore, taxes on cars in Ireland are very high. VAT rates are towards the upper end of the EU range but other taxes are applied at a rate that is over twice as high as the EU average. Only the Netherlands, Finland and Portugal levy taxes at comparable rates while Denmark is a non-comparable outlier. VRT taxes in Ireland in 2007 also amounted to a much higher proportion of total tax revenue than in any other EU country.

3.3 Car Prices in Ireland and the UK

From the point of view of the retail sector in Ireland, the tax rates levied elsewhere in Europe are largely irrelevant, with the exception of the UK. The reason of course is that only Ireland and the UK have right hand drive cars so only these countries could ever be considered to be in a position to have a shared market.

Data on prices for the top-10 selling cars in 2008 were analysed over the period 2001-2008, (the volatility of the Euro/UK£ exchange rate in 2009 complicates comparisons in this year). Table 3.5 compares trends in Irish and UK car prices measured in Euro. The data show that pre-tax prices were somewhat lower in Ireland than in the UK for most years in this period although there they would appear to be converging. Prices including taxes are considerably higher in Ireland due to the much higher taxes that are levied.

Table 3.5: Comparison of Irish and UK Car Prices Trends (Euro)

	Including tax			Pre-tax		
	UK	Ireland	IR/UK	UK	Ireland	IR/UK
2001	€14,436	€16,491	1.14	12,287	€10,815	0.88
2002	€14,225	€16,749	1.18	12,116	€10,823	0.89
2003	€12,613	€17,168	1.36	10,732	€11,164	1.04
2004	€14,156	€18,046	1.27	12,047	€11,768	0.98
2005	€15,496	€19,195	1.24	13,188	€12,395	0.94
2006	€15,585	€19,523	1.25	13,235	€12,621	0.95
2007	€16,848	€20,575	1.22	14,239	€13,620	0.96
2008	€16,079	€20,869	1.30	13,547	€13,709	1.01

Source: European Commission

The comparison of Irish and UK car prices is sensitive to the Euro/UK£ exchange rate and the base year chosen. The pre-tax price of cars in Ireland rose 26.8 per cent over the period 2001-2008. When measured in Euro the price of the same UK cars rose 10.3 per cent. However, if exchange rates had remained constant at their 2001 rate the UK price would have risen by 31.3 per cent. Therefore, a weakening of sterling between 2001 and 2008 mitigated the trend in UK prices in Euro terms over the period by around 20 per cent.

A key issue regarding the relative prices of cars in Ireland and the UK is the rate of tax that is applied in Ireland. Table 3.6 compares taxes on cars in Ireland and the UK in this period[33]. The data in this table on the effective tax rate i.e. the tax value as a

[33] The fact that the UK values are given in Euro has no impact on the calculations in this table.

percentage of the pre-tax price is a particularly interesting comparison that is not impacted by exchange rates. This table shows that the effective tax rate on new cars in Ireland in this period averaged 53.8 per cent compared with 17.8 per cent in the UK. As a result, on average, the tax rate in Ireland was just over three times the rate in the UK. However, this ratio has fallen somewhat in recent years and is just over 2.5 times in 2009.

Table 3.6: Comparison of Irish and UK Post Tax Prices

	Tax Value		Effective tax rate %		Irish tax as % of UK
	Ireland	UK	Ireland	UK	
2000	€6,228	€2,457	66.5	18.5	360.5
2001	€5,676	€2,149	52.5	17.5	300.0
2002	€5,926	€2,109	54.8	17.4	314.5
2003	€6,004	€1,881	53.8	17.5	306.8
2004	€6,278	€2,109	53.3	17.5	304.8
2005	€6,800	€2,308	54.9	17.5	313.5
2006	€6,902	€2,350	54.7	17.8	307.9
2007	€6,955	€2,609	51.1	18.3	278.7
2008	€7,160	€2,532	52.2	18.7	279.4
2009	€6,109	€1,860	44.0	17.1	256.8
Average	€6,404	€2,228	53.8	17.8	302.3

This ratio of the effective tax rate in Ireland relative to the UK was calculated over the top-10 selling models only. The calculation was redone for all models in the EU dataset and shown in Table 3.7[34]. The UK prices in this table are calculated using the average exchange rate in Q2-2009 when €1 = UK£0.88. This wider range of models has the effect of increasing the average price as it includes more high priced models[35].

Table 3.7: Comparison of Irish and UK Car Prices (2009)

	Ireland	UK	Ireland as % of UK
Average price after tax	€33,950	€20,434	166
Tax value	€12,557	€3,178	395
Tax as % of purchase price	37.0	15.6	237
Effective tax rate %	58.7	18.4	319

Source: European Commission

The data in this table clearly show one of the major issues in the car sector in Ireland. The effective tax rate on cars in Ireland is 3.2 times the rate in the UK when measured across this broad range of models.

This analysis indicates that when measured in Euro, pre-tax car prices in Ireland have been somewhat lower than in the UK but that they are converging. However, this apparent trend may be as a result of exchange rate changes since car price inflation in

[34] This amounts to almost 80 models for each country.

[35] Weighting the average according to the number of sales of each model would provide a more accurate measure of the average price of a car sold in each country. However, it would not provide a more accurate picture for the purposes of this analysis since the lower prices in the UK would enable people to buy a higher proportion of more expensive cars.

Ireland since 2001 has been lower than in the UK. The overall conclusion is that there is very little difference in pre-tax prices between the two countries. However, taxes are much higher in Ireland resulting in higher retail prices.

3.4 Environmental Taxation and Taxes on Fuels

The issue of environmental taxes has been gaining increasing importance in the EU under the general heading of the CAFE Programme discussed above. Although the introduction of environmental or 'green' taxes was effectively shelved by the Irish government in 2006, it is highly probable that the imminent report of the *Commission on Taxation* will place the issue back on the agenda[36]. Of course, whether for environmental or tax revenue purposes, fuels are fairly heavily taxes in EU countries. Table 3.8 shows the value and rate of total taxes – VAT and excise duties – levied on 1,000 litres of Unleaded 95 petrol. These data show that Ireland levies taxes on fuels at a rate that is somewhat less than the average for these EU countries but that the rate is well below the rate applied in the UK[37]. Only Hungary Greece, Poland and Spain have significantly lower taxes on petrol. Despite this, VAT and excise duties on fuels in Ireland amounted to €2.65 billion in 2007[38]. As a result, this is an important element in overall tax revenue.

Table 3.8: Taxes on Petrol in EU Countries

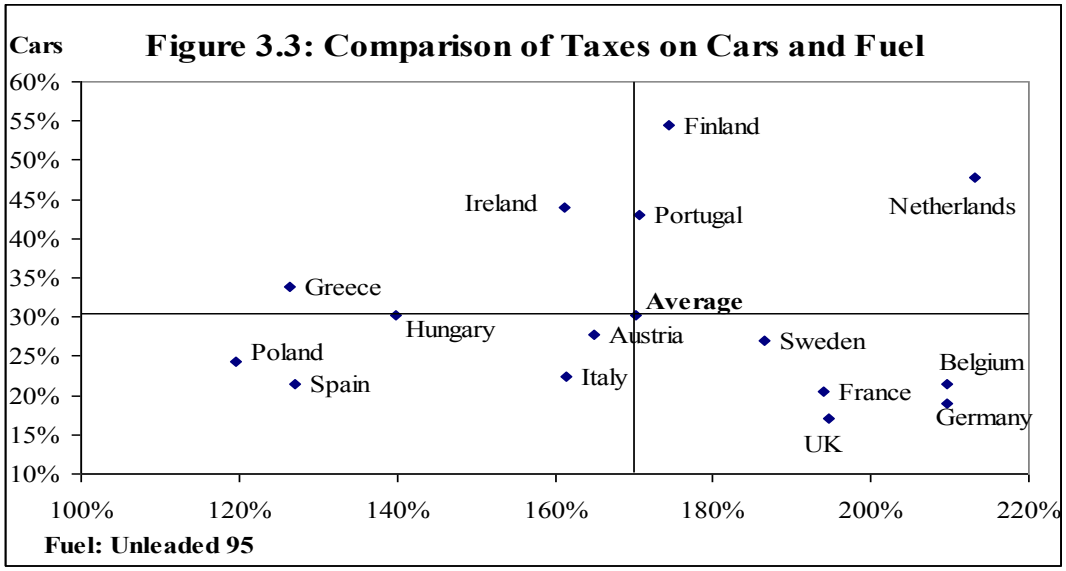
	With tax	Without tax	Tax	Tax rate %
Austria	€1,063.00	€401.15	€661.85	165.0
Belgium	€1,218.50	€393.45	€825.05	209.7
Denmark	€1,291.93	€471.25	€820.69	174.2
Finland	€1,343.00	€489.51	€853.49	174.4
France	€1,222.20	€415.71	€806.49	194.0
Germany	€1,265.00	€408.53	€856.47	209.6
Greece	€1,048.00	€462.65	€585.35	126.5
Hungary	€1,069.09	€445.90	€623.19	139.8
Ireland	€1,147.00	€439.13	€707.87	161.2
Italy	€1,251.29	€478.74	€772.55	161.4
Netherlands	€1,345.00	€429.57	€915.43	213.1
Poland	€1,055.84	€481.08	€574.76	119.5
Portugal	€1,257.00	€464.55	€792.45	170.6
Spain	€1,034.88	€455.64	€579.24	127.1
Sweden	€1,112.49	€388.28	€724.21	186.5
United Kingdom	€1,188.45	€403.39	€785.06	194.6
Average	€1,118.43	€444.74	€673.70	153.0

Source: EU Oil Bulletin, 24th July 2009

It will be recalled from the analysis of car prices above that Ireland, along with Portugal, Netherlands and Finland had car taxes significantly above the EU average. However, Ireland is the only country among these where taxes on fuel are below the

[36] Relevant material from Commission on Taxation report will be summarised if available before submission.
[37] All references to averages in this section are to unweighted averages.
[38] SIMI *Pre Budget Submission* 2009

average. On the other hand, countries such as France, Belgium, Germany and the UK, where car taxes were low, all have fuel taxes well above average. Only Poland, Spain and to some extent Italy have low fuel and car taxes. This situation is illustrated in Figure 3.3 which shows a scatter plot of tax rates on fuel and cars.



The conclusion emerging therefore is that Ireland, when compared to other EU countries and in particular to the UK, levies taxes on cars that are well above the average but levies taxes on fuel that are significantly lower. Ireland is the only one of the high VRT group that does this.

Research suggests a number of good reasons why Governments should levy fairly high taxes on fuels:

- The elasticity of demand for fuel is low in the short run so tax revenue can be predicted with some certainty and purchasing decisions are not distorted by high taxes. While demand for oil falls in recessions, this is driven by manufacturing and transport of goods, not by large falls in demand for petrol at retailers;
- As a result of the market power of the OPEC cartel, there is a good probability that if governments did not levy high taxes OPEC would simply push up oil prices to a level just below what would allow alternative energy sources to become competitive on open markets so that the retail price of petrol would not really fall much even if taxes were lowered;
- Fuel taxes balance the subsidies that are given to production and can be used to reduce the pollution and to address the impacts of pollution i.e. the polluter pays. In addition, fuel taxes could actually save money by avoiding the cost of green credits if the country is in breach of the Kyoto Protocol targets;
- Fuel tax is a good proxy for road usage and is more cost effective than congestion charges to tax usage;
- Fuel taxes are progressive since higher income people tend to drive larger cars, have more cars per household and use public transport less;

- Although the short run elasticity of demand is low, high taxes do encourage fuel conservation in the longer run through making alternatives competitive and therefore help to conserve finite oil stocks.

There are three important implications for Ireland arising out of this analysis.

First, in the context of what has happened to the public finances over the past two years, while it is widely accepted that public expenditure has grown unsustainably and that there is wastage that needs to be addressed, neither of these factors explain the huge deficits that have arisen. Instead, the problem is that tax revenues have collapsed. In summary, Ireland's tax system has become hugely dependant on the level of transactions occurring in the economy and that the types of transactions are those most closely related to economic performance and expectations. In effect, tax revenues are highly correlated with incomes and expectations of future incomes. VRT and VAT are typical of such taxes. When incomes fall, car sales fall as shown above. However, while fuel usage has a long term relationship with income – higher income groups typically drive bigger cars with lower fuel efficiency – the short term relationship will be a lot less obvious. People continue to drive in a recession although they might defer buying a car. As a result, shifting the balance towards car usage rather than purchase would improve the sustainability and predictability of tax revenues.

Second, it is not car purchase but car usage that is most closely related to the environmental impacts of cars. This applies to both emissions and to congestion. High purchase taxes, while working to limit the overall number of cars per head of population, do not necessarily limit car miles per person and therefore emissions per person. Furthermore, since the tax is paid on first registration there is a clear incentive to limit the number of first registrations leading to a higher age profile and potentially higher emissions per km travelled. Research also shows that fuel demand would be much higher if taxes were reduced since the elasticity of demand for fuel is actually quite high in the long term. It has been estimated that if Europe had adopted a long term policy of low fuel taxes along the lines of the US, the demand for fuel in Europe would be approximately twice as high as currently[39]. The conclusion is that fuel taxes are probably the single most important climate policy instrument available.

Third, it is legal, fairly simple and desirable that cars can be imported to Ireland from the UK by individuals. High VRT in new cars and residual VRT in used cars has resulted in a persistent net importation of cars from the UK. While VRT must be paid on imports, VAT under EU regulations is paid in the country of registration for new cars. As a result, the Irish government loses out on VAT on cars imported by consumers from the UK.

Estimate of VAT Lost due to Imports

According to SIMI, the number of imports has increased from 13,472 in 2003 to about 60,000 in both 2007 and 2008 i.e. an increase of almost 350 per cent in five years. As shown in Table 3.1 above, the average pre-tax price of the top-10 selling models in

[39] Sterner, T. (2007) 'Fuel Taxes: An important instrument for climate policy'. *Energy Policy*, Volume 35 (6) pp 3194-3203.

Ireland in 2009 is €13,881; when averaged across all models this increases to €21,393. The greatest savings with imports are to be made on more expensive models so the average first sale pre-tax value of a car imported from the UK will be somewhere in this range. The mid-point of the range is €17,637.

The impact of imports on VAT depends on how an import affects new car sales. For any individual, an imported used car may be a substitute for a used car in Ireland. While there is residual VAT in the price of the car to the individual purchasers, there is no net additional revenue earned by the exchequer. However, this approach is inadequate when the analysis is done from the point of view of the sector in aggregate. There is a desired stock of cars in Ireland that is replenished either by the sale of new cars or by imports of used cars. Thus, in aggregate, the import of a car displaces the purchase of a new car in Ireland and so, since the VAT on that car will already have been paid in the UK or elsewhere, every used car imported means that there is VAT lost equivalent to what would be paid on a new car.

If it is assumed that the number of cars being imported in 2003 represented a normal level of imports that arises from migration between the two areas and that this would have increased to 15,000 in 2008, then the remaining 45,000 imports arose because of the price differences between the two countries. As a result, the cost in 2008 of the distortion in terms of lost VAT for 45,000 cars at the mid-point value was €170 million. Shifting the burden of taxation onto fuel would reduce the incentive to buy in the UK – and therefore the loss of revenue – since for all but a minority of people along the border it is not practical to buy petrol in the UK while driving mostly in the Republic. In any case, as shown in Table 3.9, taxes on petrol in Ireland could increase by over 20 per cent above their current rate – equivalent to an additional €80 per 1,000 litres at current exchange rates – before even reaching equality with fuel prices in the UK. As a result, a rebalancing of the overall tax burden on motoring from car purchase prices to fuel prices would raise tax revenues.

Road Tax in Ireland

Road tax is a major source of revenue and totalled close to €1 billion in 2008. The announcement in December 2007 of changes to VRT for implementation in July 2008 also changed road tax rates to a new assessment methodology based on CO_2 emissions. However, this new arrangement applied to cars registered on or after 1st January 2008 only with the old system being maintained for all cars registered before 1st January 2008. The idea was that this revision, in addition to the VRT reform, would incentivise consumers to purchase cars of lower emissions while penalising consumers who wished to purchase cars of high emissions by levying higher road taxes. Clearly, this incentive would only affect decisions in respect of new cars since existing registered cars would continue to attract the existing road taxes.

The annual car road tax rates range for new cars is now from €104 per annum to €2,100 per annum. This range is considerably wider than previously, when the rates ranged from €172 per annum to €1,566 per annum. While applying this new arrangement to new cars only was probably thought to be the best way to reduce the overall emissions of the car stock – applying it to existing cars would affect their relative prices but would be unlikely to put high emissions cars off the road – the impact has been to distort the market with the effect that cars with similar levels of

CO_2 emissions are taxed at different rates solely because of the date of registration. For example, a 2007 VW Passat Diesel (Engine 1.9 Tdi 105 BHP) and its 2008 equivalent both have identical CO_2 emissions 148g per km. However, the 2007 Passat has annual road tax of €582 while the 2008 Passat has annual road tax of €290. Over 3 years – which is a typical period of ownership – this amounts to a difference in running costs of €876. The result is that the 2007 model is effectively devalued by this amount in the eyes of the consumer. Thus, the tax change has distorted the market with no advantage in terms of saving emissions.

The change also had a disruptive impact on the used car market. For example, if a 2007 Audi Q7 is compared with the 2008 model the annual road tax on these vehicles increased from €1,566 to €2,100. This created a major problem for dealers during 2008 since these types of vehicles have a long order lead time and orders have to be placed several months in advance. Dealers who had orders in the system found that there was no market for them after the changes were implemented. Many such vehicles were exported to the UK resulting in substantial losses due to the weakness of sterling at the time. At the same time there is excess demand for pre-2008 vehicles of this type and they are being imported from the UK.

The new system would appear to be a compromise between the wish to align road tax with emissions levels and simultaneously limit the potential for a serious reduction in revenues since under this arrangement most car owners will continue to pay road tax at the old rates. However, the reform has given rise to a situation where there are cars first registered before January 2008 with lower CO_2 emissions that are taxed at least as high as cars with higher CO_2 emissions but were registered after January 2008. Clearly, this is not optimal. For example, compare a 2008 Passat as above with a VW Polo 2007, 1.2 l. petrol. The polo has CO_2 emissions of 138g per km i.e. lower than the Passat. Because it was registered in 2007, it is taxed at the same level as a 2008 Passat so there is no incentive to buy the lower emissions car[40].

This brief discussion highlights the need to take due recognition of the potential for tax changes to disrupt the car market. The car tax reform that was introduced certainly seems to have had a disproportionate impact on the market, in part arising from its differentiation of similar cars according to their year of registration. This would appear to suggest that there is a good case that a uniform system of road taxation should be used, based on CO_2 emissions, and applied to all vehicles irrespective of the year of registration.

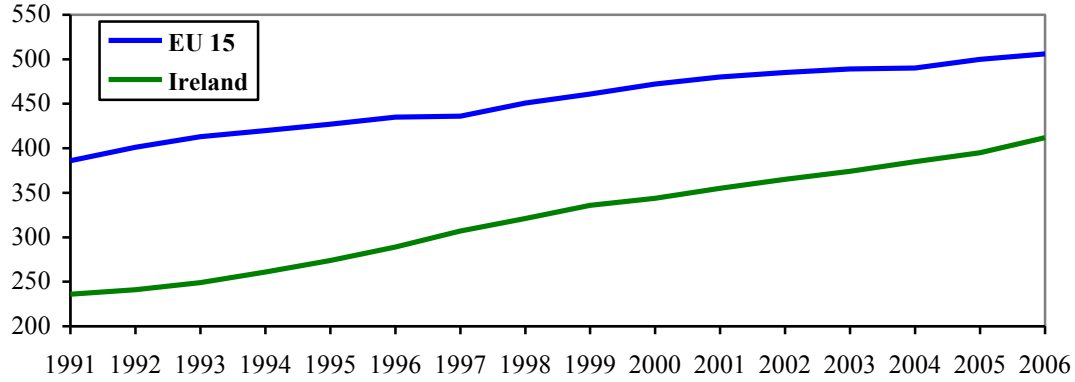
3.5 Car Ownership Rates in Ireland and the EU

Variables such as car ownership rates will tend to converge over time on EU levels, making allowance for structural differences such as the major factors that determine ownership levels, such as the starting base of car densities, the cost of cars, and demographic factors such as projected population growth rates, the age structure of the population and population densities.

[40] The polo is taxed at €286 per annum while the Passat is taxed at €290 per annum. A new Polo would be taxed at €150 per annum.

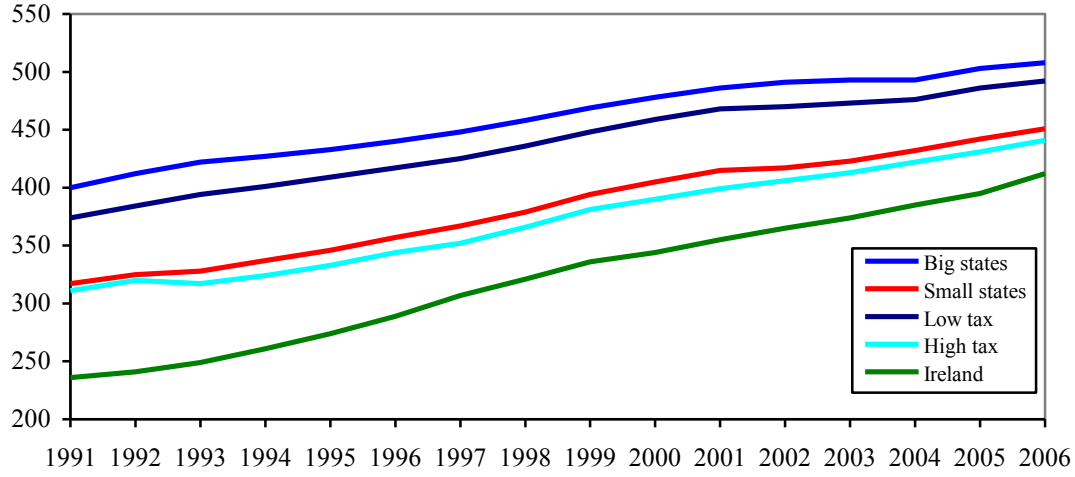
The number of passenger cars per 1,000 inhabitants is shown in Figure 3.4 for Ireland and the EU-15 for the period 1991 to 2006[41]. The figure shows that car ownership rates in Ireland have been increasing they remain significantly lower than this average. However, the gap has been closing. In 1991, the ownership rate in Ireland was only 61 per cent of the EU average. This reached 71 per cent in 1998 and 81 per cent in 2006. During this period, the number of cars per 1,000 inhabitants in Ireland grew at an average rate of 3.8 per cent per annum. The average annual growth rate for the EU-15 was 1.8 per cent. Clearly, as might be expected, Ireland is converging on the EU average but has some distance to go. A continuation of these trends would mean that Ireland would converge on the EU-15 average of 619 cars per 1,000 population in 2017. However, the current collapse in registrations in Ireland means that this won't be achieved while differences in the age structure of the two areas will also affect the rate of convergence.

Figure 3.4: Cars per 1,000 Inhabitants: Ireland and EU15



This EU average hides an important difference between EU countries in terms of car ownership. This is illustrated in Figure 3.5. This shows ownership rates for four groups of countries: large and small member states, and countries with high tax rates and those with low tax rates[42].

Figure 3.5: Cars per 1,000 Inhabitants



[41] All data in this section are Eurostat

[42] The six small states are Austria, Belgium, Finland, Greece, Netherlands and Portugal. The 6 large states are Germany, France, Sweden, Italy, Spain and the UK. The high tax states are Finland, Netherlands and Portugal. The other nine states are considered to be low tax. Of the remaining states in the EU-15, Luxembourg is included with Belgium and Denmark is excluded as it is considered to be a large outlier as discussed earlier, while Ireland is used as the comparator.

This chart shows a number of interesting features. First, even when EU countries are divided into large and small states and when the existing tax rates are controlled for, car ownership in Ireland remains below all the averages. Second, it is clear that while the size of the country would initially appear to be a determinant of car ownership, the true factor is the level of taxation in the purchase price. All three countries with high tax rates are small but even so Ireland lags this group in terms of car ownership with 93 per cent of the average rate in 2006. This has increased from 76 per cent of the average in 1991. The key variable for consideration therefore is not the size of the country but the level of taxes on new cars.

The average growth rate of the number of cars per 1,000 inhabitants in low VRT countries was 2.35% in the period 1991 to 2006 compared to 1.85% in countries with high VRT. The two groups are converging but only slowly and, even if the current rate of convergence was maintained, they would not reach similar rates of car density until 2028. Ireland is clearly starting from a low base in terms of car ownership. It is converging towards EU norms but the level of convergence will be determined by whether Ireland remains a high tax country or alters the size of the wedge between the pre- and post tax price of cars.

3.6 Recent Policy Incentives to Promote the Sector

The growing realisation during 2008 that the recession was becoming more than a regular cyclical downturn led to the introduction of a number of measures by European governments to support the motor sector. However, the extent of the interventions that are allowable and desirable must be constrained not only by ensuring that a viable return is identified but also by ensuring that measures are not being introduced by governments with the aim of supporting manufacturers in their countries to the detriment of trade in the EU. Indeed, initial proposals for intervention to support manufacturers soon drew accusations of protectionism. As a result, while there will inevitably be greatest pressure on governments in countries with important car manufacturing industries to introduce supply-side supports, a number of interventions have been directed at stimulating consumer demand, often with ancillary measures to support fuel efficiency or lower emissions. These are summarised in Table 3.9.

Table 3.9: National-level Interventions to Support Demand

Country	Brief Description
Germany	Scrappage scheme (€2,500) for vehicles over 9 years if new vehicle less than 1 year old. Total value €5 billion.
France	€1,000 allowance for new car with CO_2 emission less than 160g/km to scrap car over 10 years. French manufacturers are supplementing the scheme by extending to nearly new cars. Light trucks also.
Italy	€1,500 scrappage for cars over 9 years against new car with CO_2 emissions below 140 g/km. or for replacement with hybrid fuels. Light trucks also.
UK	£2,000 scrappage for new cars or small vans against similar aged over 10 years old. Limited to £300 million budget or 1 year to be funded by 2p increase in fuel taxes.

Spain	Zero interest finance on first €10,000 of price of new vehicle for vehicle priced at less than €30,000 with CO_2emissions below 140g/km
Poland	€1,000 scrappage scheme for car over 10 years for new car with CO_2 less than 155 g/km. To be financed through new green tax.
Greece	Scrappage scheme worth up to €800 per vehicle
Austria	Scrappage of €1,500 for cars older than 13 years for new car with emissions less than 140 g/km
Romania	€1,000 scrappage for cars over 10 years when new car purchased
Netherlands	€1,000 scrappage for cars over one year. Vans also included. Total budget €65 million.
Portugal	€1,000 to €1,250 scrappage for vehicles over 10 years if new car with emission below 140 g/km is purchased.
Slovakia	€1,000 scrappage for new vehicles
Belgium	Existing incentive scheme of 15% price reduction to purchase cars with CO_2 emission below 105 g/km and 3% up to 115 g/km

Source: CECRA *Survey of National, European and Industrial Measures to Face the Economic Crisis*

The most common initiatives have been scrappage schemes and there have been a number of these introduced to date. To date, no comparable or other measures have been introduced in Ireland. Instead, as discussed in Chapter 2, the VRT revisions that have been introduced worked to disrupt the market at a particularly important juncture.

3.7 Efficient Taxation and Taxes on Cars

The analysis in this chapter has shown that cars are highly taxed in Ireland, particularly in comparison with other countries. Specifically, it shows that:

- The level of VRT means that Ireland is in a high tax and high retail price group of countries with taxes and prices well above most EU countries;
- For the average of the top-10 selling car models, relatively high pre-tax prices plus high taxes mean that, apart from Denmark, which is a considerable outlier, Ireland is the most expensive country in Europe in which to buy a car;
- On average, just over 30 per cent of the retail price in Ireland is made up of tax with an effective tax rate of 44 per cent. When an unweighted average is taken of a broader range of models, the effective tax rate rises to almost 59 per cent;
- Ireland is highest among all EU countries in terms of the proportion of GDP that accrues as VRT, and VRT as a proportion of all taxes levied in the economy
- The effective tax rate in the UK for the top-10 models is 17.1 per cent. When the broader range of models is used for comparison, the Irish tax rate is 3.2 times the rate applied in the UK.

The position of the consultants is that while these findings point to a sector that is very highly taxed and to the likely conclusion that its growth has been inhibited by the level of taxes, they do not, in themselves, provide a definitive conclusion that the level of VRT or VAT should be reduced as a result. Taxes must be raised and it

cannot be concluded from these findings alone that very high taxes on cars are not the best way to achieve this. Furthermore, there is no *a priori* 'correct' level for taxes i.e. it may be the case that Ireland has it right and other countries need to revise their systems.

What Does Efficient Taxation Mean?

The correct standard against which to assess whether taxes should be revised is not the level of taxation but the efficiency of the tax system. By this is meant the costs that are imposed on the economy in terms of distorting consumer decisions, and thereby reducing their welfare, and such other costs as may arise such as restrictions effectively imposed on the growth of the sector, costs arising from the age of cars, distortions to trade and competition, etc. Ideally, creating an efficient system of taxes would not start from achieving any particular level of revenue stream. However, the realities of the current fiscal situation means that protecting the value of existing revenue stream must be given considerable priority, even if there is reason to believe that the means employed to raise this revenue are not efficient. Bearing this constraint in mind, the recommendations below aim to improve the efficiency of the tax system i.e. reduce the cost of raising tax revenue, while maintaining the value of the revenue. As a result, they are formulated with an initial constraint of revenue neutrality. Of course, given the uncertainty that always accompanies forecasts of tax revenues, this cannot always be guaranteed precisely. However, it is the view of the consultants that the distortions that have arisen as a result of the current structure of taxes are such that there are opportunities to both reduce the distortionary impact of the taxes and increase revenues.

The Rationale for Reform of Car Taxation in Ireland

Clear indicators have been uncovered that taxes are distorting activity. These include:

- A high correlation between the level of VRT and car ownership levels across countries and Ireland is well below most other EU-15 countries in terms of ownership. This indicates that high registration taxes distort consumers' decision regarding ownership thereby reducing consumer welfare. Furthermore, as pointed out by the EU Commission, registration taxes reduce trade thereby making if more difficult if not impossible for consumers to avail of the full benefits of the EU internal market as there are effectively national markets in many cases.
- As discussed above, the EU Commission has concluded that VRT-type taxes, as are currently levied in some member states have detrimental impacts in terms of both the internal market and the environment. It has concluded that registration tax levels should be gradually reduced over a period of five to ten years following the adoption of its proposed directive with interim measures for those countries which retain registration taxes.
- The lack of an integrated cross-border car market is particularly important in the case of Ireland. This is not just a matter of Irish consumers paying more for cars than in the UK since, as the past couple of years have shown Irish consumers can import cars from the UK. Instead, the issue is inefficiencies that are introduced into the Irish supply chain as a result of the effective restrictions on Irish owners exporting to the UK. In just about any other tradable goods or services sector, Irish policy is focussed on promoting exports; in the case of cars it effectively prohibits exports. The real (negative) impact of this arises as a result of the seasonality of the Irish new car market

as discussed in greater detail below. If an export market was available then excess used cars could be quickly sold on. However, the only potential market is the UK where the relative size compared with Ireland means that the additional supply from Ireland would have no real impact on prices. However, the residual VRT in used cars in Ireland means that this market cannot be supplied by Irish dealers without incurring greater losses.

- Such limited research as is available suggests that there may be considerable deadweight losses from registration taxes and that there can be socially regressive effects. For example, a study of vehicle property taxes in the US found that every 1 per cent increase in the tax lowered vehicle ownership by 5 per cent[43]. Furthermore, because it was found that higher and lower income households would react differently if taxes were changed, the study concluded that there were regressive social effects, i.e. lower income households were disproportionately affected by the tax. Overall, the study found that the existing car tax had a deadweight loss of 25 per cent i.e. it cost $1.25 to raise $1 in tax. This does not seem particularly high until it is recognised that the tax rate in question in the study was levied at an average rate of only 2.1 per cent. It is generally accepted that the deadweight loss of taxes rises at a rate equal to the square of the rate of tax. Thus, a tax rate of 3.5 per cent, which was also assessed in the study, had a deadweight loss of 42 per cent. While it is not proposed that this finding can mechanically be applied to Ireland which levies average VRT of over 20 per cent, it does indicate that the deadweight loss of VRT is high.
- While progress is being made towards reaching the EU's objective of 120g of CO_2 per km by 2012, the Commission has concluded that further measures will be required if the objective of 130g per km for the average new car fleet is to be achieved. These include supply side measures focussed on new car technology and lower fuel usage, and demand side measures such as information and tax reform. The Commission, which has concluded that '*car taxation is a powerful instrument to influence the purchase decisions of consumers',* urges the adoption of its proposal, referred to above, on these grounds. The stance of the Commission is that registration taxes should be replaced with taxes on car usage, such as taxes on fuels, which are more closely related to emissions and which tend to be less cyclical.

The Options for Efficient Reform of Ireland's VRT

There are considerable costs arising from the existing system of car taxation in Ireland, such that there are opportunities for adjustments to be made that would reduce the cost to the economy of raising the amount of tax revenue that accrues from car sales. Indeed, there are opportunities for adjustments to be made to taxes to actually increase the potential value of the revenue stream.

However, the process of reforming taxes, even if there is a long term benefit, is not in itself costless. It is important that the process is undertaken in a manner that minimises disruption. This issue has been recognised by the industry and a notable

[43] Craft, E. and R. Schmidt (2005) An Analysis of the Effects of Vehicle Property Taxes on Vehicle Demand. National Tax Journal, Volume 58 (4) pp. 697-720. This finding does not mean that ownership rates fell by 5% but arose from a combination of lower ownership and cheaper car models according to pre-tax prices.

feature of the most recent pre-budget submission from SIMI was a call for stability and no further change to VRT[44]. The rationale for this was the disruption that resulted from the VRT reform introduced in mid-2008 which had a number of adverse consequences, not least because of the timing of the reforms, just as the sector was entering a downtrend. Reform of VRT to reduce the excess costs that are imposed on the economy must therefore balance the need to reform the tax with the need to ensure that the sector is not disrupted, such as would be the case if consumers were given an incentive to defer a purchase decision. This is particularly important in the light of the expected weakness of the sector as detailed in the projections in this report.

Several options present themselves as alternative approaches for consideration.

- The first is that VRT be reduced in a single move. Should this be the preferred approach then it should be done in the short run so as to avoid the ongoing deadweight costs of the tax.
- The second is that the tax should be removed in an incremental series of reductions according to a pre-announced programme in order to reduce uncertainty about the future.
- The third option is based around the EU emissions targets which aim for lower emissions such that by 2020 most new cars will have CO_2 emissions below 100g/km. By that stage VRT revenues will be so small that it could be fully removed without material impact.
- The final option considered is that the tax is eliminated and alternative sources of revenue are generated according to a pragmatic timetable that minimises the disruptive impact on purchasers' decisions.

Irrespective of the approach taken, the consultants are of the view that, given the current difficulties in the public finances, it is necessary to ensure that the reform is revenue neutral. This can be best done by rebalancing the taxes towards taxes on fuel usage. Not only would this have a much improved relationship with usage, it would provide an incentive to drive less frequently and to drive newer more fuel efficient cars. It would also address the imbalance in Ireland's reliance on registration taxes and VAT on cars relative to fuel taxes on the basis that that Ireland is out of step with other EU countries in having a combination of high car taxes with relatively low fuel taxes.

Using 2007 as a reference year, total petrol consumption was 1,983 ktoe and diesel consumption was 2,776 ktoe[45]. Most of this petrol but only about 12.5 per cent of the diesel is used in private cars. This would give an estimate of 2,300 million litres of petrol and 350 million litres of diesel used as fuel in private cars. Given this ratio of almost 7 to 1 in terms of fuel type and the wish to avoid placing an extra cost on general industry, the estimates below assume that the full cost of any reduction is VRT is recouped through increased taxes on petrol. This would clearly provide an incentive for car buyers to purchase diesel cars. Clearly, it would be desirable if a mechanism could be identified whereby the excise duty on diesel for use in private cars could be increased without increasing fuel costs for the transport industry at

[44] SIMI *Pre Budget Submission 2009*

[45] SEI (2008) *Renewable Energy in Ireland*. ktoe means kilo tonne of oil equivalent. Standard conversion factors are that 1 million litres of petrol equals 0.86 ktoe while 1 million litres of diesel equals 0.98 ktoe.

large, or if some form of clawback mechanism could be devised. This would allow for the increased excise duties to be levied on diesel as well as on petrol. However, even if this was done, the fact that diesel accounts for only a fairly small fraction of the total car stock means that the conclusions that result from the calculations below would still stand, although each identified increase would be reduced by about 13 per cent.

Total VRT on cars in 2007 amounted to €1,376.4 million. This was derived from 180,754 new cars and 58,719 imported cars. These imported cars were mostly used cars and cheaper than the Irish equivalent. Therefore, assume a 25 per cent value discount for these cars relative to the new cars sold in Ireland. This would mean that new car sales in Ireland accounted for 80 per cent of VRT revenue. New car sales in 2009 will be about 60,000 while imports will be down although by a much smaller percentage. If imports amount to 40,000 and a similar 25 per cent value discount is applied, then VRT in 2009 will fall to about €550 million, assuming constant prices. Of this, about €180 million (33 per cent) will accrue from imports.

Under the first option it is assumed that VRT is removed from the end of 2009. Projections indicate that car sales in 2010 will be similar to 2009 so higher fuel taxes would need to raise €550 million. This would require a tax increase of 24c per litre, giving a price increase of about 20 per cent, to ensure revenue neutrality. When sales of cars recover, the required increase in fuel would also be higher. If it is assumed that the amount of petrol bought annually is constant – it does fall somewhat in a recession but not by anything like as much as sales of cars – then for a year when sales reach the 2007 level petrol taxes would need to be 60c higher than currently. This would be equal to an increase of about 50 per cent in price[46].

Clearly, there are a number of assumptions here regarding consumers buying habits, but the important issue is that the tax increases on fuel that would be required to fund an immediate withdrawal of VRT are very high. In the short term, the price elasticity of transport fuel is low. For example, it is estimated that a carbon tax of €20 per tonne of CO_2, which would add 4.22 per cent to the price of petrol – about 5c at current prices - would not have any discernable effect on demand[47]. However, price increases of the magnitudes indicated would have an impact on fuel usage. This may well be desirable from the point of view of emissions reductions but it would have two serious additional consequences. First, there would be a shortfall in projected tax revenues, as consumers cut back on fuel usage. Second, there would be an adverse impact on car sales since an increase in running costs of this magnitude would deter buyers. In addition, the short term elimination of VRT would result in a fall in the value of the stock of cars of perhaps 20 per cent. Such a fall in value in a major consumer item could induce a negative wealth effect i.e. consumers would have assets that were suddenly worth less and would feel less well off. Even more importantly, the security against which car loans were given during the past couple of years would undergo a fall in value and, while widespread negative equity in this respect is unlikely given the increased requirements of finance house in recent years, this type

[46] If a methodology could be devised to impose additional duty on diesel for cars, but not on diesel for industry, then the calculations would result in a rise of 21c per litre on the basis of sales in 2009 and 52c per litre with car sales at the level of 2007.

[47] Legge, T. and S. Scott (2009) *Policy Options to Reduce Ireland's Greenhouse Gas Emissions*. ESRI Research Series, Number 9.

of action would serve to increase the perception of risk in the economy in general and in the car sector in particular. Given the weakness of demand in the sector, this is not desirable in the short run and would represent a high risk strategy.

It might be argued that the constraint that all the revenue that is lost should be recouped from increased fuel taxes is unreasonable. The argument is that eliminating VRT would make cars more affordable and would thereby boost sales. This would provide higher VAT revenue and could have other desirable economic impacts such as perhaps helping businesses survive the downturn and protect jobs. Therefore, it might be argued that the required rise in the price of petrol would be less thereby making this a viable option.

The argument in relation to the importance of the extra VAT does not stand up. The econometric analysis above found that the main determinant of new car buying is incomes not prices, although it recognised that a price change of unprecedented proportions could have an impact that, by definition, could not be predicted by analysis based on identifying the relationships in historical data. Clearly, the removal of VRT would be a big step and would reduce car prices by about 20 per cent[48]. Combining this observation with the results of the econometric analysis suggest that an assumption that the elasticity of demand in such a circumstance would be in the region of -0.5 appears reasonable. This means that for every 1 per cent fall in price there is a 0.5 per cent rise in demand. Thus, the elimination of VRT would increase sales in Ireland and thus VAT by 10 per cent. Estimates provided by the SIMI for 2007 indicate that VRT on cars was almost €1.38 billion while VAT on all motor vehicles amounted to €663 million. Thus, the additional VAT that would be generated would amount to just over €66 million under these assumptions. Tax on petrol would then need to rise by 21c rather than 23c in 2010. This does not change the conclusion above. Furthermore, it is arguable that this would be a once-off impact and that the correct way to analyse the impact is not that VAT income would be permanently higher but that part of it is simply VAT brought forward by a year or two. While this would no doubt be welcome, it does not strengthen the argument.

The main potential benefit of bring forward sales is not that taxes would play a major part in making up the lost tax revenues but that even a 10 per cent increase in sales in 2010 could be very important for the motor sector by assisting businesses and jobs to get through the crisis. Experience of the 2002-2004 slowdown in the sector as discussed in Chapter 2 indicated that, while sales revenues are very volatile, labour costs and thus overall costs do not rise or fall fully in line with revenues. When this happens, large falls lead to step changes in businesses i.e. rather than reducing size to an optimal level firms may undergo irreversible changes and go out of business. The impact of a boost to sales might be to avoid such events and allow some businesses that are viable in the longer term to survive the present short-term crisis. Thus, rather

[48] It cannot be ruled out that the actual reduction would be less since there is some evidence from the consultations that manufacturers cut prices in response to the downturn. This reduction would provide an opportunity for this to be reversed. In any case, given the very tight margins that exist throughout the sector, there would clearly be some level of probability that at least some of the possible reduction would be absorbed rather than fully passed on to consumers. Economic theory would conclude that unless the price elasticity of demand for cars is zero – the demand curve is vertical – then some of any change in taxes, either an increase or a decrease, will be absorbed by producers. If we accept that the elasticity is zero, then the price of cars will fall by the full amount of the tax cut but there will be no change in the number of cars sold and therefore no change in the amount of VAT that is collected.

than the adjustments that are inevitable in the sector happening in a chaotic manner, there would be a somewhat higher chance that they could happen in a more planned way so that the most efficient businesses are those which survive.

The second option is to undertake an incremental series of reductions over a period of sufficient duration to allow for fuel price increases of a magnitude that would not cause adverse consumer reaction. To ensure the success of this approach it would be necessary for policymakers to pre-commit to these reductions. This would have a number of important benefits over the above option as it would allow for a sufficient time period for the economy to both prepare and adjust to changes which are announced. For example, assume that the policy set about reducing the rate of VRT by 15 per cent of its starting value each year and eliminating it altogether in year seven. Using the projected values above, this would mean a reduction in 2010 of €82.5 million. This would require an increase in the price of petrol of about 3.5c per litre which would have a negligible impact on consumers' decisions. When sales recover to their 2007 level, the annual increase in petrol tax needed to finance the reduction would be about 6c – or 5c if the additional duty could be applied to diesel for use in cars – again within what might be considered to be an acceptable rate of tax increase.

However, there are two weaknesses. First, this approach would provide only a small boost to car sales in 2010 and 2011. Second, and arguably more importantly, this incremental approach would provide an incentive for purchasers to defer their decision to buy a car. Obviously, if a consumer perceives that the car will be cheaper in a year's time they may put off buying, particularly in the second half of the year. Given that VRT amounts on average to about 23 per cent of the price of a new car, this would lead to a price reduction of 2.3 per cent each year. When allied to the likely ongoing reductions in car prices for the next year or so, this approach would be risky in that it would cause an even deeper downturn in the new car sector next year. In effect, the potential impact is that policy could slow Ireland's progress towards EU ownership rates. The deadweight costs of VRT would also continue to impact the economy for a longer period compared to the first option above.

The third option is based around the EU emissions targets which mean that by 2020 most new cars will have CO_2 emissions below 100g/km. If these targets are achieved then the revenue from VRT will have declined naturally. In addition, the gradual introduction of EU targets in the interim will mean that the average emissions of the existing car stock will come down a number of bands, and the tax take from VRT by that stage will be so small that it could be fully removed without materially impacting on Government Revenues. This option also calls for a reduction of 10 per cent in VRT rates and for the introduction of three new bands of zero; 5 per cent and 10 per cent according to the level of emissions.

This approach has a number of attractive features in that it ties VRT into environmental policy and is in line with the approach that was taken in the 2008 reform. It also avoids any sharp disruption to the sector. However, the consultants have a number of concerns. The first is the time period involved which is not only quite long but is effectively open-ended. There is no guarantee that EU targets will be achieved and, as discussed earlier in this chapter, even the more modest 2012 EU emissions targets appear overly optimistic. There is also a concern that there is

commitment in principle by the Government that VRT will be abolished. In this case, it would be quite open to policymakers to protect the revenue stream from VRT by simply changing the rates at which VRT is levied while still maintaining the relativity of rates according to emissions. This would retain the environmental incentive element of the tax while also protecting. Indeed, VRT would be easily portrayed under this approach as a central part of Ireland environmental policy. Thus, there are considerable risks associated with this approach. The deadweight costs would also continue to be felt.

The final approach aims to combine the best features of the once-off and incremental reductions while minimising the risks. The approach is as follows:

- at end 2009 the Government undertakes a once-off reduction in VRT of 25 per cent compared to its value in a no change scenario;
- at that time, a number of measures, detailed below, are introduced to overcome the main distortions to the smooth operation of the sector;
- When new car sales start to recover towards their 2007 levels, such that the risks of consumers deferring their purchases are reduced, the Government pre-commits to a programme of reductions in VRT to remove the tax completely over say five years. According to the projections in this report this programme would be implemented from Budget 2013 onwards.

At the level of car sales in 2009, the cost of this is estimated at €137.5 million. This would require an additional tax of 6c per litre of petrol to ensure revenue neutrality. This would not have a major impact on consumers' purchasing decisions in relation to either fuel or cars. When car sales recover to 2007 levels of 180,000, as is projected by 2012/13 then the tax on petrol would need to be 15 cents or 13 cents per litre if it could also be applied to diesel. Again, given that there are at least three or four budgets between now and then, there would be an opportunity for this to be introduced incrementally without upsetting the tax base unduly. Indeed, it is likely that fuel prices will fluctuate by a much greater proportion than this, as has been the case over the past number of years.

The following five years would see a progressive reduction in VRT equivalent to 15 per cent of the current tax rate. In terms of the values for VRT and petrol in the base year of 2007, this would require taxes on petrol to increase by about €200 million per year or 9 cents per litre. By this stage according to the projections, the sales of cars would have risen to exceed the 2007 level so the opportunity cost of each reduction in VRT, in terms of the tax foregone, will have increased. However, the rise in sales would be based on increased car ownership so sales of petrol also would be rising. It cannot be concluded that petrol sales will rise precisely 1-to-1 with the number of cars so these estimates should be treated as indicative. However, they are indicative of the magnitude of the increases in fuel taxes that would be required and indicate that they are such as to be realistic when set against the background of an economy that has recovered from the current crisis.

This approach establishes the objective for Ireland to move into line with other EU countries and the policy direction that has been set out by the European Commission by eliminating VRT and moving the balance of taxation on fuels i.e. on to car usage. This is much more in line with good environmental policy and would remove the severe trade, consumer welfare and competition distortions that exist currently. At the

same time, this approach would avoid creating an incentive for consumers to prolong the downturn in car sales by deferring decisions to replace and would allow for an incremental adjustment to more fuel efficient cars and driving patterns. This analysis informs the recommendations in Chapter 6 below.

4. Econometric Analysis of Demand

4.1 Demand Analysis

This section contains the results of a technical analysis of the factors which determine the level of demand for new and used cars. The approach involves the specification and estimation of a quantitative model which indicates the relative importance of various factors – incomes, prices, etc. – in determining the level of demand and the trend over time. From this, it is possible to identify the elasticity of demand with respect to these factors i.e. what impact would a 1 percent change in a variable such as price or income be expected to have on demand. It is also possible to use the estimated model to predict demand for cars in subsequent years.

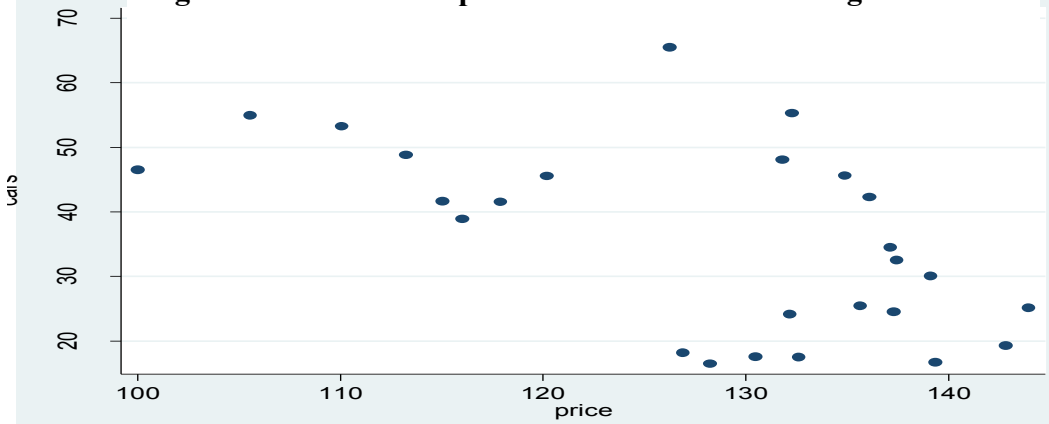
It is important to note that the results of the model are based on a long term dataset. This has two implications. First, the underlying assumption when interpreting in a forward looking manner is that the relationships that have existed over the period of the dataset will continue into the future. Second, the relationships are long term: in any particular year the actual level of demand will not be exactly as predicted by the model. As a result, it cannot be expected that any observed change in one or more of the variables in 2008 or 2009 will fully explain the sharp downturn in demand which has occurred. However, it can be determined that the outcome has deviated from the established trend and less formal analysis may then be employed to identify the developments that have resulted in the deviation. This is done in Section 4.4 of this chapter with an additional discussion as to whether or not the experience of the past two years indicates a change in trend i.e. the relationships identified by the model have broken down, or a temporary deviation from the trend.

Econometric modelling is highly technical and the implications of using this approach may be difficult for non-economists to grasp. In order to clarify understanding, the technical aspects are included at the end of this chapter in Box 4.1. This box discusses the international literature in this area, the specification of the model and the datasets used, and the main results. As the main conclusions are summarised in the text it is possible to bypass this box without loss of clarity as to the conclusions of this analysis.

4.2 A First Look at the Data

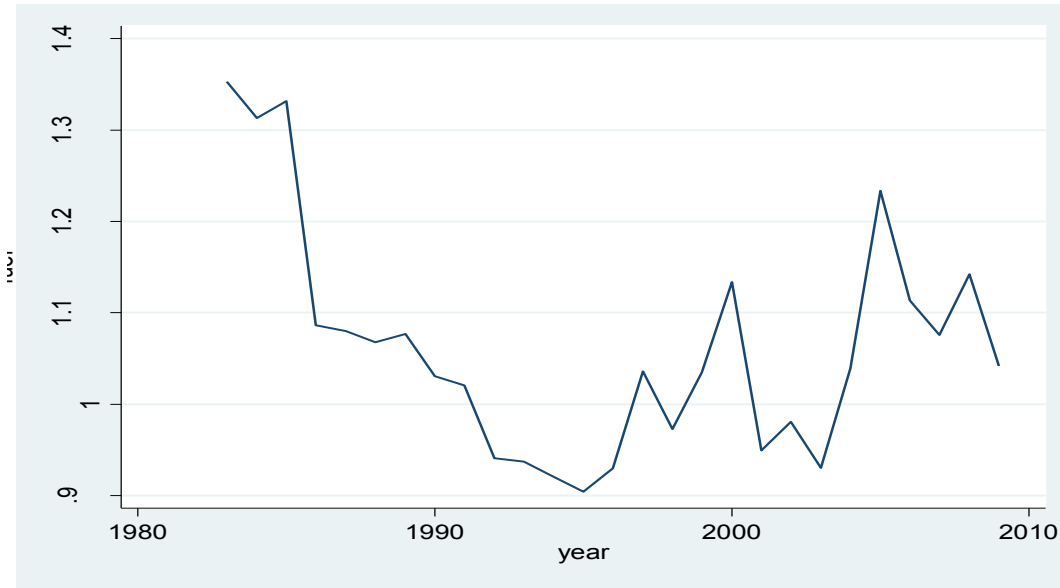
As is always the case, it is worth having a look at the data to see if there are any clear relationships that would be expected to arise. Figure 4.1 shows the relationship between the number of new cars sold (per 1000 of population) and real price (an index base year 2006). The figure indicates a negative relationship between price and quantity i.e. it appears that lower real prices of cars are associated with higher sales.

Figure 4.1: Relationship of Price of New Cars to Registrations



Similarly, the cost of running a car – proxied by the real cost of petrol– was graphed against demand for cars (Figure 4.2). However, when the cost of fuel is deflated by the CPI, it shows considerably more variation than there is in either price of cars or the level of sales[49]. This suggests that the cost of fuel is not that influential with respect to the gross demand for cars although is might affect the vintage of the car stock.

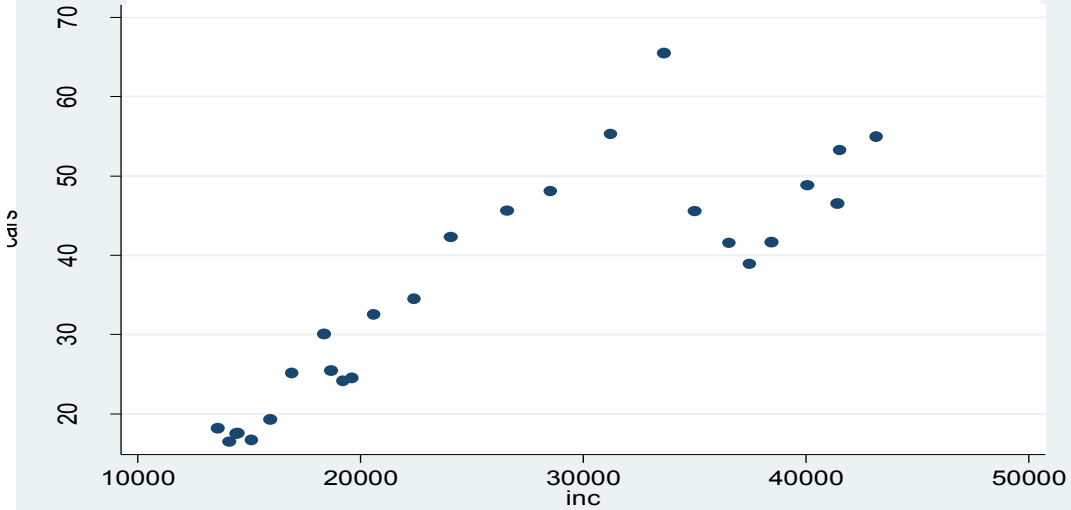
Figure 4.2: The Real Cost of Petrol



The third relationship examined is that between incomes and demand for cars. Two measures of Income are examined: Real GDP per capita and Real Compensation (which comprises wages and other benefits). It was found that both measures are highly correlated i.e. they move together, so the choice of variable is not important. Figure 4.3 graphs income against demand. It is immediately clear that there is a strong relationship between income and the number of registrations.

[49] Other costs such as the cost of service have declined as the service interval has gone from every 3,000 miles in 1980 to 30,000 km in 2009.

Figure 4.3: Relationship of Income to New Registrations



4.3 Forecasts Based on Model Results

The results of the econometric model can be summarised as follows:

- Income is to be the main driver of sales with a one to one relationship i.e. a 1 per cent increase in income leads to approximately a 1 per cent increase in sales[50]
- Increases in the price of cars have a negative impact on sales. Demand falls by 0.4 per cent as the cost of changing a car rises 1 per cent although this effect is not statistically significant.
- The result is similar for the cost of fuel

The model can be used to make forecasts of the future demand for cars[51]. As was noted in section 4.1, the model tracks the long term equilibrium behaviour of the car market. In any given year, the actual market may be out of long run equilibrium and thus deviate from the forecast for specific reasons. The situation in 2008 and 2009 is an obvious example of this phenomenon and is discussed in detail in the next section below.

Most versions of the model produced very similar results. While it doesn't matter greatly which one is used to make the forecast, the most appropriate would seem to be the model of Column 2 of Table B4.2 in Box 4.1 as this uses the most reliable data. To make the forecast, the estimates of the model parameters are applied to forecast future values of the independent variables i.e. incomes, prices and the price of fuel. Future forecasts of national income will be required. The ESRI's forecasts are available in the "Medium Term Review" and the Quarterly Economic Commentary. They predict that income per capita will grow as in Table 4.1.

[50] The importance of income as a determinant of car ownership was also identified using multi-year survey data in Nolan, A.(2008) *A Dynamic Analysis of Car Ownership in Ireland.* ESRI Working Paper N. 269. Earlier work by the same author found a similar one to one relationship.

[51] It should be noted that the forecasts referred to in this section relate to total new registrations i.e. they include both sales in Ireland and registration of used imports.

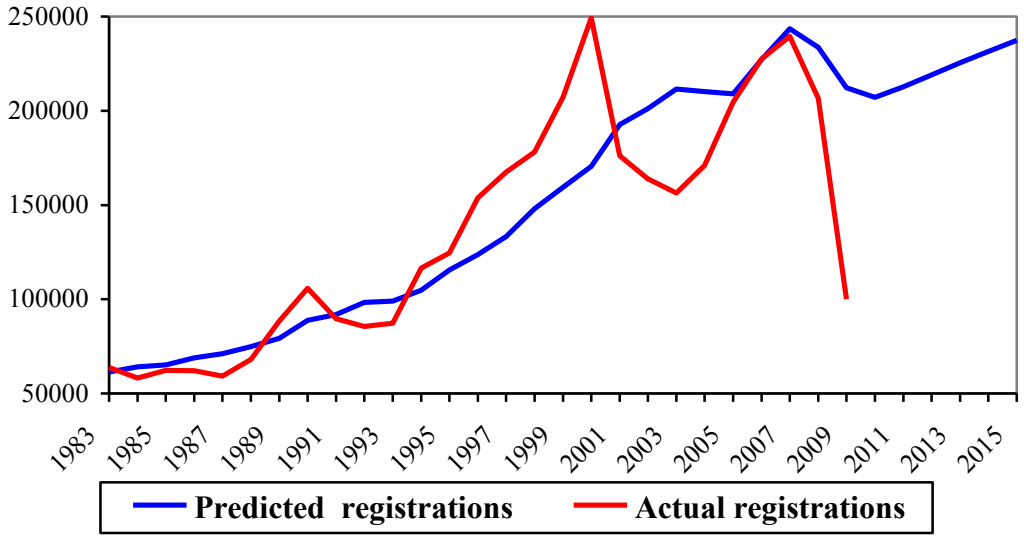
Table 4.1: ESRI Forecasts for Irish GDP per capita (percentage changes)

2009	-9.1
2010	-2.3
2011	2.5
2012	2.8
2013	2.7
2014	2.5
2015 - 2020	2.4

As this forecast is a baseline scenario, it is assumed that income will follow ESRI projections shown in Table 4.1. It is also assumed that the price of fuel and the price of cars remain at their current levels. While these two variables may change in the future, it is useful to consider a baseline of what may happen if they don't. Furthermore, both variables are obviously highly sensitive to government policy. So the baseline scenario could be considered as being the scenario in which government policy towards the car market does not change.

The results are shown in Figure 4.4 for the full time period of the dataset and up to 2015[52]. For the most part the model tracks new registrations fairly closely.

Figure 4.4: Predicted and Actual Registrations (1983-2015)



There are a couple of obvious annual deviations. In the late 1990s and around the millennium there is a clear peak of registrations above what the model would predict. This is followed by a decline to below the predicted level in 2001. The scrappage scheme in the late 1990s is probably responsible for the initial growth in registrations. It would appear that purchases were brought forward by consumers anxious to get a millennium registration, an explanation that was confirmed by consultations. Indeed, the sudden increase and subsequent decline almost exactly cancel each other out with the market returning close to its predicted level after a few years. However, it is notable that the main years when registrations decline below prediction – 1986, 1992,

[52] The predicted new registrations in this figure are derived by using the actual price and income variables for each year and applying these to the model parameters. The values for 2010-15 are derived by using the ESRI income forecasts and the assumptions above and applying the model parameters.

2002 and 2009 – reflect years of economic disruption in the Irish and/or global economies. At the year of peak registrations in 2007, actual and predicted registrations are similar.

The other main deviation from the model is in 2008 and 2009 in particular. The model predicts a decline in sales in 2008 and 2009 in line with the decline in income that occurred. GNP per capita fell by 4.6 per cent in 2008 and is forecast to fall by a further 9.1 per cent in 2009. The model predicts a fall in registrations of 4.1 per cent in 2008 and 9.2 per cent in 2009. However, registrations fell by 13.7 per cent in 2008 and are projected to fall by 51.6 per cent in 2009[53]. This means that instead of the predicted levels of 233,713 in 2008 and 212,199 in 2009, the actual level was 206,561 in 2008 and is projected to be about 100,000 in 2009[54]. The causes of this shortfall of over 27,150 in 2008 (11.6 per cent below prediction) and 112,237 in 2009 (52.9 per cent below prediction) are examined in the next section below.

Looking ahead, the model predicts a modest decline in new registrations in 2010 to just over 207,000 (-2.4 per cent below the 2009 prediction) in line with the modest decline in income predicted by the ESRI. The actual decline could well be greater if industry specific factors are not addressed, and consultations show that expectations in the sector are that sales in 2010 will not be much above 2009 levels. After 2010 the model predicts modest recovery in line with the modest recovery of income. Again the accuracy of this forecast is predicated on the industry specific factors, discussed below being alleviated. Finally, by the end of the period (2015) the car market will have returned to 2007 levels for total registrations. Clearly the breakdown of this between sales and imports will depend on the extent to which the competitive advantage which the tax and exchange rates regimes confer on UK sourced cars have been addressed.

4.4 Explaining the Below-Trend Registrations in 2008 & 2009

The starting point is that registrations in 2008 were over 27,150 below what would have been expected on the basis of the identified long term relationships which determine the demand for cars, while the shortfall in 2009 will be between 92,200 and 112,200 below the model's predicted level, depending on how demand in the remainder of 2009 develops. Consultations and the analysis in this report suggest that five factors are important. These are:

[53] As discussed in Chapter 2 above, this 2009 projection is based on sales in the first six months of 2009 weighted according to the seasonal profile of sales over the past decade plus an additional 40,000 imports. Registration of imported used cars in recent years has not been seasonal and over 30,000 were registered in the first six months of 2009, in line with 2007 and 2008 when the annual totals were close to 60,000. However, it is expected that rising prices for used cars in the UK plus the partial retracement of the Euro/UK£ exchange rate will mean that the rate of import will slow considerably in the second half of 2009. However, should the rate of import seen in recent years persist then, the fall in registrations in 2009 would be about 42 per cent. This would be 92,237 (43.5 per cent) below the predicted level.

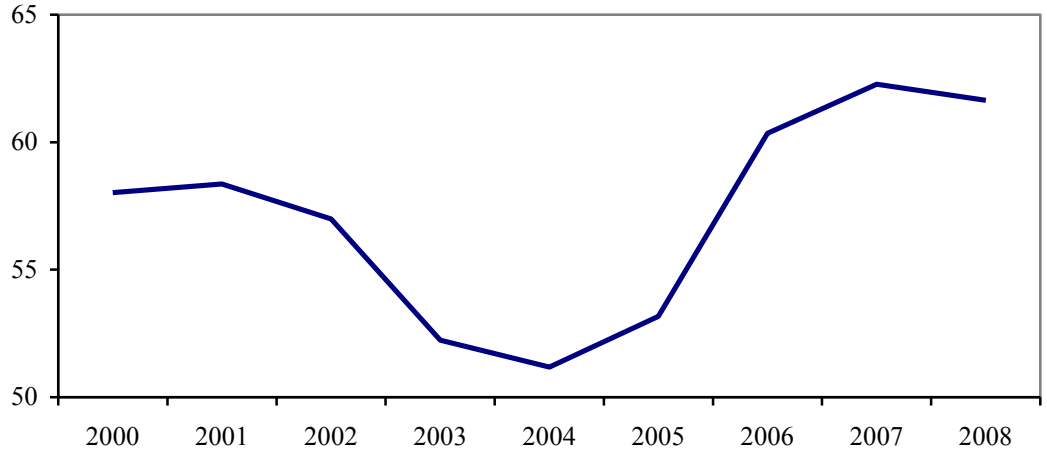
[54] A feature of demand in 2009 is that the seasonal peak that is usually seen in the early months was not nearly as notable. January sales in 2009 were only about one-third of their 2008 and 2009 levels. In contrast, sales in January and February 2008 were similar to 2007. In contrast, sales in May and June 2009 were over 50% and 60% respectively of their levels in the corresponding months in 2008.

- A rise in the transaction cost of buying a new car i.e. the difference between the value of a trade-in and a new car expanded in 2008 and the early part of 2009;
- The slowdown in tourism and changes to VRT as it relates to the rental market, which have depressed demand for cars from this sector;
- The impact of the credit crunch and subsequent reaction of finance providers;
- The VRT revision in July 2008 which disrupted the market at a time when confidence was weak and expectations were being revised downwards; and
- The fall in consumer confidence over the past two years. This would be expected to cause a temporary over-shoot in terms of consumer reactions to major purchases.

Transaction Costs

Consultations undertaken in researching this report pointed to the fact that a purchaser's decision to buy a new car is not driven so much by the price of the car as by the cost of changing cars i.e. the difference in value between the new car and the existing used car. Intuitively this makes sense and this was confirmed by the econometric analysis which found a logical relationship between prices when defined as the transaction cost of a new car but not otherwise. Figure 4.5 shows the price of used cars as a percentage of new car prices since 2000.

Figure 4.5: Used Prices as Per cent of New Car Prices



This shows that used car prices fell in Ireland relative to new prices up to 2004. This largely complies with relatively weak growth below trend in these years. This fall proved to be unsustainable and the trend reversed in 2004-07 and, along with the strength of the boom and the easy availability of finance at low interest rates resulted in strong demand in these years. However, the situation changed suddenly in 2008 and in the latter part of the year the reform of VRT and a glut of used cars as demand slowed resulted in the trend turning down again. The consultations indicated that this fall was concentrated in the latter months of 2008 and so was not fully reflected in the annual data that are used in this chart. Information on the advertised prices of used cars of different ages in dealerships in early 2008 before the VRT change impacted and in early 2009 was accessed. These data showed an average fall in prices in this period of over €5,000 or 22 per cent.

Details of these estimated price falls according to the age of the cars are shown in Table 4.2. While considerable falls were experienced for all used cars, those over two years old tended to be reduced the most.

Table 4.2: Fall in Price of Used Cars (February 2008 - February 2009)

Age	% fall in price
One Year Old	17.5
Two Year Old	21.9
Three Year Old	24.0
Four Year Old	22.7
Five Year Old	24.6
Average	22.2

During this period, the price of new cars according to the CSO fell by about 4 per cent. Thus, the ratio of used to new car prices expanded considerably during the latter part of 2008. Applying these estimates to the data underlying Figure 4.8 would reduce the ratio to approximately 50 i.e. the ratio of used to new car prices in early 2009 was lower than at any time from 2000 to 2008. In fact, the last time the ratio fell below 50 was in 1985.

This provides a strong indication that a rise in transaction costs had an important negative impact on car sales. The econometric analysis estimated a price elasticity of -0.42 for the price variable. The calculations here indicate that the cost of change rose from about 38 (100 less 62) in early 2008 to about 50 in early 2009, a rise of 31.6 per cent. Applying the estimated elasticity, this would have reduced sales by 13.3 per cent in 2009, a fall of 19,400 cars. Clearly some of this fall would actually have occurred in the latter part of 2008. The data do not allow a precise allocation to be made. However, it is possible to divide the fall between the two years if it is assumed the impact is in accordance with the extent to which each of these two years underperformed the predicted trend: 2008 was 11.6 per cent below trend and it is projected that 2009 will be 52.9 per cent below trend. Thus, the impact of increased transaction cost is estimated to be that sales in 2008 were 3,500 below the predicted level while sales in 2009 are 15,900 below the prediction.

As with the other factors discussed in this section, it is necessary to ask to what extent this rise in the transaction cost is a permanent effect and how much is temporary. The rise is really the result of decisions by dealers in response to changing business and market conditions. The most easily understood impact is that the increased supply of used cars will force down prices. The evidence is that this is passing and so the effect is temporary. However, the sale price of used cars in main dealerships is the trade-in price that is offered for used cars against new cars plus the margin the dealers require. This suggests a second more long term impact. The sector, as a result of the disruption of the market in 2008 and lower expectations for the future, has re-evaluated the risk that is associated with trade-ins. This will result in the pursuit of a higher margin across the business. This reassessment of risk is likely to be more long term in its impact on the transactions cost. In effect, dealers had been subsidising the cost of transactions through pushing down margins but the realisation that there are mis-priced risks in the sector means that this will no longer occur. As a result, it is to be expected that the transaction cost will rise from its 2007 level although it will not persist at its level of late 2008 and the first half of 2009.

The Car Rental and Contract Hire Market

The tourism market provides an important source of demand for new cars early in the year. These are then placed on the used car market around September. In 2007 over 54 per cent of sales to the rental sector took place in the March to May period with only 7 per cent taking place after July. As a result, demand from this sector is highly seasonal although the peak is somewhat later than is the case for sales in general. In 2007, new cars registrations in the car rental fleet amounts to 22,628[55]. Of these, 18,154 (80 per cent) were registered in the January to June period. In 2008, registrations in the January to June period fell by 11.5 per cent to 16,071 and by 16 per cent to 18,971 overall. As a result, falls in this market account for 3,650 or about 13.5 per cent of the shortfall below the predicted 2008 level. Total new registrations to the rental fleet in the January to June period in 2009 amounted to 5,504, a fall of 10,567 (65.8 per cent) compared to 2008 and 17,124 since 2007[56].

Part of the reduction in demand from this sector is accounted for by falls in expectations of demand from tourists. Tourism numbers to Ireland were forecast early in the year to fall by about 9 per cent in 2009. Latest data show that the actual fall may be somewhat greater with trips to Ireland in the January to June period falling by almost 400,000 or 10.7 per cent compared to the same period in 2008[57]. Thus, a 10 per cent fall in registrations might have been expected on the basis of falling demand from tourism. That fact that the decline in actual registrations in 2009 has far exceed this is likely the result of the impact of the disruption of the car market in 2008 and the announced revision of VRT rules as they affect the car rental sector in 2010.

The economics of the car rental sector are based in part on an ability of rental firms to resell cars to the trade in the latter part of the year and on receiving a VRT refund. The problems that arose with buybacks in 2008 are discussed above in Chapter 2. This relationship between rental companies, finance providers and dealers that had under pinned the economics of the sector changed in the autumn of 2008 when buybacks came back on the market at significantly above their market value. This resulted in significant losses for retailers and finance houses alike with the result that both retailers and finance houses have now shied away from the buyback system. However, the car rental industry cannot afford to purchase the required number of cars to meet a six week demand during the summer months while retailers will no longer be willing or able to supply cars to this industry, at least on the terms that have prevailed. The prospect therefore is that there will be a significant shortfall in the car rental industry's ability to fleet up to meet the demand during the summer months, in coming seasons, or will be able to do so only at substantially higher cost to final customers. The result could add further to competitive strains in the tourism sector.

The VRT revision in July 2008 reduced the value of many used cars including rental cars. The economic slowdown and the fact that consumers put off buying cars in 2008 meant that when rental companies tried to place cars back on the market, they either had difficulty in finding buyers or had to accept prices that were below expectations. As a result, while the overall fleet has fallen from 27,971 at its peak in

[55] Data supplied by Car Rental Council of Ireland

[56] A slowdown in contract hire should be fully captured by the econometric model as economic activity slows. Car rental depends mostly on overseas tourism which is affected not be Irish incomes but by foreign incomes.

[57] CSO *Overseas Travel June 2009* (6th August 2009)

2008 to an estimated 17,500 at the peak in 2009, the number of cars retained from the previous year's stock has increased from 8,500 in 2008 to 9,250 in 2009. In addition, the number of cars sourced on short term arrangements from unsold stocks in the motor sector has increased from an estimated 500 in 2008 to 2,000 in 2009[58].

The question then is to what extent these effects might be expected to persist beyond 2009 or 2010? Clearly, a shortage of rental cars, should such emerge this year, will push up prices and while this would depress demand; as a result, it is not likely that a situation of under-supply of rental cars would persist over the longer term. Furthermore, the consultations indicated that the market for used cars is a lot tighter this year than in 2008 with the result that stocks in dealers are falling and rental firms will be able to place such cars as they wish onto this market. Together these arguments indicate that demand for new cars to supply the rental sector is likely to begin to recover in 2010. Nevertheless, there are a number of factors that will continue to restrict a full recovery of demand. The first is that the extent of the current recession and the ongoing strength of the Euro exchange rate compared to 2007 means that demand for overseas tourism into Ireland are likely to remain weak for a period. A reasonable assumption is that demand is likely to recover in line with the economy. As a result, the recovery of this contributory factor in the demand for rental cars is likely to follow the predicted path in Figure 4.4 above.

A second factor, however, is that if the price of rental cars in Ireland were to remain permanently high relative to their price in 2007, then a recovery in tourism would not translate fully into demand for hire cars. The fall in the demand for cars was far greater than the fall in tourism demand and reflects changes that have occurred in VRT and those which are scheduled to be implemented in 2010. The 2008 change impacted negatively on profitability in the sector and is likely to increase the perception of risk – car rental firms may be more cautious with respect to the potential for policy to change and impact their business models. However, this impact was a once-off and will have moved through the business by 2010. The proposed change in the VRT refund whereby the current refund of 15 to 20 per cent of VRT is to be phased out over three years will have an ongoing impact on the sector. The Car Rental Council estimates that average tax – VRT and VAT – on a car used in the sector is about €8,500. If it is assumed that the average refund is 20 per cent and that this is removed over 3 years starting in 2010 then the price of the new car to the sector would increase by about 8.5 per cent. This would cause a permanent rise in rental prices and reduce demand somewhat. However, the longer term impact on demand is likely to be fairly small. The main impact would be to suppress demand in 2010 i.e. at a time when any measure to promote the demand for new cars would be welcome.

Car Financing and the Credit Crunch

Difficulties in gaining access to finance have been put forward as an explanation for the reduction in demand. Consultations have indicated that this has been an issue but there are differences of opinion regarding its ongoing impact. In summary, finance providers accept that liquidity problems were important in this sector as elsewhere

[58] As discussed earlier, the Car Rental Council of Ireland has estimated that there was no over-supply of cars for tourists in 2008. As a result, it is forecast that there will be under-supply during 2009 and 2010 unless measures are introduced. This would lead to lower revenues and higher prices for tourist rentals.

throughout the financial system in the latter months of 2008. It is argued that finance is now available to people who meet current credit criteria. However, these criteria have changed and the number of applications has fallen.

Overall new sales were down by 19 per cent in 2008 although applications for finance are estimated to have fallen by less than 10 per cent, on the basis of the available data. Total car sales in the January to July period of 2008 amounted to 141,165 compared to 166,876 in the same period of 2007[59]. This fall of 15.4 per cent for the first part of the year, contrasts with a fall of 45 per cent in sales for the August to December period, when the credit crunch hit. This would appear to support the argument that credit was an issue. It might be expected that the credit crunch would also affect the number of imports of used cars but there is no evidence for this – almost the same number were imported in the second part of 2008 as in 2007. However, this is not evidence that the credit crunch did not impact as while some people may have been unable to buy imported cars due to lack of finance, many others may have found the price differential attractive due to the fall in exchange rate in this period and substituted an imported car for a new car bought in Ireland.

In the short term, two further issues are affecting financing. First, the fall in the number of new car sales in 2009 means that the proportion of applications relating to used car sales has increased. Finance companies do not wish to rebalance their portfolios unduly towards the used car market. Second, a number of finance companies that had earlier provided finance have effectively exited the market over the past year or so, with the result that three main players account for most of the loans provided. The remaining firms are getting applications from dealers with whom they had not previously had business relationships. Approval rates for these dealers are lower as it takes time to build these relationships. Consequently, overall approval rates have fallen although rates for applications from dealers with whom there is a long standing relationship have remained constant.

There is reason to conclude that the criteria for granting finance have changed long term. It is estimated that just over 60 per cent of deals for personal car finance have been in the form of unsecured loan facilities. Of these, 35 per cent are sanctioned over three years, 15 per cent over four years and the remaining 50 per cent over five years. The evidence is that this is going to change with the shorter period becoming the norm. In addition, there is a major move away from unsecured personal finance. There is also a move away from arrangements involving significant large final payments. Thus, while criteria are likely to vary depending on the provider in question, there have been a number of general changes:

- The loan value criterion has been reduced with finance providers moving towards a 50 per cent LTV target;
- There is a big move towards scheme based finance and away from personal loans, often with subsidised finance involving manufacturers;
- Finance is being provided over a shorter time period with three years replacing four or five years as a typical repayment period;
- Residual valuations have been reduced and depreciation factors increased. The VRT revision and the oversupply of used cars in 2008 are contributory

[59] The January to July period is used rather than January to June as the VRT reform in July 2008 distorted sales i.e. people delayed buying in June and sales rose in July.

reasons with the result that first year depreciation rates have been increased from the previously typical 15 per cent to 25 per cent and above.

Considerably more data on car financing and on the importance of the various criteria and determinants would be required before a definitive quantification of the importance of this issue could be put forward. It would appear also that the fall in the provision of finance is a function both of a reduced willingness to supply – more stringent criteria – and a fall in demand i.e. applications for finance. However, what does seem clear is that while the liquidity constraint of the credit crunch months in 2008 has eased, there are long term changes that will affect the availability of finance.

The perception of risk is higher throughout the finance system and forecasts for income growth for Ireland are lower than over the past 15 years or so. Consequently, finance providers are going to look for greater security in the form of providing lower LTV ratios. This is also driven by an increased unease regarding government policy in this sector due to the manner in which the 2008 reform was introduced and then impacted and the recognition that Ireland is out of step with EU policy and most EU countries, in particular the UK, in relation to VRT. This increases the probability of further reform and therefore that used car values could be impacted as a result of policy.

A second issue is the move away from personal loans to finance car purchases towards scheme based finance with the participation of manufacturers. As discussed in Chapter 2 above, manufacturers' strategies involve building greater control over the supply chain from car construction to final sales in order to have greater influence, protect brands and reduce costs. Greater involvement in financing purchases is both compatible and positive towards this strategy. At the same time, finance providers favour these moves as the perception is that marketing and administration of loans are lower with lower risk and more control over the use to which loans are put. This is a long term structural change and is not likely to be reversed even as economies recover and risks are perceived to ease. However, this change does not imply that finance to buy cars would be harder to obtain and so there should not be a reduction in sales.

In summary, therefore, liquidity problems in 2008 impacted demand for cars and revised loan criteria are making it more difficult to access finance in 2009. However, the evidence is not available to conclude that these are major factors impacting sales with lower applications for finance, as a result of reduced consumer confidence, likely to be more important. In addition, many of the factors that triggered the revised criteria are passing while scheme based finance will likely provide adequate loans for demand.

The 2008 VRT & Road Tax Revision

It has been widely discussed in the media that the reform of VRT and road tax in mid-2008 disrupted the market and has led to the falls in sales in the second part of 2008 and 2009. There is no doubt that the reform coincided with the underperformance and was likely a trigger as a result of the disruption discussed in Chapter 2 above. The timing of the change was particularly unfortunate given that it occurred just when the market was saturated with used cars and sales were slowing. The reform provided an impetus to the rise in the transaction cost that was already occurring as a result of the

over-supply of the used market relative to demand for new cars and also devalued the stock of used cars in dealerships thereby increasing dealers' perceptions of the risks in the business. It also distorted the timing of consumers' purchases. May and June accounted for 19.3 per cent of purchases for the year in 2007 but for only 11.9 per cent in 2008. Following the reform, July accounted for 10.7 per cent of the year in 2008 compared to only 7 per cent in 2007. Thus, the reform led to a delay in purchasing. It could then be argued that potential buyers who had delayed until the reform was introduced further put off buying in 2008 due to the wish to get the premium of a new-year number plate in 2009. However, the recession caused this temporary delay to become permanent leading to the lower sales for the year.

The consultants do not find this to be a convincing argument. For a start, if there was a delayed element of demand that was waiting for the new-year number plate, there is no evidence that it entered the market in January 2009 when sales were abnormally light. While there was a temporary delay, the lower sales in 2008 were to a much greater extent due to a combination of the various factors discussed above, such as lower incomes, the credit crunch, higher transactions costs. Some of these impacts arose in part from the disruption caused by the VRT reform, but it is not the case that there are further falls to be included as a result of the reform. As a result, apart from the re-evaluation of the risks that can be assigned to policy disruption as already discussed, the impact of the reform was largely a passing distortion of demand in mid-2008 and cannot be determined to have a major impact on sales in 2009.

Falling Consumer Confidence

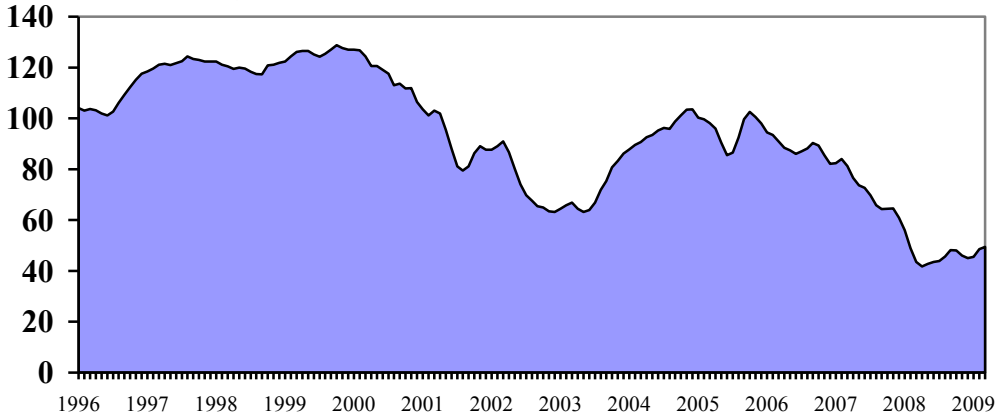
Consumer confidence is notoriously difficult to incorporate into a demand model and measures are generally only incorporated into forecasts as residual factors, over relatively short time periods. Falls in confidence are clearly important over short time periods and generally result in an over reaction to a change in an important variable and an undershooting of any predicted change in demand. This is exactly the issue when speaking about the very low demand in recent years compared to the predictions of the econometric model.

A consistent measure of consumer confidence in Ireland has been available since the mid-1990s[60]. This measure is shown in Figure 4.6[61]. Note the rise in the index in the late 1990s and subsequent decline from 2000 to mid-2003. This corresponds with the over performance of car sales relative to the econometric models prediction in the earlier period and subsequent underperformance as shown in Figure 4.4 above. Following a somewhat patchy recovery in the confidence indicator up to early 2007, it then began to decline before accelerating in mid-2008 to its all time low in late 2008. In terms of the annual average reading, consumer confidence fell by 18 per cent in 2007 and by a further 35 per cent in 2008. The average reading is down a further 5 per cent so far in 2009.

[60] KBC ESRI *Consumer Sentiment Index*

[61] This measure tends to be volatile so the figure uses a three month moving average of the monthly observations.

Figure 4.6: Consumer Confidence 1996-2009



As far as car sales are concerned, this has clearly acted as a leading indicator with falls in the indicator proceeding falls in sales by about a year. Applying this to the observed changes in overall registrations suggests that registrations in 2008 were somewhat stronger than consumer confidence would have predicted while the reverse is true for 2009. The 18 per cent fall in the indicator in 2007 and a 35 per cent fall in 2008 would, following a year's delay, explain a fall of about 33,000 cars in 2008 and 72,000 in car registrations in 2009. Furthermore, while there is no indication of a strong recovery in 2010, it would appear that the major part of the fall is over and that 2010 is likely to be broadly similar to 2009.

The fall in consumer confidence is a major cause of the underperformance of car sales, relative to the level predicted by the model in 2008 and 2009. This indicator tends to precede changes in the actual economy and exaggerates the impact of these changes. In effect, it is another measure of income and underlines the implied result of the econometric analysis: while there are measures that can be taken to relieve the impact of the crisis and to strengthen the industry in the longer term, a full sustainable recovery depends on the recovery of the wider economy.

Summary

Table 4.3 summarises the impact of the various factors that have been discussed. Transaction costs fell in the high growth period but increased sharply during 2008. This factor has contributed to the fall in registrations and there are issues related to the perception of risk on the part of dealers that mean that this factor may have some persistent impacts. Similarly, the availability of finance impacted the sector in 2008 and may have some effects in 2009. The criteria for accessing finance have changed, so that the longer term effects could be a constraint on the number of registrations.

The fall in demand from the rental sector has reduced demand for cars by 3,650 in 2008 and by 10,567 in 2009. Most of this fall in demand is not down to lower tourism numbers although these have contributed. For the most part it would appear that the factors that have contributed to the fall are temporary and will work through the system over varying lengths of time. Tourism will take time to recover and it is possible that higher rental prices should continue to suppress demand into the medium term, but the impact of the VRT reform will have mostly already disappeared.

However, the announced policy change with respect to the VRT refund is likely to continue to impact the sector.

Table 4.3: Explaining the fall below Predicted Levels in 2008 and 2009

	Fall in Demand Explained	
	2008	2009
Increased transaction costs	3,500	15,900
Lower rental demand	3,650	10,567
Finance Constraint	Some impact	Some impact
Tax reform	Some distortion	Not important
Consumer confidence	33,000	72,000
Total 'explained'	40,150	98,496
Total to be 'explained'	27,150	112,000

The VRT and road tax reforms in 2008 disrupted the retail sector at a time when it was very vulnerable. The way in which the reform was implemented plus the impact on prices acted as a trigger for the impacts above but cannot be considered as a stand-alone additional impact. Consumer confidence is a different matter. It has fallen sharply since the beginning of 2007 but has levelled off in recent months. An arithmetic application of this index to the number of registrations with a one year delay suggests that registrations actually performed better than might be expected in 2008 and that the fall in the index explains a large part of the underperformance of registrations relative to the prediction of the model in 2009. It also indicates that there is unlikely to be any major improvement in 2010.

Aggregating these impacts for 2008 and 2009 gives a total of just under 140,000 registrations that are explained by these adverse shocks to the sector. This is very close to the total requiring explanation in terms of the models prediction.

Box 4.1: Description of Econometric Analysis

B4.1 Review of International Literature

This section provides a brief review of the international literature relating to the econometric analysis of demand for cars and discusses its relevance to the Irish situation. Such papers as are available tend to be based on US data. Two of the most cited papers in the literature are Goldberg (1995) and Berry et al (1995)[62]. Both papers estimate essentially the same model. Both use a multinomial procedure to model the choice between different brands of car. The two papers differ only in terms of the data used. Goldberg (1995) uses data gathered from a survey of individual US consumers whereas Berry *et al*. use aggregate data gathered for the market as a whole. The main purpose of both papers is to calculate the extent to which different makes of car are substitutes for each other. As such their focus is on the cross price elasticity. But they both also report own price elasticities. These tend to be fairly high at an average of -3 to -5, but much higher for some makes and models i.e. a 1 per cent rise in price relative to a competing model would lead to a 3-5 per cent fall in sales against a neutral background.

For the purposes of this study, which is concerned with the aggregate demand for cars in Ireland, these are probably over-estimates as they refer to the elasticity for an individual model. In other words, once a purchaser has made a decision to buy a car they are likely to be much more sensitive to price differences between different models within a class of cars. Similarly, because these studies focus on the choice between brands, rather than on the decision to buy a car in the first place, they do not typically report income elasticity. Income is assumed not to influence the decision as to which brand (within a class) to buy.

Goldberg and Verhoven (2001) implemented the same sort of model for the EU[63]. However, they only had data for five of the bigger EU countries. In particular, Ireland was not included but the UK was. Nevertheless, their finding of an own price elasticity of about -5 shows that previous results were not specific to the US.

The EU Commission (2002) estimated a similar model to the one developed here using data from a number of Member States[64]. They aggregated all models together so the elasticities are for the overall market and not for the choice between brands. Their results are similar to those found below using Irish data, but the price elasticity is larger in magnitude (and statistically significant) while the income elasticity is lower. Finally McCarthy (1996) estimated a simpler version of the model estimated by

[62] Goldberg, Pinelopi Koujianou. (1995), "Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry", Econometrica, 63, 891-951.
Berry, S., Levinsohn, J. and Pakes, A. (1995), "Automobile Prices in Market Equilibrium", Econometrica, 63, 841-890.

[63] Goldberg, Pinelopi Koujianou and Frank Verhoven (2001) "The Evolution of Price Dispersion in the European Car Market" The Review of Economic Studies, Vol. 68, No. 4, pp. 811-848.

[64] European Commission (2002), "Study on Vehicle Taxation in the Member States of the European Union"

Goldberg (1996)[65]. As such the model is again designed to look primarily at choice between brands rather than the decision to buy a car in the first place. He reported a price elasticity of -0.87 and an income elasticity of 1.7.

Overall the international literature would suggest that estimates presented in Section 4.4 below are a little conservative when it comes to the price elasticity. The estimates presented there are around -0.4. The estimates from the international literature (albeit in models that focus on brand choice) are a full order of magnitude higher.

Table B4.1: Summary Econometric Analysis of Demand for Cars from International Literature

Paper	Data Source	Model	Price Elasticity	Income Elasticity
Goldberg (1995)	US Consumer Survey	Nested Multinomial	-3	Not reported
Berry Levinshon and Pakes (1995)	Aggregate US data	Nested Multinomial	-5	Not reported
Goldberg and Verhoven (2001)	EU data not incl. Ireland	Nested Multinomial	-5	Not reported
European Commission (2002)	EU aggregate data incl. Ireland	OLS	-0.1	0.4
McCarthy (1996)	US Consumer Survey	MNL	-0.87	1.70

Economic theory tells us that price elasticity will fall as the number of substitutes to a particular good falls. As a result, since one car model may be a good substitute for another in the eyes of consumers, the price elasticity of demand for cars in general would be expected to be much lower as there are no good substitutes for owning a car. However, if a used car is a substitute for a new car, then any increase in the price of new cars relative to used cars would be expected to have a significant impact on the demand for new cars.

While this conclusion may be usefully employed as a factor explaining the fall in demand for first registrations in Ireland in 2008 and 2009 – the transactions costs expanded and cars from the UK became cheaper due to exchange rate movements – it is not helpful in terms of the model employed here and the literature search has not uncovered published research on demand in the aggregate car market. i.e. the initial decision about whether or not to buy a car.

B4.2 The Model and Datasets

The model is a quantitative analysis of demand. It is completely standard with one technical exception. This occurs because cars are consumer durables, and while a car

[65] McCarthy Patrick (1996), "Market price and Income Elasticities of New Vehicle Demand", The review of Economics and Statistics, vol. 78, no. 3, pp. 543-547.

is purchased in a specific year its services are consumed over a number of years. The estimation of any demand function requires data on incomes, prices and quantities. The fact that cars are durable means that there is a substantial second market which must be accounted for in the analysis.

The Model

The car market a demand system with two related markets: the market for new cars and the market for second hand cars. This will require the estimation of two demand equations, one for new and one for second hand cars. Technically, this is stated as

$D_N = f_N(P_N,P_S, Y,P_F)$; $D_S= f_S(P_N,P_S, Y,P_F)$;

Where:
D_N is the demand for new cars,
P_N is the price of new cars,
P_S is the price of second hand cars,
Y is income and
P_F is the price of fuel.

The demand equations acknowledge the link between the two markets by allowing the price of second hand cars to affect the demand for new cars i.e. the two are imperfect substitutes. To complement the demand equations there will be two supply equations reflecting the decisions of producers.

$S_N = g_N(P_N-C_N, P_S-C_S)$; $S_S= g_S(P_N-C_N, P_S-C_S)$

The model is closed by the two equilibrium conditions

$S_N = D_N$ and $S_S = D_S$

i.e. demand equals supply in both markets.

Price Data

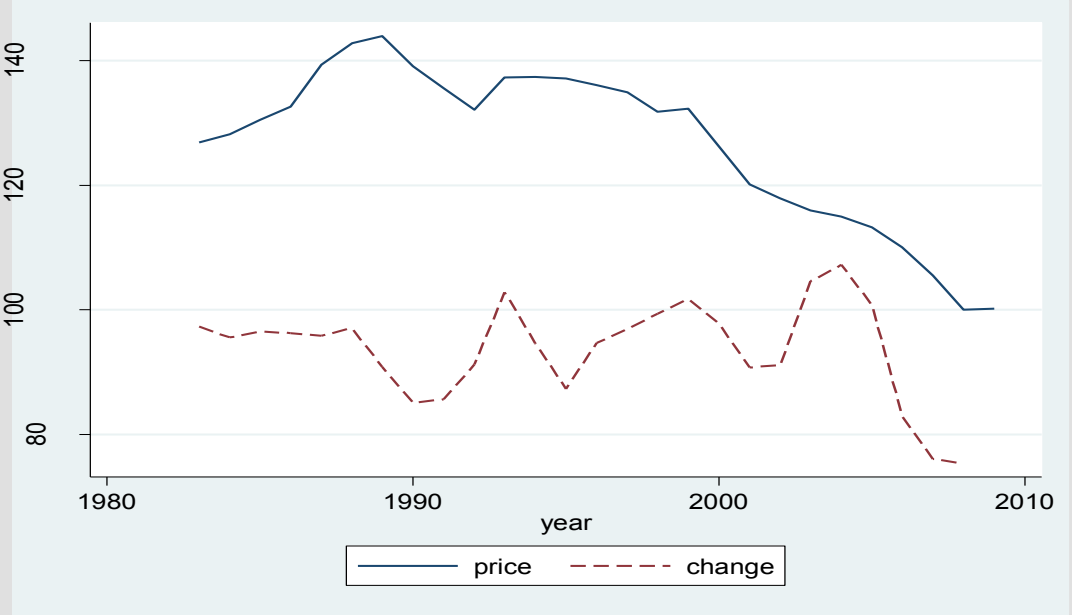
Price data for cars is available from CSO stretching back to the early 1980s. This data was collected as part of the survey that generates the Consumer Price Index (CPI). This price was then deflated by the overall CPI to give a *real* price index i.e. the price of cars relative to all other goods and services. There is one technical problem with this data, however. The price of second hand cars is not independently surveyed and, in effect, prices of second hand cars are assumed to track those of new cars. Thus, the CSO price index for used cars is a fractional index of the new car price index. As a result, changes in the relative prices of the two types of cars cannot be identified. Thus this price series is not suitable for analysing the car market during periods where the cost of change may have varied substantially.

In order to address this issue, a used car price index would have to be constructed by sampling records of used car prices going back to the 1980s. This was done by Motor Trade Publishers from their publication *The Car Sales Guide*. The methodology for the construction of the index was the following: The car market was divided into three sectors: mini; medium family segment; and large family/fleet. Valuations from

September of each year were used for the yearly price.[66] The second hand car price was defined as the price of a three year old model. In each market segment the top three models by sales were chosen and an average price was reported.

The cost of change was calculated in this manner and is shown in Figure B4.1, together with the CSO's price index. Both are deflated by the CPI so they are in real terms. Note also that both are indices so their levels are not comparable.

Figure B4.1: The Real Price of New Cars and the Real Cost of Change



Quantity Data

The quantity variable is available from the CSO. It reports the number of "New Cars Registered for the First Time". This is taken to be a proxy for new car sales. The CSO also provides a series on "Second-Hand Cars Registered for the First Time". This is taken to be second hand cars imported for sale. These represent only a small fraction of total second-hand sales as most second-hand sales are of cars previously registered in Ireland. The CSO provides a series on change of ownership of cars, but this is available only since 2000.[67] Nevertheless, this series can be incorporated into the analysis, subject to some caveats (see section 4.4 below). Figure B4.2 illustrates the trend growth in car sales per capita over the last 10 years.

Income Data

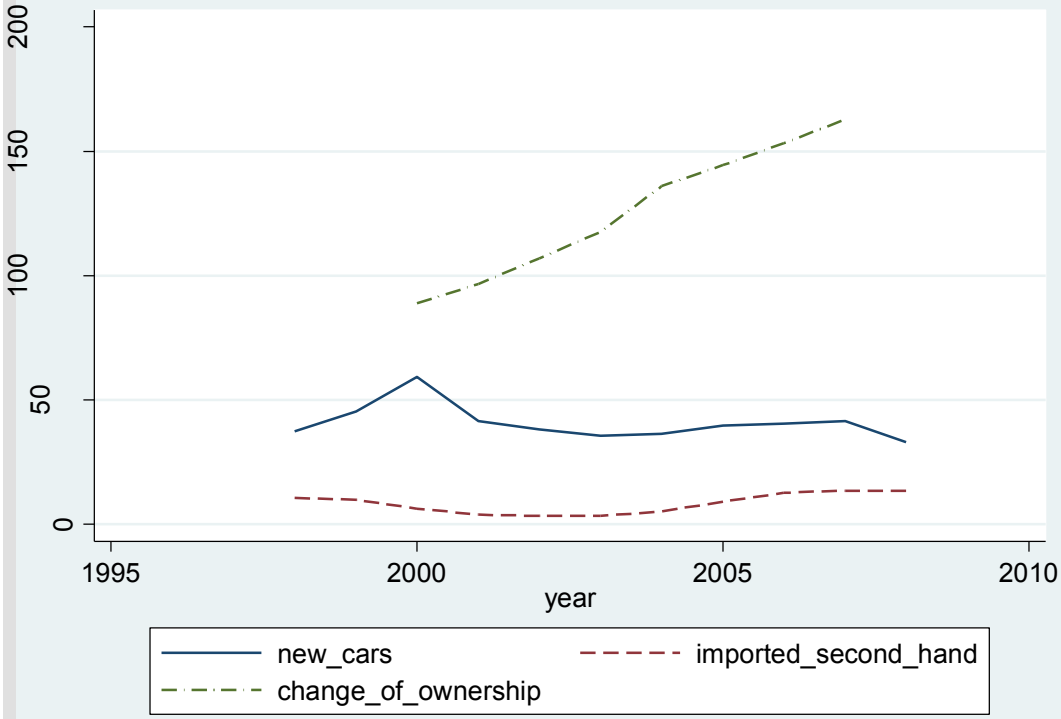
The other main driver of demand for cars is the level of income. The CSO provides data on Gross Domestic Product (GDP). A standard procedure is to take this figure deflated by average prices and divided by the population as a proxy for income. It might be argued that such a measure is too general and some sort of wage or personal

[66] The only exception was in 2008 when the changes to VRT in July and the effects of recession meant that September was not a good choice. Therefore the average of April and September values was used for 2008.

[67] Change in owner ship is reported separately for what are described as "Private Motorists and "Garages". The private motorists statistic is taken as the proxy for second-hand sales

income variable should be used. Therefore, as a double check on this procedure, the model is also estimated using real wages as reported by OECD.[68]

Figure B4.2: Annual Car Sales per 1000 people



Quality Data

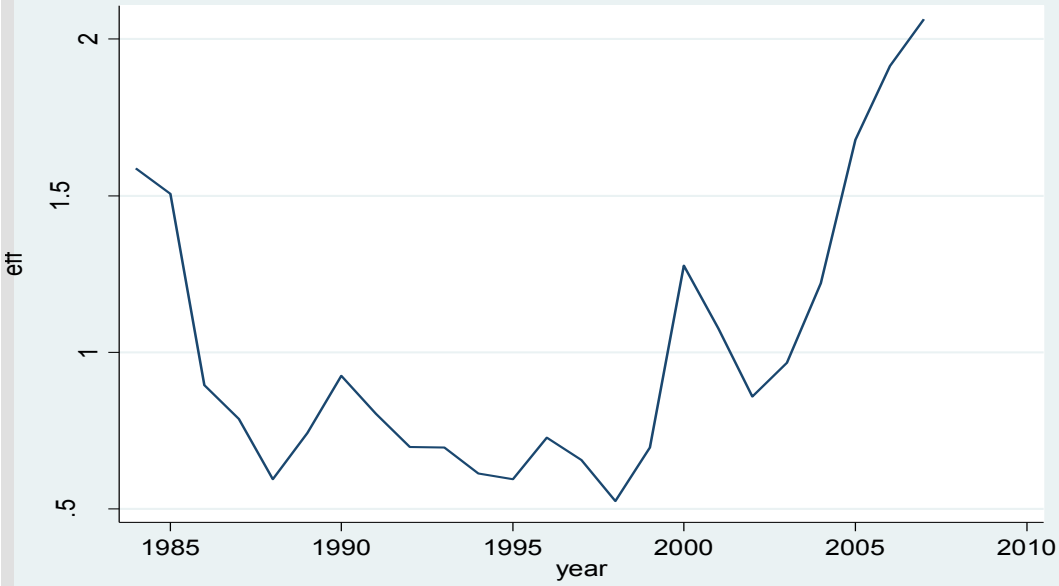
This leaves one other important issue. The fact is that what constitutes a car has changed dramatically over the last three decades. Manufacturers constantly innovate with the result that the quality of the good changes. This affects consumers' perceptions of what is being received in the transaction for any given amount of money. Everything from safety issues to fuel efficiency to cup holders will affect the price the consumer will be willing to pay. In economics, a car is described as a hedonic good and the dataset that is used to estimate demand would ideally break the price down into separate payment for each element of the good[69]. However, this is not accounted for in the CSO price index which is not hedonic although it is a misspecification to suggest that a car in 1980 is a perfect substitute for a car in 2008.

[68] To be precise "Real Compensation of Employees" from OECD Economic Outlook is used as the real wage.

[69] The idea of a hedonic good is that a particular product on the market at any time is comprised of certain measurable characteristics such as size, weight, power, speed, comfort, etc. However, these can change over time and this change is perceived by consumers although it is not overtly reflected in price data. A hedonic econometric model is one where the independent variables are related to changes in quality. It is based on the hypothesis that regression methods can be used to estimate by how much the price varies in relation to each of the characteristics. To use it here, independent pricing of each of the characteristics would be required but this is not available for cars.

One aspect of quality which can be quantified is fuel efficiency. This is an important aspect of the quality of cars and one that has improved dramatically over the last few years. While no aggregate data is available on fuel efficiency, an approximation can be created. The CSO provides information on the net imports of petroleum and petroleum products. If this figure is then divided by the stock of private cars, a rough index of the aggregate fuel efficiency of the car stock will be derived. This figure will be compromised to the extent that the trade data lumps petrol imports together with "petrol related products" some of which are not used as fuels in cars. Nevertheless, the index (shown in Figure B4.3) is likely a reasonable approximation. It appears to be consistent with figures produce for the UK by SMMT.[70]

Figure B4.3: Fuel Efficiency as measured by Net imports of Petroleum per Car



B4.3 Results of the Statistical Model

The analysis of the data in the previous section strongly suggests that the demand for cars is mainly influenced by income. In order to verify this, all the variables were estimated in a statistical model at once. Various different specifications of the model were estimated. The results are shown in Table B4.2. Note that all the variables are in logs so that the coefficients represent elasticities.

The first column of Table B4.2 shows the estimation of the demand equation for new cars by the Ordinary Least Squares (OLS) method. As can be seen, these estimates are implausible. The price effect is estimated to be positive implying that increases in prices would actually increase sales. The most likely reason for this perverse result is that prices are affected by the supply side also (the other equation in the model). In estimating a demand equation, the focus is on how price influences the quantity sold. But the price itself is also influenced from the supply side i.e. price is an endogenous variable. It is both the cause of changes in demand and caused by supply.

[70] See SMMT (2009) chart 4 p.8.

Table B4.2: Estimates of the Statistical Model

	New Reg (OLS)	New Reg (IV)	Used (IV)	New Reg (IV)	New Reg (IV)
Price	2.21 (0.54)	-0.42 (2.35)	-0.16 (0.93)		
Cost of Change				-0.19 (1.01)	-4.29 (9.66)
Income	1.62 (0.13)	1.06 (0.51)	0.42 (0.20)	1.14 (0.10)	1.13 (0.18)
Fuel price					
Fuel eff.	0.65 (0.30)	-0.33 (0.93)	-0.13 (0.37)	-0.19 (0.30)	2.16 (4.08)
No. of Obs	26	26	26	26	25
R^2	0.94	0.87	0.87	0.89	0.60

Note: Standard errors in parentheses. The log sterling-pound/euro exchange rate is used as the instrument

In order to get around this problem, another estimation procedure, Instrumental Variables (IV) is used with the exchange rate as the instrument. This procedure has the effect of isolating out only causal price effects. The sterling-punt/euro exchange rate is used as the instrument. IV works by first isolating only those price changes that were caused by fluctuations in the exchange rate. These changes will not have been caused by changes in the supply situation in Ireland because the exchange rate is in now way influenced by the state of the car market.

The second column shows the results of the IV estimation. These results make much more sense. The estimated price elasticity is -0.42. Thus a 10 per cent cut in prices would boost sales of new cars by 4.2 per cent. The estimate is not statistically significant which means that in a formal statistical sense the hypothesis that the true value of price effect is zero is not rejected.[71]

Similarly increasing the cost of fuel reduces the demand for new cars. But again this effect is statistically not significant.[72] In fact the only variable that is statistically significant is income. The elasticity of demand with respect to income is approximately 1.[73] This implies that as income rises by 1 per cent, the demand for cars in aggregate rises by 1%. Put another way, the market for cars should rise and fall one for one with overall economic growth. The results appear to be broadly consistent with other evidence. It is in line with the picture that emerged from the informal analysis in section 4.2. Furthermore, a recent report by the EU Commission concluded that purchasing power was the main driver of car demand.[74]

[71] The t statistic is equal to -0.18 generating a p-value of 0.86
[72] The t statistic is equal to -0.36 generating a p-value of 0.725
[73] The t statistic is equal to 2.09 generating a p-value of 0. 0.048
[74] EU Commission (2002) *Study on Vehicle Taxation in the Member States of the European Union*

The first two columns of Table B4.2 refer to the new car market. New car sales represent only a minority of total sales. An analysis of used car sales is clearly needed. As discussed above, there is a problem insofar as second hand sales (derived from change of ownership statistics) are available only since 2000. This would be insufficient to conduct a formal statistical analysis as in Table B4.2. In order to proceed, the missing data needs to be replaced in some way. This is done by measuring how new and used sales move together over the period 2000-2007 – the period for which both series are available. It is assumed that the nature of this co-movement has not changed much over the years. This relationship is then used to derive an historical series for second hand car sales as a function of new car sales going back to 1982.[75]

This series is then used in the regression model to derive estimates of the demand for second hand cars. The IV technique is again used, with the exchange rate as the instrument. The results are shown in the third column of Table B4.2. The results are very similar to those of the new car market. Prices have a negative impact on demand but income matters much more than price. Note that income elasticity of demand is less than half that of new cars. A word of caution in interpreting these results is in order, however. As the data was generated from a first stage regression, the standard errors reported in table 4.2 are probably underestimates of the true standard errors. Thus the estimates are probably less reliable than they appear to be.

The models estimated so far assume that price is one of drivers of demand. However, since most purchases of cars include a trade-in of an older model, what probably really matters, is the cost of change. As discussed in section 4.3 above, no publically available data exists on the cost of change. However, it did prove possible to derive a cost of change series from various editions of the *Cars Sales Handbook*.

This cost of change series can be used in the statistical model in place of the raw price. The results are shown in the fourth column of table 4.2. Note that this regression refers to new cars sales only, so to avoid any complications from using the predicted series for used car sales. Once again the IV technique is used with the exchange rate as instrument. The results are quite similar to those outlined in column two of the table.

One final version of the model can be estimated. As was discussed above, the nature of the product offering has changed dramatically over the decades. The quality of cars has increased along various dimensions and a car today is a very different beast from a car in the early 1980s. Accounting for this in a formal statistical model could be very difficult as there are so many factors that would feed into the concept of quality and there would be much debate about the subjective judgements that would have to made about which were the most important. However, most observers would agree that fuel efficiency is an objectively important measure of car quality. It proved possible to construct an approximate measure of aggregate fuel efficiency.

[75] Formally speaking, a regression of second hand sales is run on new car sales for the 8 years 2000-2008. This regression is then used to "predict" second hand sales since 1982. The coefficient in the regression (with both variables measured in logs) is equal to 0.39 and is statistically significant. The regression has an R2 of 0.99

In the final column of Table B4.2 the results are shown of estimating the model, when the measure of fuel efficiency is included. As before the IV technique is used with the exchange rate as the instrument. The model is restricted to demand for new cars as this data is probably more reliable. The cost of change is used as the price variable.

The results are broadly supportive of what has been shown before. The price (cost of change) effect is now much larger in magnitude although, statistically insignificant.[76] Nevertheless, it is striking that the price effect increases in magnitude by so much once there is control for only one aspect of quality. This is exactly what would be expected to happen. The real price of cars has fallen over the years (see figure 4.1). But once the increase in quality is accounted for, the *quality adjusted* price will have fallen much more dramatically. The car consumer now gets much more car for the price than he/she did 20 years ago. If more aspects of quality could be included in the analysis with more reliable data, it might be expected that price elasticity would be negative, large in magnitude, and statistically significant. This is speculation, of course, but in the light of these results, it seems a reasonable speculation.

[76] The t-statistic is -0.44 and the p-value is -0.662.

5. Scenario Analysis & Demand Projections

5.1 Data and Methodology

The base data source used for cars in Ireland is the Department of Transport's *Irish Bulletin of Vehicle and Driver Statistics*[77]. This shows the number of cars on Ireland's roads in 2008 by the year first registered. The data are annual for the period 1992 to 2007 with an aggregate total for 1991 and earlier. The data show that there were a total of 1,882,901 cars licensed in Ireland in 2008. Clearly the cut-off point of 1992 used in the *Bulletin* for the annual data is somewhat arbitrary although only 1.4% of the total cars were first registered before this date. However, using this cut-off gives a somewhat lumpy final year. To avoid this, the total given in the data for 1991 and earlier was distributed across the years 1980 to 1991 using a simple smoothing formula[78]. Thus, the assumption is that all the cars on the road in 2008 were first registered in or after 1980 and this assumption of a maximum lifespan of 29 years is carried through into the projection.

The number dating from each year of first registration that were still on the road in 2008 was compared with CSO data for first registrations going back to 1980. This provides the percentage of cars registered in each year that were still licensed in 2008. The basic assumption used in the model is that the useful life of cars in the future will be the same as was the case for cars on the road in 2008. For example, according to the calculations, 65.6 per cent of the cars that were first registered in 1996 – 71,748 out of 109,333 – were still licensed in 2008 i.e. 12 years later. The assumption is that 65.6 per cent of the cars that were first registered in 2007 – 118,617 out of 180,754 – will be still licensed 12 years later in 2019. This approach also enables the average age of cars on the road to be estimated. By simply giving age 1 to cars first registered in 2007 and so on, the average age is estimated at 6.63 years in 2008.

Two projections are developed. The first is driven primarily by forecasts for economic recovery as discussed in Chapter 4. The second incorporates issues such as demographics, population projections and car ownership trends in Ireland and the EU to estimate car ownership and sales in the longer term.

5.2 Projection 1: Economic Recovery

The experience of the past few years has shown clearly that economic forecasts can miss major turning points in the economy. This is in part a result of difficulties in the availability of data and timing issues regarding the speed at which the economy will adjust, but the most important issue is that forecasts assume that the way in which people react to economic conditions in the future will be the same as in the past.

[77] Department of Transport (2008) *Irish Bulletin of Vehicle and Driver Statistics* 2007, Table 14.

[78] It was assumed that the 27,084 cars that were first registered before 1992 were first registered during the years 1980 to 1991 using a smoothed sequenced such that the number registered in each year is 75 per cent of the number for the following year. Given that this smoothing refers to only 1.4 per cent of the total there is no meaningful impact on the overall projection.

Thus, when conditions change, people will react in predictable ways. Short term economic forecasts failed to foresee the depth of the current recession. Despite these difficulties, economic forecasts generally are capable of identifying the broad direction of the economy and provided they are interpreted and used with due reference to the fact that the central published forecast is the centre of an error interval they are a legitimate basis for inclusion in projections of sectoral performance.

The main independent economic forecasts published in Ireland are devised by the ESRI. Table 5.1 shows an extract from the most recent edition of this forecast[79].

Table 5.1: Short Term Economic Forecast (2009-2010)

	2009		2010	
	€million	% change	€million	% change
Consumer Expenditure	86,420	-7.0	84,246	-3.0
GDP	165,425	-7.9	160,839	-2.3
GNP	138,558	-8.9	133,687	-2.3

Note: the values for percentage change refer to real growth i.e. price changes have been excluded. These are described as volume changes in the ESRI forecast. Distinguishing between GDP and GNP removes the impact of foreign owned multinationals. GNP is the better indicator of incomes for Irish residents.

Estimates provided by the ESRI indicate that consumer expenditure fell by 1 per cent in 2008 following 5.9 per cent growth in 2007, while GNP fell by 4.6 per cent in 2008 following 2 per cent growth in 2007. These negative growth rates indicate that consumer expenditure in Ireland in 2010 will have approximately fallen back to its level in 2006 while GNP will have returned to its level in 2005. Thus, despite the severity of the recession, in particular the collapse in motor sales, the Irish economy is not returning to the levels of the 1990s or earlier.

As discussed in detail in Chapter 4 the impact of the recession on car sales, with registrations falling by 19 per cent in 2008 and by a further 59 per cent in 2009, has been far greater than analysis of long term relationship predicted. This large fall is not a reaction to a period of outperformance in car registration numbers relative to the economy. The factors that have contributed to this extreme under-performance were discussed in detail in Chapter 4 and indicate that consumer confidence is a major issue. Recent readings show a small recovery, but the index remains far below any levels seen in the period prior to March 2008. Consumer sentiment is fickle and is subject to much greater swings than overall growth in the economy. This leads to the conclusion that the number of first registrations has undershot its trend and sustainable levels and that recovery is likely to be at a much faster rate than the rate of growth of aggregate economic measures as the economy comes out of recession.

Over the longer term, economic performance is governed by the availability of key resources and the ability of the economy to utilise those resources. The approach underlies the longer term forecasts produced by the ESRI[80]. While the most recent forecasts were produced in early 2008 before the extent of the recession was fully realised, the MTR observes that its longer term growth forecasts take into account the potential for a significant downturn in the short term. This work forecast that Irish

[79] ESRI (2009) *Quarterly Economic Commentary*, Summer 2009
[80] ESRI (2008) *Medium Term Review* 2008-2015

GNP would grow at an annual average rate of 3.8% in the period 2010 to 2015 and at 3.5 per cent in 2015 to 2020. Annual growth in personal consumption was forecast at 3.1 per cent and 3.2 per cent in these time period respectively.

As the extent of the recession has become clearer, the ESRI has revised these forecasts to take account of the downturn[81]. Irish growth in the next few years will be determined to a considerable extent by the recovery in the world economy and thereafter by the extent to which Ireland regains competitiveness and stabilises the exchequer accounts. The forecast indicates that by the end of 2010, output per head in Ireland will have fallen back to its 2001 level. However, the potential growth rate remains above 3 per cent per annum and the ESRI concludes that 'when the world economy eventually recovers the Irish economy can be expected to experience a period of above average growth'. As a result, output per head would be restored to its 2007 level by about 2015. This is not to suggest that there is not permanent damage done to the economy and there will remain a permanent loss of output of about 10% compared to what might have been achieved if the recession had not occurred[82].

In summary, while there is ongoing uncertainty regarding the timing of economic recovery, all these forecasts indicate that the Irish economy will grow at above its long term trend once recovery begins. The discussion in Chapter 4 also concluded that while there are some long term implications as a result of severe disruption of the motor sector, the main issues are passing and beyond 2010 should not constrain the sector in resuming growth. As a result of the over-reaction of car registrations to the slowdown, the sector is likely to recover fairly quickly once confidence begins to return suggesting that the number of first registrations that was achieved in 2007 is again possible by around 2015.

Estimates for Projection 1: Economic Recovery & Growth

Along with assumptions discussed earlier regarding the future age structure of cars licensed in Ireland, the basic assumption of this projection is that, following a period of recovery, future car registration will be determined by the rate of growth of the economy. The econometric analysis supports the idea of economic growth – income growth – being the key economic variable in explaining demand. Table 4.2 above shows forecast economic growth per capita up to 2015. This is translated into predicted annual registrations based on the econometric model in Figure 4.4. The key point of this prediction is that registrations in 2015 would total 237,500 approximately equalling the 2007 level.

Clearly, to get to this level from the projected level of about 100,000 in 2009, sales will have to grow faster than income i.e. there will have to be a period of recovery in

[81] Bergin, A., T. Conefrey, J. FitzGerald and I. Kearney (2009) *Recover Scenarios for Ireland*. ESRI Research Series N. 7

[82] The ESRI also consider as an alternative scenario the prospect that the world recession will persist into 2012. The impact is to delay the return to growth in Ireland so that the average annual rate of growth of GNP in 2010 to 2015 is reduced to 4.7%. A key impact of the prolonged recession scenario would be that the rate of unemployment in Ireland would remain higher for longer and would likely induce significant emigration as well as keeping wage rates somewhat lower. Emigration would have implications for the rate of car registrations in Ireland as discussed below but this scenario is given a lower probability by the ESRI.

the car stock with sales growth ahead of economic growth. To get to this level, total registrations after 2009 would need to grow at 15.5 per cent per annum. This is required to get the level of registrations back to that predicted according to economic growth forecasts and the relationship identified in the econometric model. After 2015, annual registrations grow at 2.4 per cent per annum in line with the forecast in Table 4.2. Table 5.2 shows the annual rate of new registrations in this projection and the resulting number of cars licensed in Ireland[83].

Table 5.2: Projection 1: First Registrations and Car Stock 2009-2021

	Total Registrations	Sales in Ireland	Imports	Total Cars in Stock	Annual % change	% Change over 2009
2009	99,962	59,962	40,000	2,035,259	-2.6%	
2010	115,471	76,981	38,490	2,027,097	-0.4%	-0.4%
2011	133,386	100,040	33,346	2,020,349	-0.3%	-0.7%
2012	154,081	127,579	26,502	2,009,163	-0.6%	-1.3%
2013	177,986	147,372	30,614	2,003,797	-0.3%	-1.5%
2014	205,601	170,238	35,363	2,013,962	0.5%	-1.0%
2015	237,500	196,650	40,850	2,051,854	1.9%	0.8%
2016	243,200	201,370	41,830	2,090,213	1.9%	2.7%
2017	249,036	206,202	42,834	2,138,511	2.3%	5.1%
2018	255,013	211,151	43,862	2,204,570	3.1%	8.3%
2019	261,134	216,219	44,915	2,277,618	3.3%	11.9%
2020	267,401	221,408	45,993	2,358,246	3.5%	15.9%
2021	273,818	226,721	47,097	2,450,472	3.9%	20.4%

This table also divides the total projected number of registrations between sales in Ireland and imports. The annual number of imports has varied a lot as discussed in Chapter 1 and future exchange rates will be important. This projection is based on applying the average proportion of imports in registrations in the period 1983-2008 – 17.2 per cent – to total projected registrations. However, given the extent of imports in recent years, it is unlikely that this percentage is appropriate for 2010 and 2011. As a result, it is assumed that 33% of registrations in 2010 and 25% in 2011 will be of used imported cars[84]. Under this projection, sales in Ireland reach their 2007 level by 2013. The overall car stock declines up to 2013 and stabilises at its 2009 level in 2015. By 2021, the car stock is 20.4 per cent above its 2009 level and growing at about 4 per cent per annum.

Even if the assumption that the average lifetime of cars remains constant is maintained, that average age of cars rises under this projection from six years in 2008 to seven years in 2012 before falling back to the current average age by 2019. As a

[83] This projection is based on a no policy change scenario.

[84] While it is reasonable to assume that long term trends will reassert in the beyond the next few years, it is difficult to be precise regarding developments in the numbers of imports over the next couple of years. The €/£ exchange rate has retrenched somewhat from the levels in early 2009 when it approached parity. As the consultants are not in a position to argue that the foreign exchange market is currently out of equilibrium, is assumed that the current rate of around €1 = £0.86 will continue into the future. Of course, it cannot be ruled out that the UK£ could once again weaken. In this case, the proportion of registrations accounted for by imports would be higher. Clearly, if the level of imports rose to 60,000 in 2010 and 2011, as seen in the 2006-08 period, then sales of cars in Ireland would be lower at 55,471 in 2010 and 73,386 in 2011. This is also deemed to be less probable than the projection shown in Table 5.2 given the rise in car prices in the UK during 2009.

result, it is clear that the car stock is considerably weakened under this projection with all the difficulties – higher maintenance and fuel costs, higher emissions, lower reliability and lower safety standards – that arise with older cars.

Recent experience has shown that economic forecasting is subject to errors and this projection is sensitive to forecasts of the rate of recovery in the near term. If the rate of recovery is slower, with annual growth of 12 per cent rather than 15.5 per cent up to 2015, then the number of registrations does not reach 240,000 until 2017. The car stock falls and only regains the 2008 level in 2019. Sales in Ireland will recover more slowly and reach the 2007 level of 180,000 by 2015.

5.3 Projection 2: Car Ownership and Demographics

A shortcoming of the foregoing projection is that is takes no account of existing trends on car ownership levels or the structure of the Irish population and identifies only economic growth as the determining factor. As shown in Chapter 3 above, Ireland remains low in terms of car ownership rates despite the growth of the past decade, although it has been converging, and the Irish population is relatively young compared with other comparable EU countries. These factors are highly relevant in determining the potential for growth in car registrations. For these reasons, the consultants consider that it is necessary to recognise these issues in developing a projection.

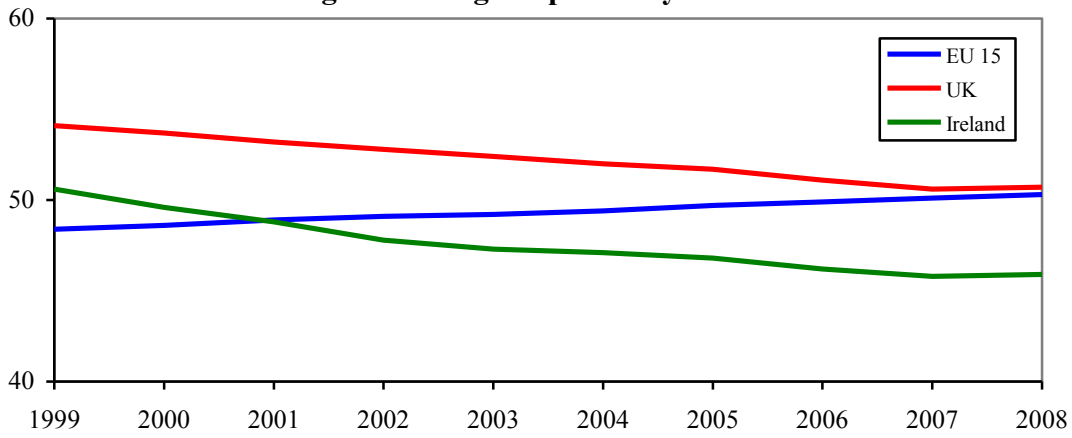
This analysis of car ownership rates in Chapter 3 provides horizons for the car stock in Ireland. At the rate of convergence that existed in the 1991 to 2006 period, Ireland would attain the level of car density in the countries with high taxes in 2011. However, due to the current fall in registrations and the severity of the recession, this is most unlikely to occur.

Population Projections

Ireland has a relatively young population by EU standards. What is important in terms of economic growth prospects and the potential for car ownership to grow is the proportion of the population that is in the productive age groups. This idea is captured by the age dependency ratio. This is defined as the ratio of the population aged 0-14 and aged 65+ to the population aged 15-64. Figure 5.1 shows this ratio for Ireland, the EU-15 and the UK over the past decade.

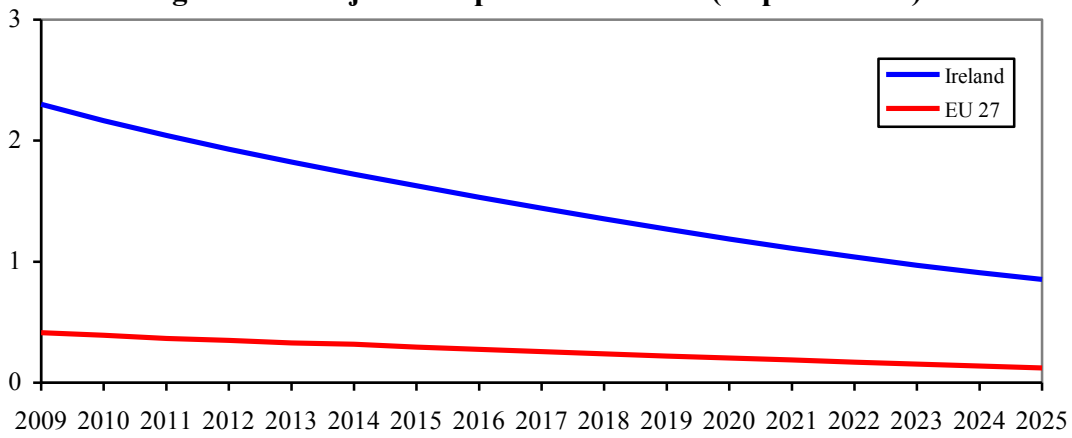
Figure 5.1 shows that from about 2001 the age dependency ratio in Ireland has fallen below the EU-15 average and has been well below the UK level consistently. This has happened as the population bulge that arose in Ireland as a result of high birth rates up to the 1980s has aged meaning that a greater proportion of people are in the productive, car buying age groups. The availability to Ireland of a relative high proportion of its population in the labour force in the coming years is a key reason why Ireland is forecast to outperform the EU in terms of its output growth over the next decade and more.

Figure 5.1: Age Dependency Ratios



In addition to having a more productive population, the age structure in Ireland also means that the population is likely to grow more quickly than for the EU in total. Figure 5.2 shows projected population growth rates in Ireland and the EU in the period 2009 – 2025.

Figure 5.2: Projected Population Growth (% per annum)



Although the rate of population growth projected for Ireland falls over this period to 0.85 per cent per annum by 2025, it remains well above the EU average. The projection shows the Irish population rising to 5.34 million in 2019 and 5.67 million in 2025.

As well as the starting level of the population, the key variables in any population projection are assumptions regarding the levels of fertility mortality and migration. In the case of Ireland, the greatest uncertainty surrounds the levels of migration that will exist in the coming decades. The CSO has developed population projections based on alternative assumptions of migration: ongoing high levels of inward migration but moderating over time (M1) and lower levels of inward migration from 2011 (M2) and no net migration (M0)[85]. Given the severity of the recession being experienced and the comments made by the ESRI regarding the potential for a prolonged recession to stimulate outward migration from 2011, it would seem appropriate to base projections of the lower levels of inward migration. Table 5.3 shows projections on this basis and assumes also that fertility levels decrease from their 2006 levels (F2).

[85] CSO (2008) *Population and Labour Force Projections* 2011-2041

Table 5.3: Population Projections for Ireland

	Population Total	Annual average % change in population in 5-year period	Dependency ratios		
			Young	Old	Total
2006	4,232.9		29.8	15.9	45.7
M2F2					
2011	4,676.0	2.01	29.7	16.8	46.4
2016	5,049.7	1.55	29.6	19.0	48.6
2021	5,356.4	1.19	28.6	21.6	50.2
2026	5,556.8	0.74	26.9	24.8	51.7
M0F2					
2011	4,413.0	0.84	30.6	17.9	48.5
2016	4,568.3	0.69	30.2	21.1	51.3
2021	4,686.4	0.51	28.3	24.6	52.8
2026	4,770.6	0.36	25.3	28.5	53.9

Source: CSO

These projections are fairly similar to the EU projections above when the M2 assumption (moderate but positive inward migration) is used but result in lower growth rates if no net migration is assumed. In addition, the dependency ratios begin to rise somewhat and move closer to the current EU averages by 2021 under the M2F2 assumption.

Whether the M2 or M0 assumption is more relevant will depend on the speed and degree to which Ireland can recover from the current recession. The ESRI assigned a higher probability to the more rapid recovery but it may be prudent to give a higher probability to a prolonged recession given the continuing deterioration in the economy. As a result, the projection below uses the M0F2 numbers.

Estimates for Projection 2: Ownership Rates and Population Projections

The model assumes that car registrations recover from their current levels in line with Projection 1 i.e. they grow by 15.5 per cent per annum in the period 2010-1025 to approach the 2007 level with 237,500 registrations in 2015. The assumption is that after this date the rate of convergence on car ownership levels in high VRT countries that was seen prior to 2008 will reassert as a trend.

In the period 1991-2006, the number of cars per 1,000 of population in Ireland grew by 3.78 per cent per annum and stood at 412 in 2006. The number of cars per 1,000 of population in EU countries with high VRT rates was 441 in 2006 and was growing at 2.35 per cent per annum. So Ireland was converging. If registrations are at the rate shown in Projection 1 up to 2015 then the number of cars per 1,000 of population in that year will have risen to 452. If the previous trend reasserts then this will increase to 565 by 2021. Even if the recession slows the rate of growth of car density in other EU countries Ireland will still have a relatively low number of cars per 1,000 population by 2021. The car stock required to achieve these densities up to 2021 is shown in Table 5.4.

Table 5.4: Car Stock Required for Convergence with High VRT Countries

	Population (000s)	Cars per 1,000	Number of Cars
2015	4,537.0	452	2,050,724
2016	4,568.3	469	2,142,533
2017	4,592.5	487	2,236,548
2018	4,616.6	505	2,331,383
2019	4,640.8	524	2,431,779
2020	4,665.2	544	2,537,869
2021	4,686.4	565	2,647,816

The required levels of registrations are shown in Table 5.5[86]. The most notable points about this table are that the numbers of total registrations grows strongly after 2015 and levels off at about 300,000 per annum. This implies sales in Ireland of about 250,000 per annum. After 2015, the car stock grows at about 4 to 4.5 per cent per annum. After initially falling, the stock recovers its 2009 level in 2015 and by 2021 it is 30 per cent above the 2009 level. Initially, the average age of cars on the road rises to 6.9 years in 2012, from 6 years in 2008, but gradually falls thereafter to 5.75 years in 2021.

Table 5.5: Projection 2: First Registrations and Car Stock 2009-2021

	Total Registrations	Sales in Ireland	Imports	Total Cars in Stock	Annual % change	% Change over 2009
2009	99,962	59,962	40,000	2,035,259	-2.6	
2010	115,471	76,981	38,490	2,027,097	-0.4	-0.4
2011	133,386	100,040	33,346	2,020,349	-0.3	-0.7
2012	154,081	127,579	26,502	2,009,163	-0.6	-1.3
2013	177,986	147,373	30,614	2,003,797	-0.3	-1.5
2014	205,601	170,238	35,363	2,013,962	0.5	-1.0
2015	237,500	196,650	40,850	2,050,724	1.9	0.8
2016	295,521	244,691	50,830	2,142,533	4.5	5.3
2017	309,780	256,498	53,282	2,236,548	4.4	9.9
2018	300,053	248,444	51,609	2,331,383	4.2	14.5
2019	296,422	245,437	50,985	2,431,779	4.3	19.5
2020	293,665	243,155	50,510	2,537,869	4.4	24.7
2021	288,673	239,021	49,652	2,647,816	4.3	30.1

In summary, therefore, projections based on the model developed in Chapter 4 indicate a recovery to 2007 levels of registrations by 2015. After this, it is reasonable to assume, given the projected population growth of Ireland and the age structure of the population that the car stock will grow so that Irish car ownership levels begin to converge on EU levels. This means that registrations and sales in the period from 2015 will exceed the 2007 peak.

It should be noted that the estimates in these projections for sales depend on the assumption that the proportion of imports in the total will be the same as the long term average in the period 1983 to 2008. Imports have been given a big boost by the decline in the value of the UK£ against the Euro. While exchange rates are

[86] The assumptions and comments in relation to Table 5.2 regarding the split between new car sales and imports apply to the projections in this table also.

notoriously difficult to forecast, it would appear that this is a development that could persist given the stance of the ECB with its mandate to protect the currency and the wider mandate adopted by the Bank of England to strengthen the economy. This appears unlikely to change and so it must be concluded that a return to the relative weakness of the Euro that was observed during the years following its introduction appears unlikely. As a result, the pricing advantage that has led to the importation of large numbers of used cars from the UK appears likely to continue. This means that it is possible that a higher proportion of demand than is assumed could be supplied by imports from the UK. This would continue to undermine the economics of the new car retail sector in Ireland and would imply that large amounts of revenues were lost to the Irish exchequer as the VAT on these cars would be paid in the UK.

6 Recommendations

The motor retail sector has been hit with a number of adverse shocks over the past few years. These can usefully be categorised according to whether they relate to short term or longer term issues affecting businesses conditions. The first type are problems relating to and arising from the severe downturn of the past two years, which is likely to persist for at least another year, before a period of recovery up to about 2013. The second type relates to longer term problems, some of which arise from the structure of the sector but many of which arise as deadweight losses of the tax system and its impact on consumer welfare, the distortion of competition and the risks that arise from the asymmetrical integration of the Irish and UK car markets. The recommendations are framed to address both of these sets of difficulties.

6.1 Stabilising the Sector in the Short Run

Scrappage Scheme

As discussed earlier in Chapter 3, scrappage schemes comprise the main type of initiative that has been introduced by Governments to stabilise or stimulate motor sectors in developed economies. The most generous schemes have been in countries with important car manufacturing industries but initiatives have not been limited to these economies. Ireland of course has experience with the successful operation of a scrappage scheme in the 1990s. As an initiative to address the short term crisis in the motor retail sector, this approach has a number of important benefits.

- Scrappage schemes have been shown to work and the take-up in schemes introduced in response to the current crisis is generally deemed to be a success;
- The schemes are fast acting in the sense that consumers' response times tend to be short. A scheme can be introduced with a finite time horizon and cost budget which protects the exchequer, minimises deadweight and promotes fast take-up;
- Government expenditure has immediate huge leverage on expenditure. A scheme along the lines outlined below would leverage expenditure of 8 to 10 times the exchequer input. Since employment and taxes depend on total expenditure this suggests a very effective mechanism;
- Scrappage schemes are selective in the sense that they can include specific requirements such as the age of the car being traded in, the engine capacity and fuel consumption and energy efficiency of the new car. Furthermore, the scheme can require co-financing from the industry;
- The impact is therefore that along with stimulating the sector to protect businesses, jobs and tax revenues, scrappage schemes can assist in reducing emissions, lower dependence on imported fuel, and help in achieving an orderly adjustment of the motor retail sector.

It is recommended that a co-financed scrappage scheme worth €2,000 per car be introduced for cars first registered before 2000 when traded in against a new car sold in Ireland with emissions below 140g CO_2 per km. As an illustration

incorporating revenue neutrality the scheme was evaluated using an exchequer contribution of €1,250 per car. The scheme should have a total exchequer budget of €100 million and should operate for two years. The scheme should be limited to private purchasers of cars who cannot reclaim VAT against the purchase.

The scheme should have short term benefits although in assessing these it is necessary to recognise that there will be an element of deadweight i.e. the scheme will be available to individuals who may have intended trading in their car in any case. However, the potential for this should not be exaggerated. As has been shown over the past few years, price sensitive buyers – it is fair to say that the current owners of cars over 10-years old would tend to be price sensitive – are buying cars imported from the UK. Furthermore, this group is probably the least likely to buy a new car. For the purpose of this calculation, assume that 65 per cent of the people who avail of the scheme would not have bought a new car in Ireland in this period.

With a budget of €100 million, the scheme would be limited to 80,000 cars, so 52,000 of these would represent additional sales. The analysis in Chapter 3 above showed that the average tax take per car for the top-10 selling models was about €6,100. Thus, tax revenue from car sales over the course of the scheme would be about €317 million above what it would otherwise have been[87]. However, while the exchequer immediately recoups €6,100 for every car sold as a result of providing €1,250, it is not correct to conclude that the scheme therefore pays for itself. This revenue should be treated as revenue that would accrue in any case but is brought forward by about two years. Thus, the actual gain is the interest that would be saved on the Government borrowing this revenue for two years. At 5 per cent per annum this amounts to €32 million.

The most recent SIMI budget submission estimated that there could be up to 5,000 jobs lost in the sector this year. The survey results discussed in Chapter 2 above showed that in 2007 the average labour cost per car sold was €1,250. On this basis, the value of 52,000 additional car sales in terms of salaries would be €65 million. If it is assumed that jobs on average provide salaries of €40,000 per annum, just above the average industrial wage then this would equate to 1,625 jobs, about one-third of the jobs that are at risk. If the average tax take is 25 per cent, then every job saved increases incomes taxes by €10,000 per annum. Social welfare payments, which would cost a further €10,000 per person per year, would also be avoided. Over the 2 years of its operation the scheme would therefore save the exchequer €65 million.

One of the most attractive savings would be in terms of emissions. It is estimated that by replacing a 10 year old car with a new car will cut emissions by around 50g CO_2 per km[88]. As a result, assuming a life of 200,000 km for a car bought under the scheme, the total saving from the 52,000 additional cars during their lifetime will be

[87] If the reduction in VRT as discussed is introduced along with the scrappage scheme then tax revenue from sales will be about €263 million higher than without the scheme.

[88] Data from the Society of Motor Manufacturers and Traders (SMMT) in the UK show that average emissions for new cars sold in 1999 was 190g CO_2 per km. This had fallen to below 140g by 2008 and clearly, for smaller cars, it will be lower than this average. The 120g limit recommended for the scheme means that the average saving will be 50g CO_2 per km.

520,000 tonnes CO_2. Valued at €14.50 per tonne this amounts to a saving worth €8 million[89].

Together these values are sufficient to cover the cost of the scheme. An additional important benefit is that by easing the crisis the sector would be better able to adapt in a planned manner to the changes that are happening and to need for consolidation. Furthermore, the stimulus that would be provided to the sector would also lead to additional demand in related services sectors in the wider economy.

Rental Sector
The rental sector buys cars during the first part of the year with a peak in March to May and then places these cars back on the market in September. The VRT rules includes a 15 to 20 per cent refund to the sector that was initially introduced to replace a prior existing grant. It is proposed to remove this refund starting in 2010. The main argument put forward for its removal is that the refund is costly to administer. This would suggest that there is a more cost efficient manner in which to support the sector but this has not been announced. The longer term impact of removing this refund is likely to be a fairly small fall in demand as rental prices rise. However, in the short term impact is increasing the perception of risk in the sector and is likely to thereby suppress demand for rental cars in 2010. ***It is recommended that the process of removing the VRT refund for rental cars should be delayed for 2 years until the sector has stabilised i.e. it should be removed beginning in 2012.***

VRT assessment of imports
Cars imported to Ireland are subject to VRT and an assessment of liability is carried out. However, it has been indicated to the consultants that the assessment of VRT liability that is used does not always ensure that there is no tax saving relative to buying a new car in Ireland. ***It is recommended that the assessment procedure is reviewed in detail and in its operation to identify and eliminate any such benefits.***

6.2 Addressing Structural and Operational Inefficiencies

Reform of VRT
In light of the analysis in this report and in line with the conclusions and policy direction set out by the European Commission, the consultants consider that adopting a do-nothing approach towards VRT in the longer term would result in a continuation of the costly distortions that result from VRT. ***It is recommended that a target should be set that VRT will be eliminated within 10 years, that the reform should be undertaken in a manner that is revenue neutral and that the revised taxation of cars should provide a strong incentive to reduce emissions by incentivising consumers to purchase low emissions cars and fuels and drive then to the extent that emissions are reduced.***

Four options for reform have been analysed in Chapter 3 above:

[89] CO_2 credits are currently trading at about €14.20 per tonne. This price is likely to rise as economies recover.

- Remove VRT in a single move in the short run so as to avoid the ongoing deadweight costs of the tax.
- Remove VRT in an incremental series of reductions according to a pre-announced programme in order to reduce uncertainty about the future.
- Reduce VRT by 10 per cent and then allow the revenue stream to wither away as emissions from cars fall.
- Remove VRT according to a pragmatic timetable that allows for alternative sources of revenue to be generated and that minimises the disruptive impact of the change on consumers' decisions.

The first option would require a big price increase in petrol and would likely result in a revenue shortfall and a fall in car buying in the short term. ***As a result, the consultants do not favour this approach.*** The second would provide an incentive for consumers to defer purchases in the early years when a sales stimulus is required and would allow the costs of VRT to persist. ***For these reasons, this incremental approach is not advocated.*** The third option to allow VRT to wither away has some merit but it is risky as it depends on emissions targets being achieved and for the government to facilitate the loss of a revenue source without action. It also allows VRT to persist as a revenue generating tax and so ***this approach is not advocated.***

The final approach aims to combine the best features of the once-off and incremental reductions while minimising the risks. The approach is as follows:

- at end 2009 the Government undertakes a once-off reduction in VRT of 25% compared to its value in a no change scenario;
- at that time, a number of measures, detailed below, are introduced to overcome the main distortions to the smooth operation of the sector;
- When new car sales start to recover towards their 2007 levels, such that the risks of consumers deferring their purchases are reduced, the Government pre-commits to a programme of reductions in VRT to remove the tax completely over say five years. According to the projections in this report this programme would be implemented from Budget 2013 onwards.

This approach establishes the objective for Ireland to move into line with other EU countries and the policy direction that has been set out by the European Commission by eliminating VRT and moving the balance of taxation on fuels i.e. on to car usage. This is much more in line with good environmental policy and would remove the severe trade, consumer welfare and competition distortions that exist currently. At the same time, this approach would avoid creating an incentive for consumers to prolong the downturn in car sales by deferring decisions to replace and would allow for an incremental adjustment to more fuel efficient cars and driving patterns. As a result, ***it is recommended that the effective VRT rate on cars be reduced by 25 per cent in the next budget and that when car sales have recovered to trend levels that the Government commit to a five year programme to eliminate VRT completely in a revenue neutral manner.*** At the same time the interim measures discussed below to ease the distortionary impacts of the residual levels of VRT should be introduced during the adjustment period.

The consultants recognise that the 2008 VRT changes caused considerable disruption to the motor sector and there is the potential that a reduction in VRT would lead to losses for dealers, contract hire companies and rental companies as used cars in stock

would depreciate in line with the VRT reduction. However, if the reform is introduced at the start of the year, it is expected that the disruption would be less, particularly since the stock of used cars in dealers is now lower than in July 2008. However, it would not be eliminated and the potential for changes to VRT to disrupt the sector and cause losses is still present. As a result, ***it is recommended that the Government should engage in consultations with the sector in advance of the reform of VRT to identify measures to minimise the disruption***.

Seasonality and the Number Plate

The issue of the seasonal nature of new car sales in Ireland was discussed in Chapter 2 and is identified a source of inefficiency in the supply chain as it pushes up the costs of dealers. The inclusion of the year of first registration in the registration number leads to an excess emphasis on the year of first registration as an indicator of the quality and value of a car, although this feature should be only one factor in determining the quality of the car. As a result, this format is distorting the seasonal distribution of demand, is making the sector inefficient in terms of the leverage of assets and is distorting the customers' perceptions of new and used cars and the prices of used cars. The inclusion of the initial county of registration is also distorting prices in the used car market. There are good reasons from the point of view of both dealers and customers to address this issue. ***It is recommended that the format of Irish number plates be revised following consultations with the industry to one that does not actually contain the year of first registration but where the age of the vehicle can be ascertained easily.*** There are various options such as the sequential numbering used in the UK or a modified version of this system to allow for easy identification of the county of current residence of the car's owner rather than where it was first registered and these can be explored in consultation with the industry.

VRT Offset Scheme

The Irish industry will remain effectively excluded from the UK market during the adjustment period until VRT is removed. While VRT is payable on cars imported to Ireland, there is no scheme for exports. The EU has recommended that any country continuing to levy registration taxes should provide a refund of residual tax for vehicles exported. This is a very important issue for Irish dealers since it would allow for the export of peak time used cars to quickly remove them from the market and then later in the year cars could be imported as required. Since a particular stock of cars will be required irrespective of their origin, the introduction of a scheme whereby excess used cars early in the year were exported with a refund of residual VRT and then imported later with VRT being paid would have no net impact on the exchequer.

However, some cars are exported from Ireland for reasons other than this, such as Irish people moving abroad. Providing a simple refund scheme would therefore have some deadweight consequence. ***It is recommended that a VRT off-set scheme should be introduced whereby the export of a car to the UK or other EU member states would create a VRT credit equal to the residual VRT in that vehicle that could be offset against a VRT liability.*** The scheme would apply to registered companies engaged in the motor trade only and the credit would remain valid for a period of two years. The credit would also be transferrable between registered companies during this period.

Road Tax Rates

The car road tax reform that was introduced in 2008 has had a disproportionate impact on the market, in part arising from its differentiation of similar cars according to their year of registration. Cars with similar levels of emissions are liable to very different rates of road taxation and tax induced trade flows of the type criticised by the EU have been experienced. ***It is recommended that a uniform system of road taxation should be used, based on CO_2 emissions, and applied to all vehicles irrespective of the year of registration.*** Consultations should be undertaken with the industry in designing this system.

VAT Margin Scheme

To assist dealers in handling the distortions to cash flow that arise due to the highly seasonal peak over the winter months, ***it is recommended that the motor sector should be included in the VAT margin scheme for second-hand movable goods and motor vehicles be reclassified as margin scheme goods under the regulations***.

6.3 Business Strategies

The motor retail sector is very fragmented and is in a period where it will, undergo a process of adjustment and consolidation. It appears likely that the need for this adjustment was disguised by strong growth over the past decade or so. This process will mean that some businesses will close and the recommendations below are designed to assist the sector through the current crisis and remove distortions in the market in the longer term rather than to impede this process. In other words, they should not be seen as aiming to prop up the sector in its current format or to avoid business closures and jobs losses where there are reasons to doubt the long term viability, or desirability, of these business. This is structural change and sustainable economic development and competitiveness can only occur if some losses occur so that new business operations and processes can survive.

Despite the years of boom, the motor retail sector entered the downturn in a weak position. It is important that the sector takes this lesson on board. ***It is recommended that the retail sector engages in an exercise to identify best business and management practices to ensure it is as competitive as possible***. It is likely that this is best done laterally within the sector i.e. working with distributors and manufacturers where each is complimentary and has a role in the supply chain, rather than as a sector of competing interests. **As part of this,** ***it is recommended that the sector is careful that in its communications with policymakers that the topics chosen are those that aim to improve efficiency and consumer welfare*** and that issues that may artificially prolong outdated businesses or practices are avoided.

In the long term, the sector is under pressure from manufacturers with considerable economic and pricing power. Manufacturers are developing strategies to cut the costs of getting cars to market and to increase their influence in the market. This strategic is not about to change. ***It is recommended that dealers work closely with manufacturers to clearly identify their role in these new strategies***. This will likely

mean a loss of independence, but the era of dealers working independently rather than as part of a supply chain is passing.

One important element of the process of buying a car is acquiring finance. Over the past few decades various relationships have been formed to ensure that this finance is available. However, these relationships are dominated by the finance houses and the implications of this have been seen in terms of changed requirements with seemingly little input from the retail sector. This issue is too important to performance to be ignored. ***It is recommended that dealers engage with manufacturers to create long term structures that would ensure a more reliable flow of finance*** and that the criteria governing the allocation of finance would work to ease the cyclical nature of demand rather than the reverse as has been demonstrated in the current downturn.

Improving Data Quality

Finally, the consultants have faced a number of data deficiencies in undertaking the research for this report. The official mechanism for data on used car prices is inadequate and there is no official way of adjusting price data to recognise the improvements in the technical quality of vehicles that have occurred. Official statistics do not always distinguish between different parts of the industry and sometimes combine motor retail and servicing for example. An official series on annual deregistrations would also be useful. ***It is recommended that statistical sources be upgraded in respect of data on used car transactions and prices and that the research be undertaken into the potential for a hedonic i.e. quality adjusted, price series for new cars to be developed.***