

# **THE ECONOMIC VALUE OF THE HOUSE BUILDING INDUSTRY IN SCOTLAND**



**A REPORT  
for  
HOMES FOR SCOTLAND  
by  
MACKAY CONSULTANTS**

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**November 2007**

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# *The Economic Value of the House Building Industry in Scotland*

## 1.0 INTRODUCTION

- 1.1 The house building industry is a very important industry in Scotland but relatively little is known about its economic value and impact on the economy. In the “official statistics” house building is usually included in the construction industry, so there are relatively few statistics on house building on its own. This report for Homes for Scotland sets out the main economic indicators which are available.
- 1.2 It updates the information in similar reports produced for Homes for Scotland in 2001, 2003 and 2005. In recent years there have been very large rises in house prices so obviously the value of the industry has changed significantly.
- 1.3 There is a wide variety of house builders in Scotland, ranging from well known UK companies, major Scottish companies and regional companies to small firms and one man businesses. There are about 1300 firms in Scotland registered with the National House-Building Council (NHBC), although we understand that only a few hundred of them are currently active.
- 1.4 Homes for Scotland currently have about 115 member organisations and 80 associate companies, who account for about 95% of all new homes built for sale in Scotland.
- 1.5 There were 2,417,759 dwellings in Scotland on the Council Tax register in September 2006, according to the Scottish Government’s “Housing Trends” statistical bulletin. The stock has increased slowly over the last decade, eg from just over 2.2 million in 1996.
- 1.6 The current Scottish population is just under 5.2 million, so the average occupancy rate is about 2.11 people per dwelling. The number of households in 2006 is estimated at 2,292,000.
- 1.7 Of the estimated stock of dwellings at the end of 2005, 67% were owner-occupied, 15% rented from public authorities and 18% other tenure. The owner-occupied proportion has increased steadily in recent years, eg from 55% in 1993, as has the proportion renting from housing associations, but there has been a substantial fall in the proportion renting from public authorities.
- 1.8 Table 1 sets out the number of new houses (or dwellings) built in Scotland in each year since 1997. These are also shown graphically in Figure 1.

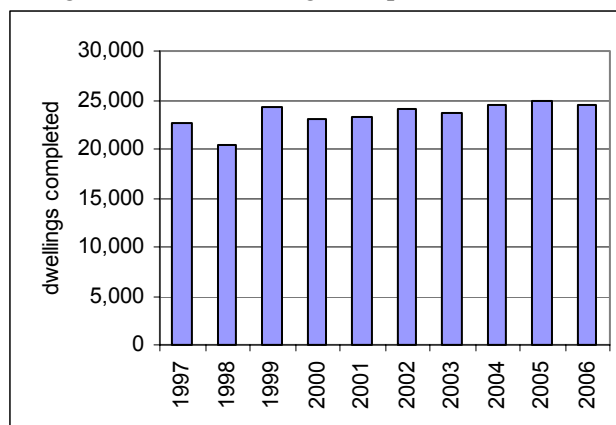
Table 1: New dwellings completed, 1997-2006

year	number	% change
1997	22,556	-
1998	20,385	-9.6
1999	24,387	+19.6
2000	23,063	-5.4
2001	23,361	+1.3
2002	23,997	+2.7
2003	23,740	-1.1
2004	24,561	+3.5
2005	24,930	+1.5
2006	24,581	-1.4

Source: Scottish Executive: Housing Trends in Scotland:  
Quarter ending 31<sup>st</sup> December 2006

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**Figure 1: New dwellings completed, 1997-2006**



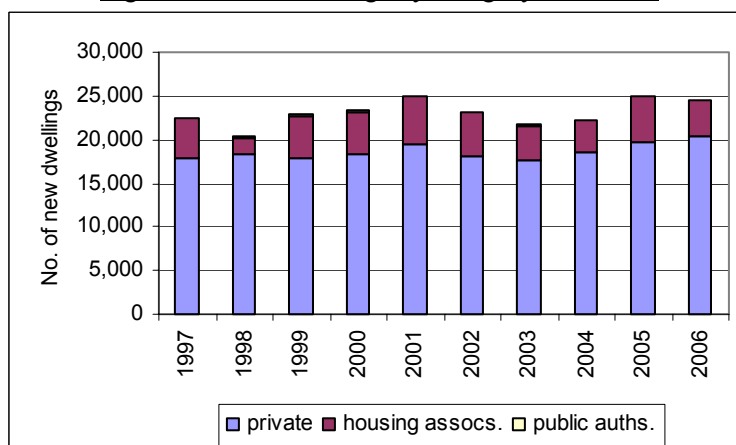
- 1.9 The annual average for the ten years is 23,556, although the table and figure show fluctuations from year to year. The totals have been above 24,000 in each of the last three years, although there was a -1.4% fall in 2006.
- 1.10 Table 2 and Figure 2 give the breakdowns between the private sector, housing associations and public authorities.

**Table 2: New dwellings by category of builder**

year	private sector	housing associations	public authorities	totals
1997	17,872	4,507	177	22,556
1998	18,335	1,911	138	20,385
1999	17,839	4,911	81	24,387
2000	18,326	4,894	95	23,063
2001	19,398	5,502	72	23,361
2002	18,033	5,120	51	23,997
2003	17,686	3,939	53	23,740
2004	18,620	3,483	0	24,561
2005	19,661	5,231	0	24,930
2006	20,371	4,204	6	24,581

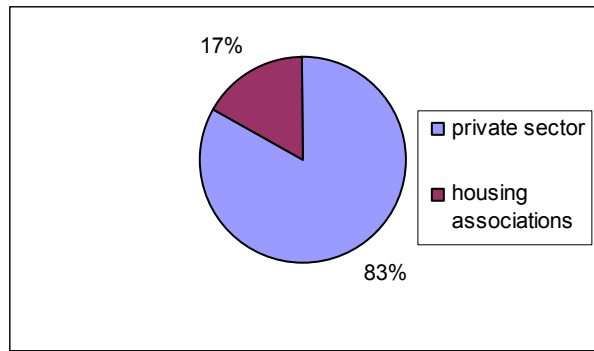
Source: Scottish Executive: Housing Trends in Scotland

**Figure 2: New dwellings by category of builder**



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- 1.11 In 2006 the private sector built 83% of the total and housing associations 17%, as illustrated below. There were only six completions by public authorities.



- 1.12 It can be seen from Table 2 and Figure 2 that the level of new building by the private sector has been relatively stable over the decade. The annual fluctuations have mainly been as a result of building for housing associations.
- 1.13 Public authorities built only six new dwellings in 2006 and none in the previous two years. They are now a tiny part of the house building industry in Scotland, although that may change in the near future.
- 1.14 As mentioned earlier, the Government estimate that the housing stock as at 31<sup>st</sup> December 2005 was 2,407,000 dwellings. The 24,581 new dwellings in 2006 represent just over 1.0% of that total.
- 1.15 That percentage of about 1% has been quite stable over the last few years. Thus it seems reasonable to state that at the present time annual house building in Scotland is equivalent to about 1% of the existing stock of dwellings.
- 1.16 Average household size is declining, however, as fewer young people live with their families. There has been a notable increase in the construction of one bedroom flats, for example. Thus the 1% average should rise slowly over time.
- 1.17 Nevertheless, a 1% new building rate is very low by international standards. It is similar with that for the UK as a whole but the UK rate is one of the lowest of all the European Union economies.

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### 2.0 THE ECONOMIC OUTPUT OF THE INDUSTRY

2.1 A good indicator of the economic value of the house building industry in Scotland can be made by multiplying the number of houses built by their average price. There are various sources of house price data but most of them cover both new and existing dwellings. Our interest in this report is primarily with new building.

2.2 The National House-Building Council (NHBC) provided us with the following estimates of average prices for new houses in Scotland:

2000	£92,000	
2001	£101,000	+11.0%
2002	£117,000	+15.8%
2003	£135,000	+15.4%
2004	£166,000	+23.0%
2005	£181,000	+9.0%
2006	£188,000	+3.9%

2.3 There is no doubt that there have been large increases in house prices in Scotland – and in the rest of the UK – over the last few years. The above figures are in current prices and therefore do not take into account inflation but over the last few years that has averaged only about +2% a year. Even if that is deducted the average annual increase in the price of new houses in Scotland has been over +10%.

2.4 The figures above, however, suggest a significant slowdown in price rises in 2006 and, to a lesser extent, in 2005.

2.5 We should note that the annual averages may not be comparing like with like because the types and sizes of homes may vary from year to year but we do not believe that is significant in the present context.

2.6 The Government's statistics show 24,581 new dwellings completed in 2006. Multiplying that number by the 2006 average price of £188,000 gives a total value of just over £4.6 billion.

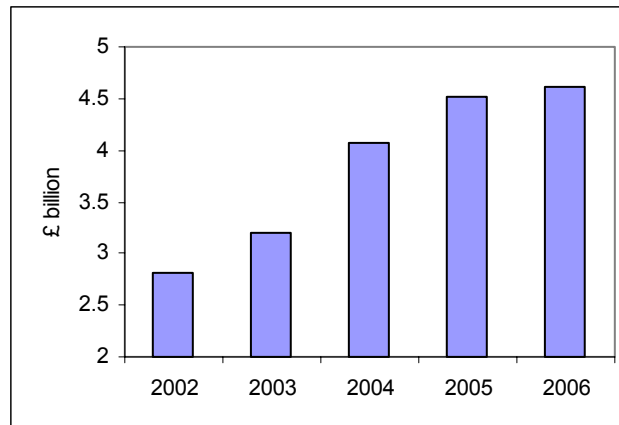
2.7 That value has increased substantially over the last few years, because of the massive increases in house prices. Combining the Government's statistics on completions with the NHBC estimates of average house prices gives the values in Table 3 and Figure 3.

Table 3: Gross value of new homes in Scotland

	Completions	Average price (£)	Gross value (£ billion)	% change
2002	23,997	117,000	2.808	-
2003	23,740	135,000	3.205	+14.1
2004	24,561	166,000	4.077	+27.2
2005	24,930	181,000	4.512	+10.7
2006	24,581	188,000	4.621	+2.4

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**Figure 3: Gross value of new homes in Scotland**



- 2.8 To make comparisons with other industries we need to calculate the net value or net economic output, by deducting from the gross value the cost of materials, other goods and labour. From historical data, the net value is approximately 60% of the gross value. Using that figure, the net value of new building in Scotland in 2006 was approximately £2.8 billion.
- 2.9 The Scottish Executive has yet to publish its detailed estimates of Scottish economic output (gross domestic product, GDP) for 2006. In a separate report on “Prospects for the Scottish Economy” we estimate that it was approximately £82.7 billion, excluding the value of oil and gas production from fields in Scottish waters.
- 2.10 The new housing value of £2.8 billion is 3.4% of total Scottish GDP in 2006.
- 2.11 In our 2001 report the estimated share was 1.8% and in 2003 2.4%. The percentage has obviously risen because of the large increases in house prices.
- 2.12 The new building generates multiplier effects in other sectors of the economy, through the purchase of materials and other inputs, and the payments for labour. In the economics literature these are usually described as indirect and induced effects. They can be calculated by empirical research but a more common approach is to use multipliers which have been estimated in previous research.
- 2.13 In the context of this study the most appropriate multipliers to use are those from the input-output tables produced by the Scottish Executive. The latest input-output tables are for 2003. The multiplier values are unlikely to have changed significantly since then.
- 2.14 The input-output tables give data for about 70 separate industries, including construction. However, it is not possible to separate house building from the rest of the construction industry, so we have to use the multipliers for the construction industry as a whole.
- 2.15 The tables give two types of multipliers: Type 1 which cover direct and indirect impacts; and Type 2 which cover direct, indirect and induced impacts. The Type 2 multipliers are the appropriate ones to use in this study. The tables also give separate calculations for output, employment and income multipliers.

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- 2.16 The output multiplier for the construction industry is 1.8. In other words, a direct increase of £1 million in the output of the construction industry will result in an increase in Scottish economic output of £1.8 million (£1.0 million x 1.8). This multiplier is similar with ones given in a Scottish Homes report in 1996<sup>1</sup>, which calculated an output multiplier of 1.8864.
- 2.17 A multiplier of 1.8 is relatively high but can be explained by the strong backward and forward linkages of the house building industry with other sectors of the Scottish economy. These include
- quarrying and associated industries
  - manufacture of building products.
- 2.18 Higher multipliers have been calculated for the UK construction industry but for Scotland the multipliers must be lower. That is because of the level of “leakages” from the Scottish economy. If materials and other goods are “imported” from England (or elsewhere), the value of the multiplier will be reduced. The same applies within Scotland: the multiplier for a particular area, say Edinburgh, will be lower than that for Scotland as a whole.
- 2.19 Thus we believe it is appropriate to use an output multiplier of 1.8 for the house building industry in Scotland. On that basis, the contribution to Scottish GDP in 2006 will increase to just under £5.0 billion (ie £2.8 billion x 1.8), which is approximately 6.0% of national economic output.
- 2.20 In our 2005 report we calculated that new housing accounted for about 13% of construction output in Scotland. We see no reason to change that figure.
- 2.21 It was also estimated that repairs, maintenance and improvement (RMI) accounted for 17%, giving an overall total of about 30%.
- 2.22 A report in 2000 for Scottish Homes<sup>2</sup> suggested that new housing contributes about 20% of Scottish construction output. A report for the Housing Research Foundation<sup>3</sup> states that “if we look at the share of total new housing output to construction output (in value terms) for the UK as a whole (1980-99), the mean level of construction output borne by new private and public housing is only 16% and has a range between 10% and 24%.
- 2.23 Let us assume that in Scotland in 2006 new housing accounted for 13% of construction output and repairs, maintenance and improvement (RMI) 17% - giving a total of 30% of construction output. Using this assumption, the direct output of the house building industry would be £2,770 million for new housing and £3,660 million for RMI, with a combined total of £6,430 million. Applying the multiplier of 1.8 increases that to £11,580 million, which is approximately 14.0% of Scottish economic output (GDP).

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<sup>1</sup> K. Gibb and M. Keaghan: “Backward Linkages, Housebuilding and the Scottish Economy”, Scottish Homes Working Paper, 1996.

<sup>2</sup> A. Lavery and A. McGregor : “Employment Creation Through Public Investment in Housing : Summary of Research Evidence”, Scottish Homes, 2000.

<sup>3</sup> G. Meen and others : “The Economic Role of New Housing”, Housing Research Federation, June 2001.  
November 2007

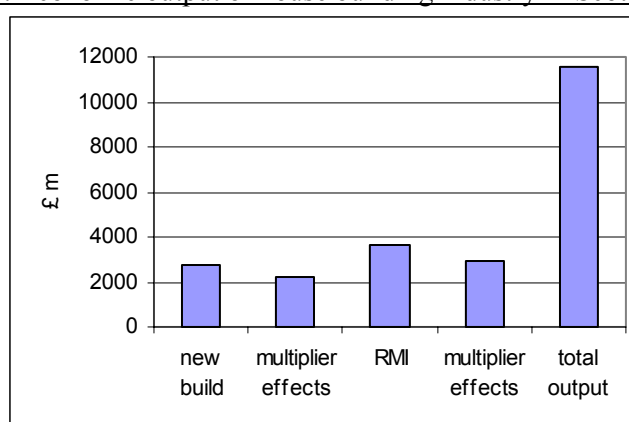
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2.24 Table 4 and Figure 4 summarise these estimates.

Table 4: Economic output of house building industry in Scotland, 2006

Category	£ million	% of Scottish GDP
New build : direct	2,770	3.4
New build : multiplier effects	2,220	2.7
<b>Total new build</b>	<b>4,990</b>	<b>6.0</b>
Repairs, maintenance and improvements : direct	3,660	4.4
Repairs, maintenance and improvements : multiplier effects	2,930	3.5
<b>Total RMI</b>	<b>6,590</b>	<b>8.0</b>
<b>Total housing</b>	<b>11,580</b>	<b>14.0</b>

Figure 4: Economic output of house building industry in Scotland, 2006

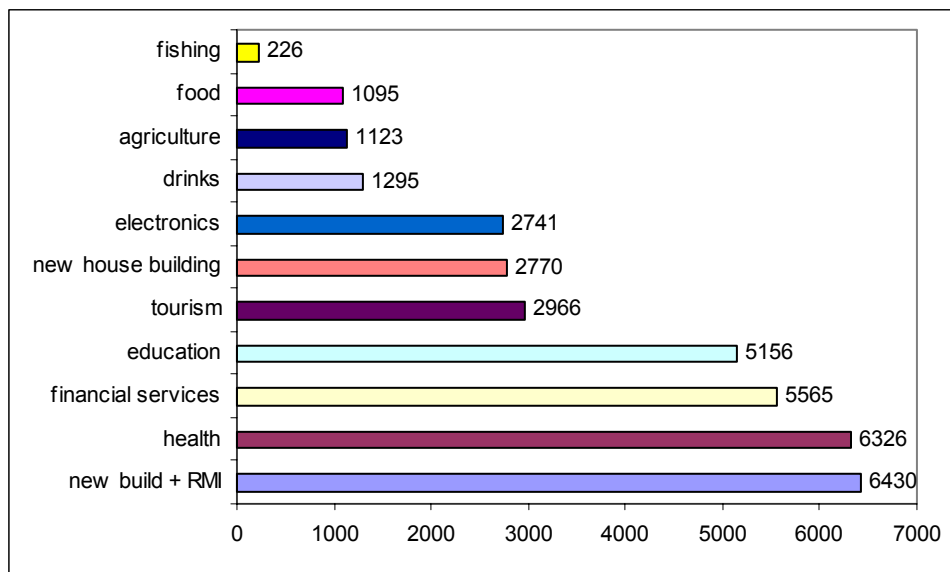


2.25 The net outputs, excluding the multiplier effects, can be compared with those of other industries in Scotland. The Scottish Government has yet to publish its detailed GDP estimates for 2006 but a report by Mackay Consultants gives a breakdown by industry<sup>4</sup>. Figure 5 on the next page gives a few examples.

<sup>4</sup> Mackay Consultants, "Prospects for the Scottish Economy, 2007-2010".  
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**Figure 5: Economic outputs of selected industries**  
(£ million, 2006 values)



- 2.26 These figures indicate that the house building industry contributes more to Scottish GDP than many other higher profile industries. If repairs, maintenance and improvements are included, the industry's GDP is greater than those of the health, education, financial services and tourism industries, for example.
- 2.27 Finally, the gross value of the housing stock in Scotland can be estimated by multiplying the number of dwellings by the average sales price in 2006, ie
- $2,407,000 \text{ dwellings} \times £188,000 = £452.5 \text{ billion.}$
- 2.28 A total of over £450 billion might appear to be an incredibly large sum but for most people their home is their single most valuable asset. Some of the recent increases in house prices are attributable to people moving investments from the stock market, for example, to the housing market.

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### 3.0 EMPLOYMENT

3.1 Another key indicator of the economic value of the house building industry is employment creation. The Scottish Government statistics show 130,000 people employed in the construction industry in Scotland in 2006<sup>5</sup>.

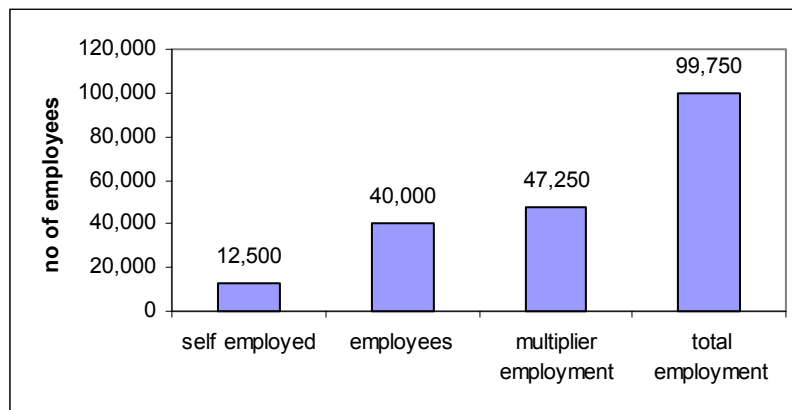
3.2 We mentioned earlier that housing accounts for approximately 30% of construction output in Scotland. That suggests that the house building industry employed about 39,000. In reality, however, that number is likely to be higher because house building is more labour intensive than many other types of construction activity. We believe therefore that 40,000 employees is a more realistic estimate.

3.3 The industry is also notable for a high level of self-employment. The Construction Industry Training Board (CITB) believes it is about 25%. If so, then the total employment in house building in Scotland will be approximately:

Self-employed	12,500
Employees	<u>40,000</u>
Total	<u>52,500</u>

3.4 The input-output tables give employment multipliers for the construction industry which are slightly higher than the output multipliers. The Type 2 multiplier – covering the direct, indirect and induced impacts – is 1.9.

3.5 On that basis the total employment created by the house building in Scotland rises to about 99,750, disaggregated as follows:



3.6 Considerable use is made of local labour and local subcontractors. That is in marked contrast to the construction industry which has a much more mobile labour force for large projects.

3.7 House building requires a wide range of skilled trades people, including joiners, electricians, plumbers, bricklayers etc. The relative stability of the industry, as indicated by the annual levels of new building, has encouraged people to make careers in the industry. It has also encouraged the development of apprenticeship schemes. In contrast, other construction activities such as oil fabrication have suffered from large fluctuations in activity levels and employment.

<sup>5</sup> Scottish Economic Statistics 2006  
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### 4.0 THE POTENTIAL FOR INCREASING THE ECONOMIC VALUE

- 4.1 The recent level of building has averaged about 24,000 new homes per year. Table 1 shows 24,581 completions in 2006, which was -1.4% lower than in the previous year.
- 4.2 It seems widely accepted that this level of building is far too low. The very large increases in prices suggest that demand has exceeded supply, particularly for “affordable” housing.
- 4.3 The Scottish Government published a report on October 31 entitled “Firm Foundations: The Future for Housing in Scotland”. One of the key conclusions is that the rate of new housing supply should be increased to at least 35,000 a year. That would be about a 50% increase on the present level.
- 4.4 The report states that “our vision for the future of housing in Scotland has four elements:
- an increased supply of housing across all tenures, all of which is delivered on the basis of higher environmental and design standards
  - more choice of housing that those on lower incomes can afford
  - housing developments that contribute to the creation of sustainable, mixed communities
  - social housing that provides better value for public expenditure”.
- 4.5 There are many reasons for the low level of house building, which need not be discussed here. The UK Government commissioned a review of housing supply by Kate Barker and others in 2004. Their report concluded that “the underlying constraint on housing is the supply of land. This is constrained by a range of factors:
- the house building industry, its response to risk and the speculative nature of land leading to a reluctance to build out large sites quickly;
  - the increasingly complex nature of sites (especially brownfield), where significant remediation may be required;
  - land ownership and the incentives to bring land forward for development along with the difficulties of site assembly, where ownership is fragmented;
  - the planning system and its influence over the amount of land which is made available and whether development is viable through the delivery of necessary infrastructure; and
  - land use is also politically contentious”.
- 4.6 Obviously an increase in the annual level of building would increase the annual value of the industry’s output, taking into account any implications for prices. It is unlikely there could be a 50% increase, particularly in the short run, but it would still give a vital boost to the economy.

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### 5.0 CONCLUSIONS

- 5.1 The house building industry is a vital part of the Scottish economy. Our calculations show that in 2006 it contributed directly about 7.8% of economic output (or gross domestic product, GDP). If the multiplier effects are taken into account that figure rises to 14.0%.
- 5.2 According to Government statistics 24,581 new dwellings were built in Scotland in 2006. With an average selling price of £188,000 the gross value of these houses was £4.6 billion.
- 5.3 The gross value has risen substantially over the last few years because of the large rises in house prices. The 2006 total is 60% higher than the 2002 total, for example.
- 5.4 In relation to Scottish economic output it is necessary to calculate the net value or value added of the new homes, by deducting from the gross value the cost of materials, other goods and labour. We estimate that the net value of new building in 2006 was approximately £2.8 billion. That is 3.4% of Scottish GDP.
- 5.5 Applying a multiplier of 1.8 to take account of the indirect effects elsewhere in the economy increases the total to just under £6.0 billion, which is 6.0% of Scottish GDP.
- 5.6 In addition, the net value of repairs, maintenance and improvements was approximately £4.4 billion. With the multiplier effects that increases to £6.6 billion, which is 8.0% of Scottish GDP.
- 5.7 The net value of new building and repairs, maintenance and improvements combined is just under £11.6 billion, which is 14.0% of Scottish GDP in 2006.
- 5.8 The house building industry's contribution to Scottish GDP is much greater than those of higher profile industries such as education, financial services and tourism. The industry also has strong backward and forward linkages with other sectors of the economy, resulting in relatively large multiplier effects.
- 5.9 The house building industry is also an important employer in Scotland. It employs about 52,500 people directly and a similar number indirectly.
- 5.10 The level of new building has risen slowly over the last few years to reach 24,600 dwellings in 2006. There is considerable evidence, however, that this is below the optimal level and that there should be a higher level in Scotland. The high level of house price inflation indicates that demand exceeds supply at the present time.
- 5.11 The Government has stated that the annual rate of building should be increased by about +50% to at least 35,000.
- 5.12 The reasons for the relatively low level of building include difficulties in obtaining planning permission, particularly for greenfield sites, and the slowness of the planning process. If these problems could be reduced, the house building industry could make an even more valuable contribution to the Scottish economy.