Australian Government
Department of Health and Ageing

Technical Paper on cost, revenue and productivity trends in residential care prepared to assist

the Productivity Commission Inquiry *Caring for Older Australians*

by the Department of Health and Ageing

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1. This paper examines recent cost and revenue growth trends in the residential care sector in unit price terms, taking into account the productivity gains made by efficient providers, to determine the relative rates of growth of costs and revenues over recent years. After a discussion of the methodology underlying the analysis, the paper examines recent trends in residential care costs and productivity in the residential care sector on the basis of which unit cost indices for the residential care sector are developed. The paper then examines recent trends in the revenues of residential care providers and the relative rates of growth of costs and revenues over recent years.

Cost indices – Data and methodology

2. The Department, in conjunction with Access Economics, has developed indices that track typical growth in residential care costs from estimates of the cost structure of delivering residential care (both levels and changes over time) and changes in costs over time for various types of goods and services (including labour costs). Separate cost indices were developed for high, low and mixed care providers[1]. The cost indices are reported on two separate bases:

a) *Pure cost indices* (labour costs, non-labour costs and total costs) – which look at the change in costs over time by holding the cost structure constant over time (2008-09 is used as the benchmark year for the cost structure). A shift in the composition of nursing staff and/or non-labour input will not therefore be reflected in the movement of these indices.

b) *Unit cost indices* (unit labour costs and unit total costs) – which take into account changes in the quantity of and composition of inputs to deliver a standard unit of output (a bed day of service for a given level of frailty). These indices aim to reflect actual cost changes that have occurred, taking into account productivity gains. These indices hold the share of clients by frailty level constant over time and show by how much costs have changed over time for typical providers if all factors – other than client mix – are allowed to change.

3. Estimates of the cost structure of the industry are derived from the annual National Residential Aged Care Survey conducted by Bentleys MRI[2]. Survey data from 1995-96 to 2008-09 are available for analysis. Estimates of the wage rates of aged care workers are obtained from the Australian Nursing Federation's quarterly *Nurses Paycheck* publication.[3]

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1 'High care providers' predominantly deliver care to high care residents – that is, more than 70 per cent of residents have an RCS classification of 1 to 4, or the equivalent under ACFI.

'Low care providers' predominantly deliver care to low care residents – that is, more than 70 per cent of residents have an RCS classification of 5 to 8, or the equivalent under ACFI.

'Mixed care providers' care for all other mixes of residents.

2 See http://www.agedcaresurvey.com.au.

3 See http://www.anf.org.au/paycheck.

Pure Labour Cost Indices

4. Labour can be divided into care and non-care staff, with the former further comprising of care managers, registered nurses, enrolled nurses, assistant nurses, activities staff, personal care attendants and therapists. Data outlining the typical number of hours per bed day by each category of staff in each type of provider in 2008-09 are shown in Table 1. The Table also outlines the hourly wage rates – the cost levels to which the weights are applied – for the different kinds of staff in the residential care sector in the June Quarter of 2009.[4]

Table 1: Staff hours per care day and hourly wage rate, low, mixed and high care, June 2009

Staff type	Hourly rate ($)	Low care (hours/day)	Mixed care (hours/day)	High care (hours/day)	All (hours/day)
DON/Care Manager	43.23	0.07	0.07	0.09	0.08
Level 2,3,4 Registered Nurse	34.17	0.03	0.12	0.22	0.18
Level 1 Registered Nurse	25.31	0.04	0.15	0.26	0.16
Enrolled Nurse	20.68	0.05	0.22	0.29	0.29
Assistant Nurse	17.39	0.18	0.50	0.68	0.68
Activities	16.52	0.11	0.09	0.12	0.13
PCA/HCA	17.39	1.01	0.93	1.37	0.83
Therapists	33.64	0.00	0.03	0.04	0.04
Non-care labour	34.00	0.95	0.91	1.01	0.90

5. Growth in the wages of care staff is as reported, while growth in the wages of non-care staff is assumed to be in line with growth in the Australian Bureau of Statistics' Labour Price Index for the economy as a whole.[5] Allowance is made in the indices for labour on-costs and growth in labour on-costs is assumed to be in line with growth in the relevant labour costs.

6. The pure labour cost indices for each of the three types of aged care provider (with a 2008-09 base year) are then derived by holding these weights in fixed proportions over time:

$$Labour\ cost\ index_{t+1} = Labour\ cost\ index_{t} \times \left\{ \begin{array}{l} \dfrac{Per-hour\ total\ care\ staff\ \ wages_{t+1}}{Per-hour\ total\ care\ staff\ \ wages_{t}} \times \dfrac{Bentley's\ total\ care\ staff\ \ wages_{2Q2009}}{Bentley's\ total\ labour\ costs_{2Q2009}} + \\ \dfrac{Per-hour\ non-care\ staff\ \ wages_{t+1}}{Per-hour\ non-care\ staff\ \ wages_{t}} \times \dfrac{Bentley's\ non-care\ staff\ \ wages_{2Q2009}}{Bentley's\ total\ labour\ costs_{2Q2009}} \end{array} \right\}$$

7. The relative contributions of care staff and non-care staff in 2009 is shown in Table 2.

[4] The wages of activities staff are assumed to be 95 per cent of those of assistant nurses. PCA wages are assumed to be the same as assistant nurses while therapists are assumed to earn the per hour equivalent of average weekly earnings in the health sector.

[5] Australian Bureau of Statistics (ABS) (2010) *Labour Price Index, Australia.* ABS cat. no. 6345.0. Canberra: ABS. Accessed on 25 June 2010 at http://www.abs.gov.au/ausstats/abs@.nsf/mf/6345.0.

Table 2: Care and non-care staff costs per bed day, June 2009

Cost item	Cost ($) per bed day		
	Low care homes	Mixed care homes	High care homes
Total care staff costs	39.23	52.19	74.20
Non-care staff costs	26.89	23.64	29.35
Total labour costs	**66.12**	**75.83**	**103.55**

Pure non-labour cost indices

8. Non-labour costs comprise all other operating costs incurred in the delivery of residential care. Table 3 shows the non-labour cost categories used in the indices and the relevant broader price index used to track movements in that particular cost item. It also shows the cost weights for each of the items in high, low and mixed care.

Table 3: Non-labour cost categories, and broader cost indices used to track cost growth

Category	Relative Index	Low care $ per day	Mixed $ per day	High care $ per day
Administration	Overall LPI	13.24	9.36	11.41
Chemist supplies	CPI - Toiletries and personal care	0.45	1.03	1.46
Cleaning contracts	CPI - Household services	0.54	1.24	1.56
Cleaning materials	CPI - Household cleaning agents	0.57	0.67	0.69
Contract trainers & contract therapists	Overall LPI	0.39	0.61	0.87
Craft & activity supplies	CPI – Recreation	0.19	0.16	0.18
Depreciation - plant & equipment	Overall CPI	2.43	3.68	3.88
Food contracts	CPI – Food	3.41	3.71	5.71
Food costs	CPI – Food	5.79	5.44	4.94
Fuel, light & power	CPI – Utilities	0.38	0.58	0.62
Incontinence aids & kylies	CPI - Toiletries and personal care	0.34	0.80	1.46
Laundry contracts	CPI - Household services	0.50	0.84	1.11
Laundry materials	CPI - Household cleaning agents	0.18	0.19	0.17
Paper products	Overall CPI	0.44	0.40	0.37
Repairs and Maintenance	CPI - House repairs and maintenance	3.10	4.01	4.10
Rates & taxes	Overall CPI	1.09	1.10	1.17
Replacements	Overall CPI	0.22	0.47	0.40
Telephone, postage & stationery	CPI – Communication	0.88	1.02	1.24
Travel, entertainment & vehicles	CPI – Recreation	0.18	0.40	0.48
Unit dose medication packaging system	CPI - Toiletries and personal care	0.16	0.15	0.11
Unallocated items	Overall CPI	1.28	0.52	0.52

9. The pure non-labour cost indices for each of the three types of aged care provider (with a 2008-09 base year and separate weights for low care, mixed care and high care)) are then derived by holding these weights in fixed proportions over time:

$$Non-labour\ cost\ index_t = \frac{\sum_{j=1}^{21} Per-hour\ cost\ of\ item_{j,t} \times Bentley's\ total\ cost\ of\ item_{j,2Q2009}}{\sum_{j=1}^{21} Bentley's\ total\ cost\ of\ item_{j,2Q2009}}$$

Unit cost indices

10. Unit cost indices (how much costs have actually changed to deliver a standard output given changes in cost structures, development of greater efficiencies etc.) also need to take account of quantity and quality differences in labour.

11. Aged care providers use a mix of nursing staff that bring with them not only different levels of qualification but also experience. These differences are assumed to be reflected in the compensation paid, with higher per hour wages indicating higher quality. To capture this effect, 'quality weights' (the first term of the nominator below), which are essentially the ratio of per hour wages of the nursing staff category to the per hour wages of a level 1 registered nurse, were developed. Quality weights for total care staff are thus equal to:

$$QW\ total\ care\ staff_t = \frac{\sum_{j=1}^{8} \frac{Per-hour\ care\ staff_{j,t}\ wages}{Per-hour\ level\ 1\ registered\ nurse's\ wages_t} \times hours\ per\ bed-day\ spent\ by\ care\ staff_{j,t}}{\sum_{j=1}^{8} hours\ per\ bed-day\ spent\ by\ care\ staff_{j,t}}$$

12. Quality weights for non-care staff follow the broader economy's labour price index:

$$QW\ non-care\ staff_{t+1} = Per-hour\ non-care\ staff\ \ wage_t \times \frac{Labour\ Price\ Index_{t+1}}{Labour\ Price\ Index_t}$$

13. Total labour quality weights are a weighted average between the quality weight of care staff and of non-care staff:

$$QW\ total\ labour_t = \frac{\left(QW\ total\ care\ staff_t \times \sum_{j=1}^{8} hours\ per\ bed-day\ spent\ by\ care\ staff_{j,t}\right) + \left(QW\ non-care\ staff_t \times hours\ per\ bed-day\ spent\ by\ non-care\ staff_t\right)}{\sum_{j=1}^{8} hours\ per\ bed-day\ spent\ by\ care\ staff_{j,t} + hours\ per\ bed-day\ spent\ by\ non-care\ staff}$$

14. The quality weights obtained as above are then multiplied by their respective quantity, i.e. hours per bed day to get indices for quality weighted labour costs as shown below for care staff and non-care staff:

$$Quality\ Weighted\ total\ care\ staff_t = QW\ total\ care\ staff_t \times \sum_{j=1}^{8} hours\ per\ bed-day\ spent\ by\ care\ staff_{j,t}$$

$$Quality\ Weighted\ non-care\ staff_t = QW\ non-care\ staff_t \times hours\ per\ bed-day\ spent\ by\ non-care\ staf$$

$$Quality\ Weighted\ total\ labour_t = QW\ total\ labour_t \times \left(\sum_{j=1}^{8} hours\ per\ bed-day\ spent\ by\ care\ staff_{j,t} + hours\ per\ bed-day\ spent\ by\ non-care\ staff_t \right)$$

15. A broad measure of unit labour cost can then be derived as follows:

$$Unit\ labour\ cost_t = \frac{Total\ labour\ costs_t}{Quality\ Weighted\ total\ labour_t}$$

16. The above broad measure of unit labour costs does not give a complete picture since movement in these indices can be caused by movement in per-hour wage rates and/or movement in the quantity of labour used, where the latter is affected by productivity. Unit labour costs that are client frailty adjusted better explain cost movements by discounting total labour costs by productivity gains.

17. An estimate of labour productivity growth can be obtained from examining the quantity of labour required to deliver a given output – a bed day of service for a standard client mix. The RCS status shares are effectively the average percentage of clients by frailty level (RCS or ACFI equivalent level) in a low care, mixed care or high care aged care provider. A frailty mix index is derived over time, with June 2009 a base period for this index:

$$Frailty\ Mix\ Index_t = \frac{\sum_{k=1}^{8} \left(Frailty\ shares_{k,t} \times Frailty\ subsidy_{k,t} \right)}{\sum_{k=1}^{8} \left(Frailty\ shares_{k,4Q2009} \times Frailty\ subsidy_{k,4Q2009} \right)} \times 100$$

18. A frailty adjusted labour index can then be calculated:

$$Frailty\ adjusted\ labour_t = Quality\ Weighted\ total\ labour_t \times \frac{Frailty\ Mix\ Index_t}{Frailty\ Mix\ Index_{4Q2009}}$$

19. Dividing total labour costs by the frailty adjusted labour index gives us a measure of unit labour cost per resident (with constant client frailty):

$$Unit\ labour\ cost_t = \frac{Bentley's\ total\ labour\ costs_t}{Frailty\ adjusted\ labour_t}$$

20. These Unit Labour Cost Indices aim to reflect actual cost changes that have occurred, taking into account productivity improvements. They show by how much costs have changed over time if all factors - other than client mix – are allowed to change.

Revenue indices – data and methodology

21. The Department, in conjunction with Access Economics, has also developed indices that track typical growth in residential care revenues, in line with the methodology underlying the cost indices developed above. These indices have been designed and calculated to monitor changes in revenues over time in the residential care industry. The revenue indices reflect weighted averages over time of all revenues earned by residential care providers that are directly relevant to the provision of aged care services. Revenues that do not directly relate to providing aged care (such as renting out for some other purpose property owned by the provider) are not included in the indices.

22. The revenue indices are derived from two broad sets of information: revenue levels over time for government subsidies and resident fees and relative contributions over time of different revenue streams in the delivery of high care and low care services. The bulk of data on revenue levels is obtained from Departmental data sources. Some data has also been sourced from the Bentleys MRI Survey.

23. The indices are presented in nominal terms; that is, they include growth due to inflation. Separate revenue indices are reported for aged care providers that predominantly deliver high and low care services and for providers that deliver a mix of high and low care services. The separate high, mixed and low care revenue indices use different weights to combine the same information on revenue levels. The weights are largely derived from the Bentleys survey and so reflect the characteristics of the providers in that survey. For each of level of care, revenue indices are also reported on three bases.

a) *Total revenue indices* measure by how much actual revenues available to a typical provider have changed over time. Changes in these indices therefore reflect not only changes in revenue levels for particular services, but also changes in the resident mix over time. For example, if the residents of an aged care home were on average frailer than a year ago, then other things being equal the aged care provider's revenues would have risen, and that rise would be reflected in the total revenue indices. This reflects movement in the bottom line revenue result for the aged care provider

b) *Constant frailty revenue indices* look at changes in revenues over time, assuming that the average frailty of residents is unchanged. These indices reflect systemic changes to revenue only, rather than reflecting a change in the resident frailty mix. They show by how much revenues would have changed over time for typical providers if there had been no change in their frailty mix. Constant frailty indices remove any bias resulting from the changing frailty of residents removed. The average resident mix is held constant based on the situation as at June 2009. That means that the constant frailty revenue index level for June 2009 is the same as the total revenue index level. However, with different weights applying to the client mix before and after that time, changes in revenues back to 1998 are different between the indices.

c) *All constant revenue indices* look at changes in revenues where both the resident frailty mix and the revenue structure of aged care providers are held constant. The

indices hold weights constant for the frailty of residents (as in the constant frailty index), and also hold weights constant for all other revenue sources at the June 2009 level. The all constant revenue indices are akin to a pure price measure, with all changes in volumes removed from the analysis. In these indices, all revenue categories retain the share of revenues they had in June 2009.

Revenue components

24. This section discusses the revenue items for aged care homes which are used in developing the various revenue indices. Data on revenue levels as used for the May 2010 report is highlighted in a series of tables. The bulk of data on revenue levels is obtained from the Department. Some data has also been sourced from the Bentleys MRI Survey.

25. Aged care homes receive basic care subsidies from the Commonwealth in respect of a resident according to the resident's frailty. They are also paid a variety of supplements in respect of residents who meet the appropriate eligibility criteria. The average levels of these subsidies and supplements per high and low care resident are estimated from the data in the Department's payment system.

26. Three subsidy reductions are also included in the revenue indices:

a) The extra service reduction applies if a resident receives care on an extra service basis. The reduction is equal to 25 per cent of the extra service fee paid by the resident. Providers can recover this reduction from the resident. The average extra service reduction (per eligible resident) in 2008-09 was $7.75 per day. An extra service reduction was applied to 6.5 per cent of residents.

b) The income tested reduction and is equal to 41.67 per cent of the resident's total income above the maximum income for a full pensioner. The amount cannot be greater than the amount of subsidy that would be otherwise payable in respect of the resident and cannot be greater than $59.38 per day (as at June 2009). The average income tested reduction (per eligible resident) in 2008-09 was $11.82 per day. An income tested reduction was applied to 34.9 per cent of residents.

c) The adjusted subsidy reduction applies to residents who are residents in an aged care home that has been determined to be an adjusted subsidy aged care home. The reduction is in recognition of an ongoing State Government responsibility for the capital upgrading and maintenance of nursing home buildings. The adjusted subsidy reduction (per eligible resident) in 2008-09 was $10.96 per day. The adjusted subsidy reduction was applied to 4.6 per cent of residents.

27. While the majority of funding to cover the costs of delivering residential care services comes from the Commonwealth, care recipients also make a contribution in the form of a basic daily fee, an accommodation payment, and in some cases an income tested fee and/or an extra service fee.

a) The *basic daily fee* covers living expenses such as meals, laundry, heating and cooling. At June 2009, the maximum daily fee was $33.41 for new residents. Maximum fees are used in the revenue indices as a measure of revenue capacity.

b) Residents with sufficient assets may be also asked to pay an *accommodation charge* or an *accommodation bond.*

- Information on the average income per resident derived by aged care homes from accommodation charges is estimated from the Department's annual survey of aged care payments and building activity and from the Bentleys MRI survey. In the June quarter of 2009, the average income per resident was $0.21 in low care homes and $3.63 in high care homes. Note, these are averages across all residents not just across resident who pay an accommodation charge.

- Information on the average income per resident derived by aged care homes from accommodation bonds is again estimated from the Department's annual survey of aged care payments and building activity and from the Bentleys MRI survey. This income includes interest earned on accommodation bonds and retention amount deducted from the accommodation bonds. In the June quarter of 2009, the average income per resident was $9.31 in low care homes and $5.80 in high care homes. Note, these are averages across all residents not just across resident who pay an accommodation bond.

c) An *income tested fee* may also be charged. The revenue indices assume that the average income tested fee charged to residents is equal to the average amount of income tested reduction that a resident qualifies for. Again this is appropriate as the revenue indices are a measure of revenue capacity.

d) Extra service clients pay an additional *extra service fee*, with maximum fees approved on a case by case basis. The Commonwealth's residential care subsidy to the provider is then reduced by 25 per cent of the daily extra service fee for that place (the extra services reduction amount). Providers can recover this reduction from residents on top of the extra service fee. The fee in 2008-09 was $39.30.

Revenue component weights

28. Historic frailty weights are derived from the Bentleys MRI survey and Departmental data and are effectively the average percentage of clients by frailty level in a high care or low care aged care home. The product of the subsidy amount and the weight gives a total Figure which indicates the average subsidy amount paid per client to an aged care home according to the client's frailty level. Historic weights are also derived from the Bentleys MRI survey and Departmental data for supplements and subsidy reductions, and for resident fees.

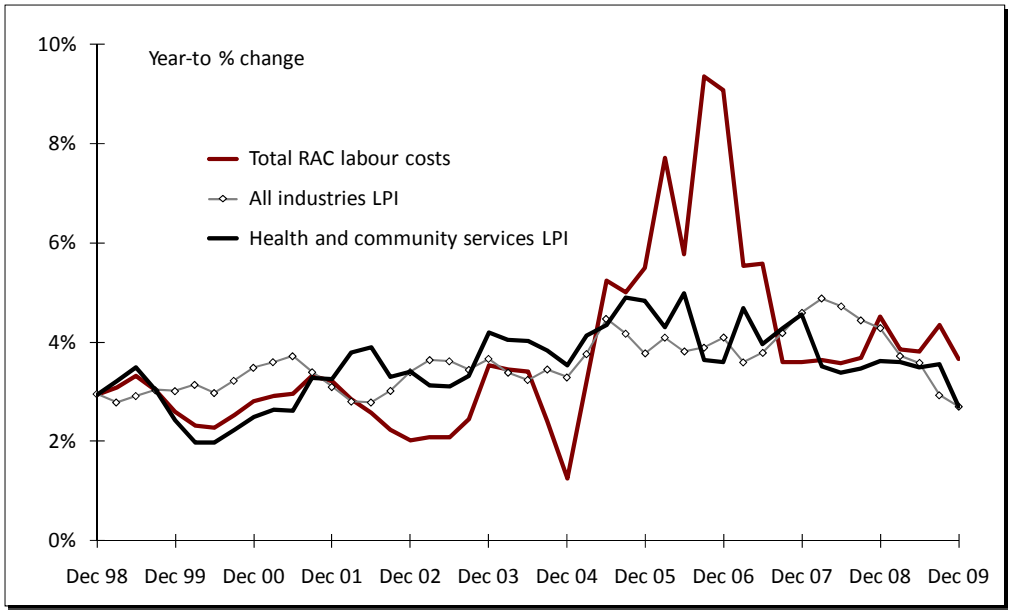
29. The constant frailty revenue indices differ by using the weights for RCS status (client frailty) from the June 2009 period for all time periods. The all constant revenue indices differ with all weights used in calculating the indices over time set at their June 2009 values. Most of the information on weights used to create the indices comes from the Bentleys MRI survey.

Trends in residential care costs

Labour costs

30. Labour costs including on-costs comprise the dominant component of delivering residential care services. Movements in wages, particularly for care staff, are therefore the dominant factor in cost growth for the overall sector. Figure 1 compares growth in the residential care (total sector) labour cost index with growth in broader measures of labour costs. This shows changes in labour costs over time for residential care based on a constant cost structure for the sector (reflecting the structure of costs in 2008-09).

Figure 1: Growth in residential care labour cost index vs. benchmark



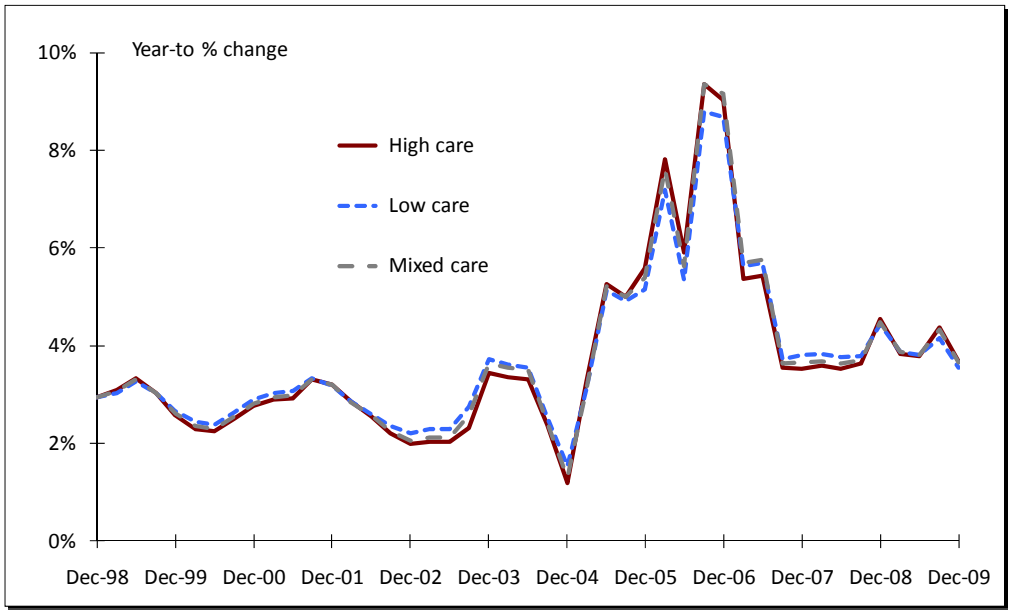
31. Figure 1 shows that labour cost growth in residential care spiked in 2005-06. This was driven by strong growth in nursing wages, reflecting strong demand pressures and partly as a catch-up on earlier more moderate wage growth. Over 2007 and 2008 labour cost growth in residential care was more in line with broader economy wage pressure. In 2009, residential care labour cost growth was again stronger than the broader measures. Rather than being driven by a surge in nursing wage growth, the key reason this time is that residential care has been less affected by the broader wage moderation that resulted from the global financial crisis (GFC). Job losses and potential job losses stemming from the GFC saw wage growth moderate in many sectors, but residential care was less affected.

32. Over the year to December 2009 residential care labour cost growth was 3.7 per cent, compared with 2.7 per cent for both the all sectors LPI and the health and community services LPI.

33. Figure 2 shows labour cost growth trends by sector within residential care with a very similar profile across high care, low care and mixed care. While the workforce structure does differ by sector (high care providers have a higher share of care staff in their labour mix, and a

higher share of registered nurses within care staff) wage growth trends have still been very similar. Over the year to December 2009 labour cost growth was 3.6 per crnt for low care providers and 3.7 per cent for both mixed care and high care providers.

Figure 2: Growth in residential care labour cost indices by sector



Non-labour costs

34. As is the case with labour costs, growth in residential care non-labour costs over the past year have been well above the broader benchmark. Figure 3 shows growth in the non-labour cost index for residential care, with cost growth moving substantially faster than the CPI through 2009. Over the year to December 2009 residential care non-labour cost growth was 3.4 per cent, compared with 2.1 per cent growth for the headline CPI (though we note that CPI growth over the year to March 2010 has moved up to 2.9 per cent). The headline CPI was weaker through the course of 2009 as an effect from the GFC, with lower petrol prices the price of tradeable goods and series kept in check by weaker global demand and a rising $Aus.

35. The main contribution to the increase in non-labour cost growth over the year to December 2009 by far was the lift in the price of utilities (up 13.8 per cent). Other strong price growth was seen from repairs and maintenance (up 4.1 per cent) and household services (up 3.8 per cent). The sector saw relatively little benefit from those items which were driving the CPI down. These include financial and insurance services where prices fell by 6.3 per cent over the year to December 2009 and fuel costs which were down 3.8 per cent over the year (the latter not helpful for residential care but it would benefit community care). Often growth in the CPI is a reasonably proxy for growth in residential care non-labour costs – this is not the case over the past year.

36. By sector, over the year to December 2009 non-labour costs have increased by 3.5 per cent for mixed care homes, 3.3 per cent for high care homes and 2.6 per cent for low care homes (see Figure 4).

Figure 3: Growth in residential care non-labour cost index vs. benchmark

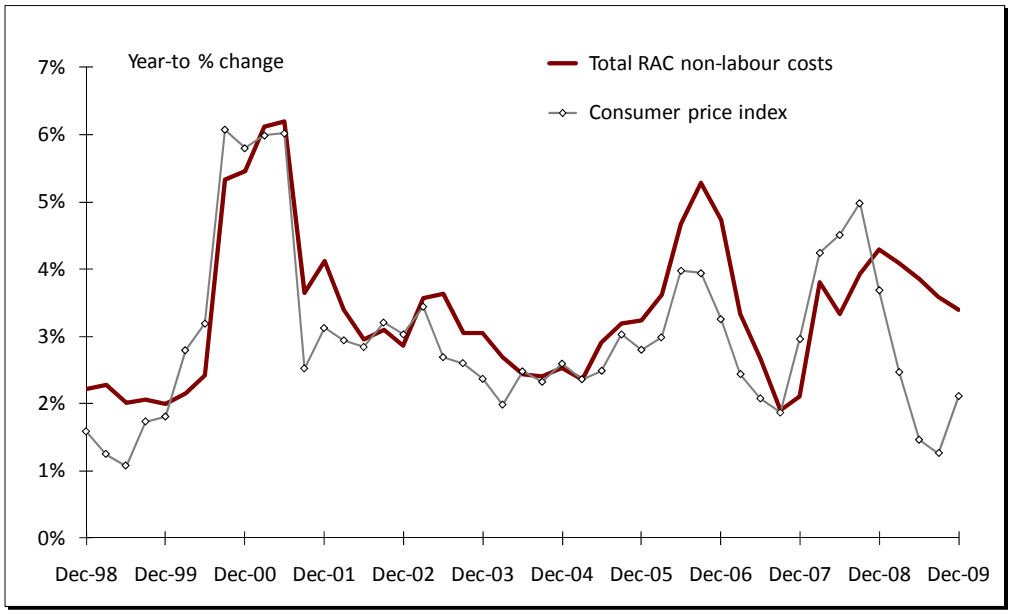
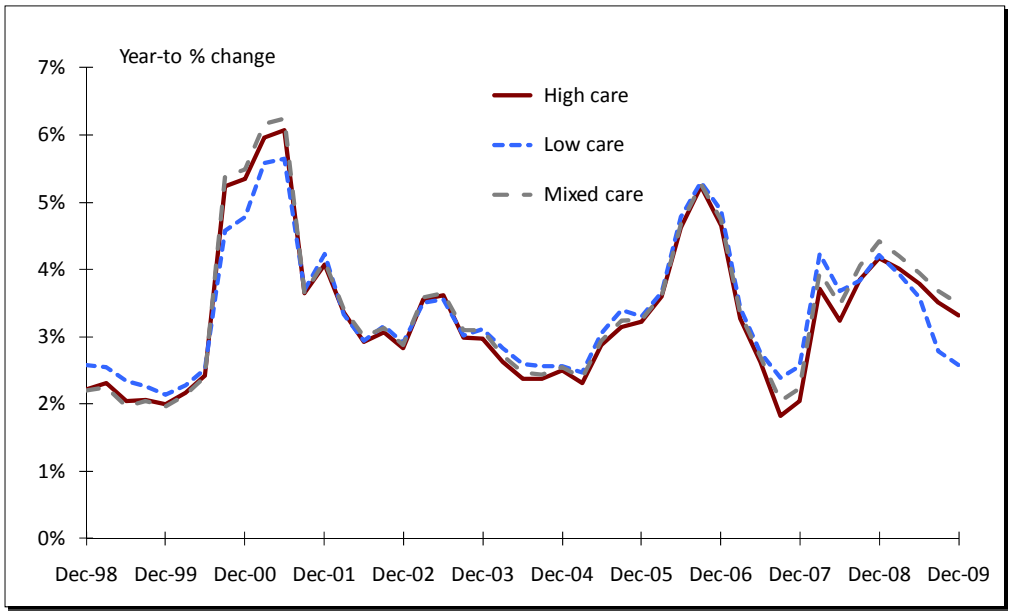


Figure 4: Growth in residential care non-labour cost indices by sector

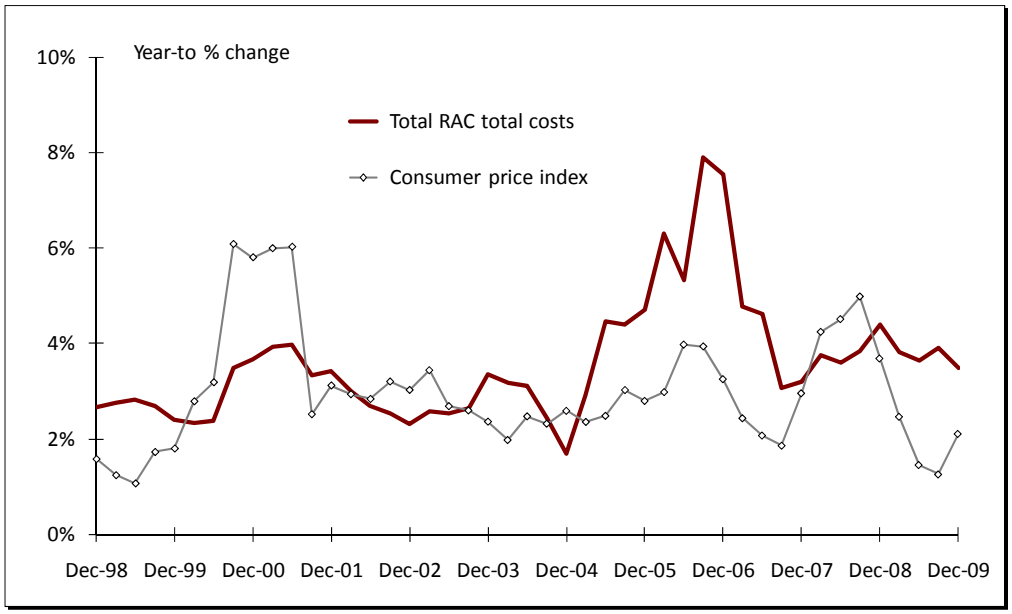


37. The slower growth for low care homes reflects food costs and general administration costs being a higher share of non-labour costs for low care providers. Normally this bias pushes up costs for low care providers relative to mixed and high care but over the past year it has worked in the favour of low care providers.

Total costs

38. Figure 5 combines labour and non-labour costs to show growth in the total costs faced by residential care providers.

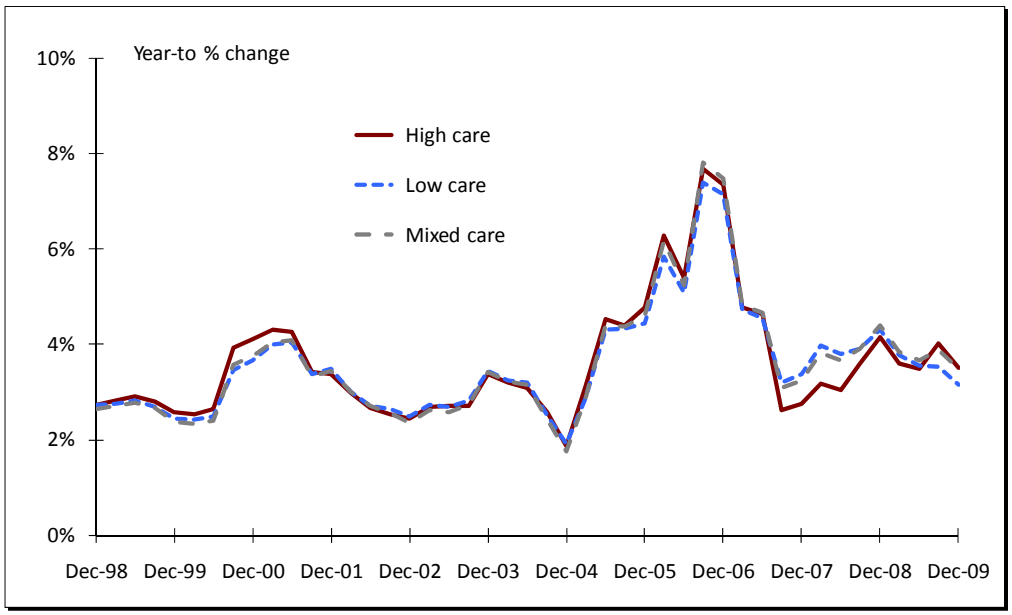
Figure 5: Growth in residential care total cost index vs. benchmark



39. Through the course of 2009 cost growth in residential care has moderated but not to the extent seen in the broader CPI or LPI measures. As one might expect, the deflationary pressures of firstly, slower global demand, and secondly, a rebound in the $Aus pushing down the price of imported goods, have had a relatively limited effect on the residential care sector. Over the year to December 2009 residential care total cost growth was 3.5 per cent, compared with 2.1 per cent growth for the headline CPI.

40. By sector, over the year to December 2009 total costs have increased by 3.5 per cent for mixed care and high care homes, and 3.2 per cent for low care homes (reflecting more moderate growth in non-labour costs for the latter) (see Figure 6).

Figure 6: Growth in residential care total cost indices by sector



Productivity

41. The labour cost indices discussed above are based on the prices of the types of labour used, and the shares of those types of labour in total labour costs. They are a price measure rather than a measure which shows the total change in cost of labour to deliver a particular output (where the latter is affected by both price and quantity and, in turn, quantity is affected by productivity).

42. Productivity growth estimates for residential care are available over the past decade and up to June 2009 (based on the annual Bentleys benchmarking surveys, of which the latest available is for 2008-09). They are shown in Figure 7. Estimated productivity growth has something of a saw-tooth pattern over time. The year by year estimates may reflect some sampling error – the Bentleys survey does not necessarily pick up the same providers of services every year, and so average productivity practices over time may change due to the sample who responded to the particular survey.

43. The data for 2008-09 show that estimated labour productivity fell by 0.8 per cent in the year. This follows a strong increase in estimated labour productivity, of 4.3 per cent in 2007-08. Taken together the two years imply a productivity improvement of 3.5 per cent over the two years. That is, the sector was delivering 3.5 per cent more outputs for the same amount of labour input compared with two years earlier.

44. To better understand what contributes to an increase or a fall in labour productivity growth we have decomposed labour productivity growth into two components - the growth in the input used (labour) and the growth in the output produced (average frailty based on RCS level or the equivalent under ACFI) (see Figure 8).

Figure 7: Labour productivity growth in residential care

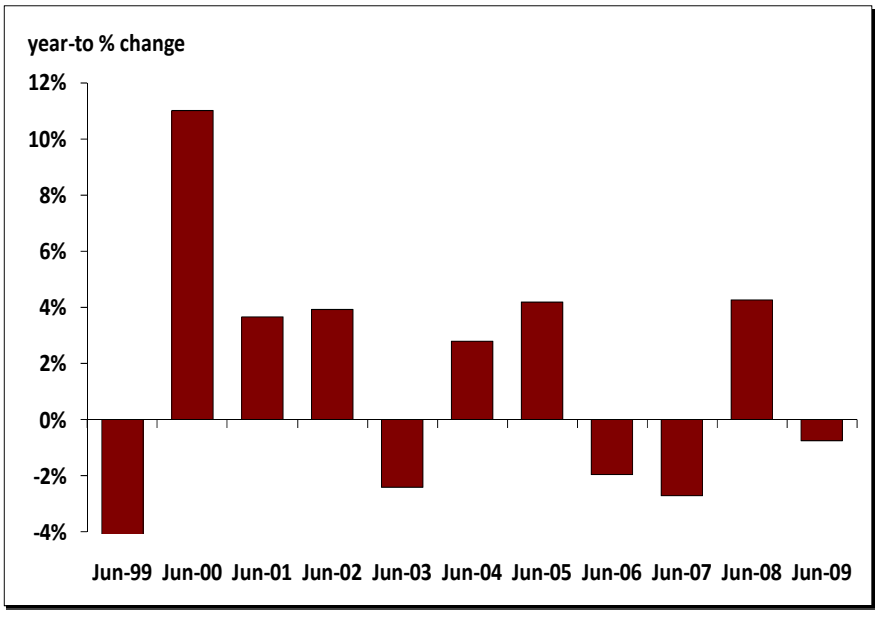
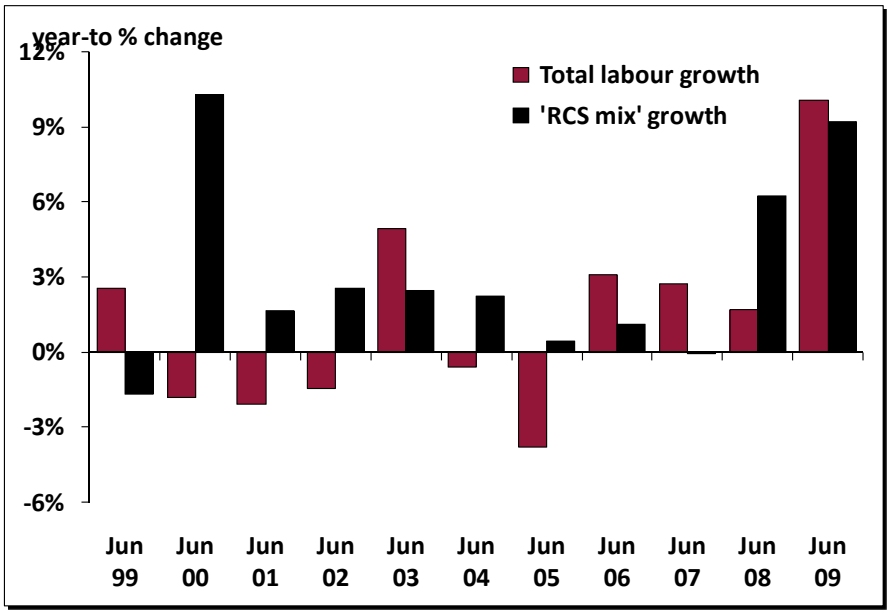


Figure 8: Labour productivity growth in residential care – Input/output growth



45. For 2008-09 the total quantity of labour used per bed day rose significantly in 2008-09, by some 10.1 per cent6, with much of that reflecting an increase in the average frailty level of clients – the latter rising by 9.2 per cent. The gap between the two represents a fall in average labour productivity in 2008-09.

46. The increase in hours per bed day was seen particularly in personal care attendants, which one would expect in line with the increased average frailty of clients over time. However, the Bentleys data shows there was also a significant increase in hours for non-care support staff in 2008-09 which is less obviously related to increased client frailty. The latter may be an area where future productivity improvements can be made.

47. Averaged over the six years to June 2009, labour productivity in residential care has risen by 1.0 per cent per annum. This labour productivity estimate (average growth of 1.0 per cent per annum over the six years to June 2009) can be compared with labour productivity growth in other sectors. The ABS Annual National Accounts provides measures of gross value added per hour worked by broad industry sector. It shows that over the equivalent time period labour productivity growth:

a) across all industries averaged 1.0 per cent per annum; and

b) in the health and community services sector averaged just 0.4 per cent per annum.

48. That suggests labour productivity growth in residential care has been in line with the all industry average in Australia across the time period from 2003 to 2009, and well above some other elements of health and community services.

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[6] The growth in labour input used is weighted by the type of labour used. For example, if a bed day of output was delivered with two hours of a registered nurses' time, but that is now delivered by one hour from a registered nurse and one hour from a personal care attendant that amounts to a reduction in labour input used (as the personal care attendant costs less than the registered nurse) and, other things equal, an improvement in labour productivity.

49. Labour productivity estimates in residential care can also be derived from other sources. Notably the two aged care workforce censuses from 2003 and 2007 suggest there has been even stronger productivity growth in residential care. The 2007 workforce census reported 78,849 direct care workers in residential care in 2007, only marginally up on the 76,006 reported in 2003. Yet over that time there has also been a notable decline in nurses employed offset by a rise in personal care attendants (less costly labour). There has also been significant growth in the number of clients serviced and the average frailty of those clients, suggesting strong productivity growth across the sector. For this submission the Bentleys data is the preferred source for deriving a labour productivity estimate. It allows consistency with the broader cost structure data used, it allows year by year estimates to be produced and is available up to 2008-09 (more recent than the aged care workforce census).[7]

50. While there was continuing scope within the industry for further productivity gains, the rate of these changes could be expected to slow in the future as the principal driver of these changes, the substitution of skilled personal care workers for nurses, would at some time be less available to providers without impact on the quality of care.

Unit labour costs

51. Unit labour costs are a useful indicator of the implications of productivity growth. The unit labour cost index presented here shows the change in labour costs incurred per bed day with constant frailty (a benchmark quantity of service).

52. Figure 9 and Figure 10 net off the labour productivity growth estimates from the labour cost and total cost indices presented earlier to show estimates of unit labour cost indices for residential care. It is a kind of mirror image of the productivity growth estimates in Figure 7. The estimated decline in labour productivity in 2008-09 means that unit labour cost growth in 2008-09 (4.6 per cent) was higher than labour cost growth (3.8 per cent).

53. Over 2008-09 the residential care total unit cost index, which takes into account labour productivity gains in the residential care sector, rose by 4.4 per cent. This is well above the broader benchmark of CPI growth to June 2009 of 1.5 per cent.

54. Averaged over the past six years (from 2003 to 2009), the residential care total unit cost index grew on average by 3.5 per cent per annum. That compares with CPI growth over the same time averaging 2.8 per cent, suggesting cost growth in residential care (after allowing for productivity growth) has been a little above price growth in the whole economy.

[7] It is notable that the Review of Pricing Arrangements in Residential Aged Care found that, over the seven years (to 2001-02), low care services achieved, on average, total factor productivity growth of around 2.0 per cent each year. In other words, output growth was about 2.0 per cent above the growth in inputs during those seven years. It further found that total factor productivity growth in the financial years 1999–2000, 2000–01 and 2001–02 was 8.0 per cent, 6.0 per cent and 7.0 per cent respectively.

Figure 9: Growth in residential care indices – Labour costs

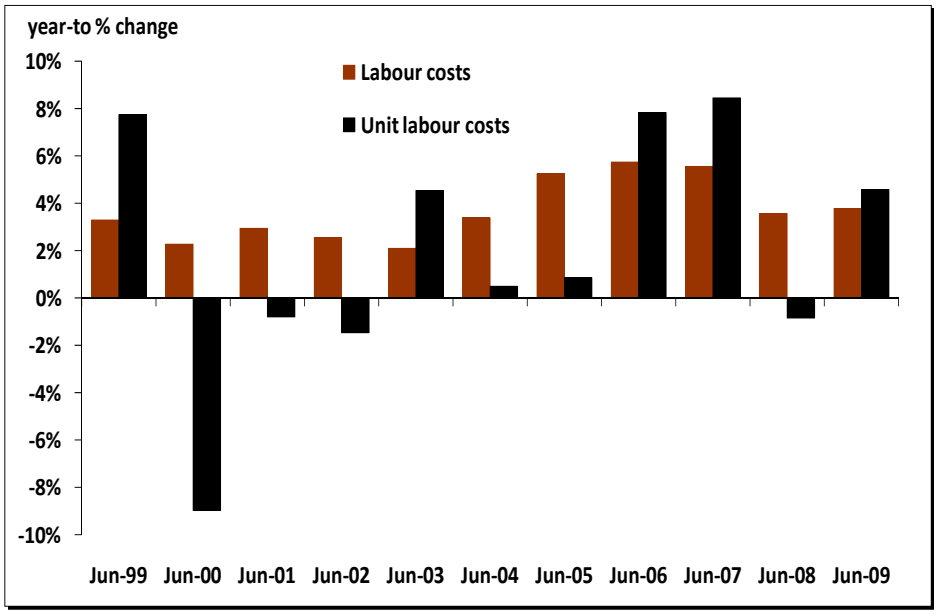
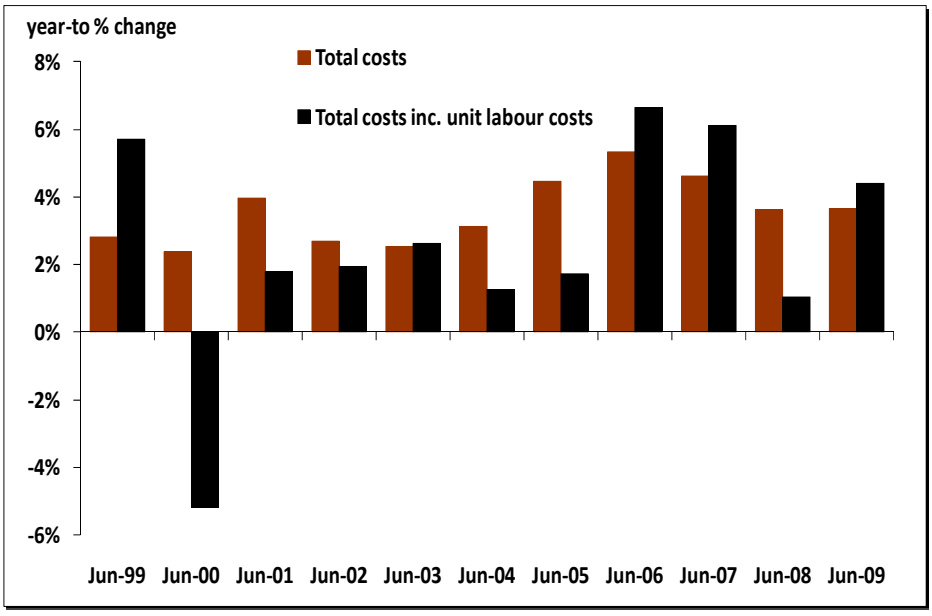


Figure 10: Growth in residential care indices – Total costs



Trends in residential care revenues

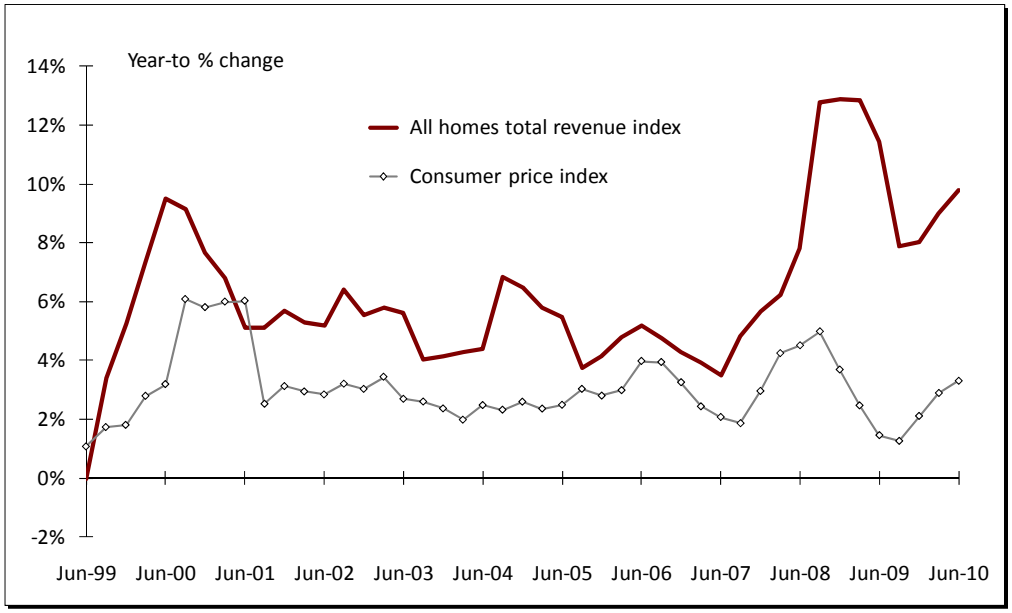
55. Figure 11 shows growth in the total revenue index for all homes (the sum of high care, low care and mixed care homes). This reflects growth in total revenues per bed day over time with that rate of growth always above the rate of CPI growth and recently substantially so.

56. Over the year to June 2009 total revenues across all homes rose by a very strong 11.5 per cent. Within that, government payments rose by 13.3 per cent, while contributions from residents (in the form of fees, charges or bonds) rose by 7.6 per cent. A further 9.8 per cent revenue growth is projected to be achieved for the year to June 2010, with government payments projected to rise by 8.5 per cent and resident payments projected to rise by 12.6 per cent This forms a very substantial increase in funding for residential care over two years.

57. Growth in residential care revenues per bed day has remained comfortably above CPI growth over time. Over the six years to June 2009 (the same longer term time period as examined in the previous chapter), revenues have risen by an average 6.3 per cent per annum compared with CPI growth averaging 2.8 per cent per annum over the same period. Note that part of this stronger revenue growth is compensation for a significant upward shift in the average frailty of residents over time.

58. A further major element of the strong revenue growth of late relates to the introduction of the new ACFI classification. Progressively from the June quarter of 2008 the new ACFI classification was introduced which had an upward bias to subsidy rates and therefore to total revenues (residents transferring from RCS to ACFI were protected in that their subsidy could rise but it wasn't allowed to fall). For equivalent frailty clients the new ACFI subsidy rates were also more generous on average than the previous RCS subsidy rates.

Figure 11: Growth in all homes total revenue index vs benchmark



59. In terms of splitting aged care homes into those delivering mainly high, mainly low or mixed care services the transition to ACFI did create a compositional issue:

a) up to June 2008 we can use the Bentleys data (based on an RCS classification) to classify homes into high, low and mixed categories;

b) from September 2008 we use ACFI payments data to classify residents into either RCS or ACFI categories (with ACFI becoming dominant over time); and

c) those ACFI payment rates are then translated back to an RCS equivalent with a new split of high/low/mixed developed. However, the ACFI based split has a much higher proportion of residents classified as high care, and therefore has a much higher proportion of homes delivering mainly high care services.

Adjusting for changes in resident 'frailty'

60. Figure 12 shows the aged care revenue indices on a 'constant frailty' basis. The 'constant frailty' indices hold the client mix constant at its June 2009 levels (using the Bentleys classification of resident frailty at that point in time as the benchmark). Therefore this index reflects the growth in revenues that would have occurred for typical providers if the client mix were constant over the period – akin to a pure price measure.[8]

61. Over the year to June 2009 revenue growth on a constant frailty basis was a very strong 6.2 per cent for all homes. Within that, government payments rose by 5.6 per cent, while contributions from residents (in the form of fees, charges or bonds) rose by 7.6 per cent. A further 6.7 per cent revenue growth on a constant frailty basis is projected to be achieved for the year to June 2010, with government payments projected to rise by 4.0 per cent and resident payments projected to rise by 12.6 per cent. These rates are well above CPI growth.

62. Over the six years to June 2009, revenues on a constant frailty basis have risen by an average 4.3 per cent per annum compared with CPI growth averaging 2.8 per cent per annum over the same period.

63. Figure 13 splits the sector by type of home. Over the year to June 2009, revenue growth on a constant frailty basis rose by 7.6 per cent for mixed care homes, 6.1 per cent for high care homes and 3.2 per cent for low care homes.

[8] A complication for the constant frailty analysis for periods after March 2008 is the change in client classification from RCS to ACFI. An element of the initial subsidy rates under ACFI was to provide higher compensation on average than under the RCS scheme. This component of revenue growth should be shown within the constant frailty revenue indices (as it is unrelated to frailty). Therefore we make an adjustment to the constant frailty indices to include that component of the transfer from RCS subsidies to ACFI subsidies which is unrelated to changes in assessed frailty. Access Economics has produced an estimate of this higher compensation in a separate report for the Department (*The impact of ACFI on subsidy levels in Residential Aged Care*). That report examines where average subsidy payments are likely to have been if the RCS classification had continued, and compares that level with the average subsidy received under ACFI. The report concludes that overall, ACFI funding is 2.6 per cent higher than the comparison average RCS funding. Accordingly, a 2.6 per cent adjustment is made to the constant frailty rates from June 2008 to June 2009.

Figure 12: Growth in all homes 'constant frailty' revenue index vs benchmark

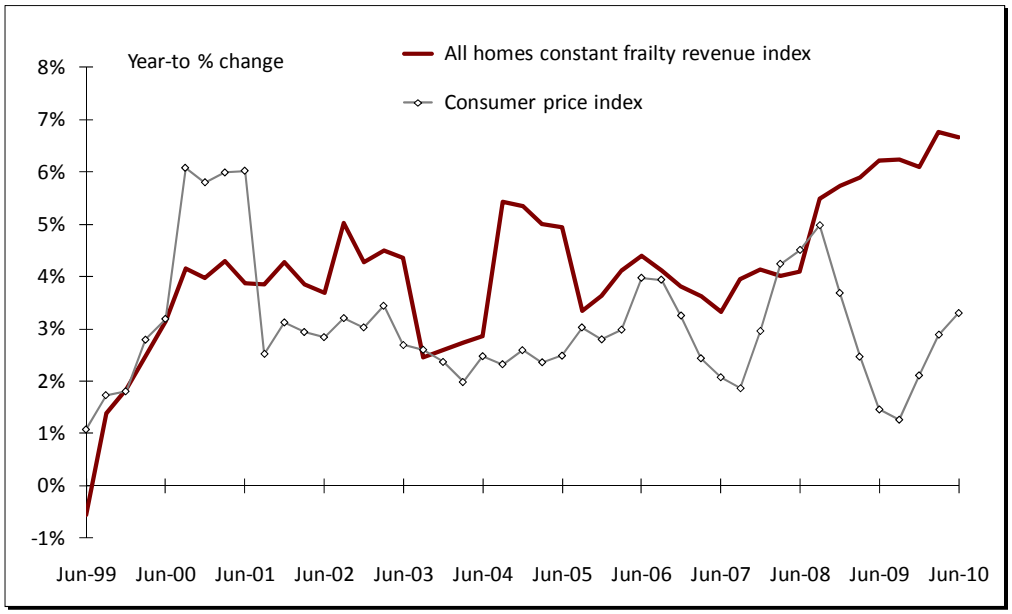
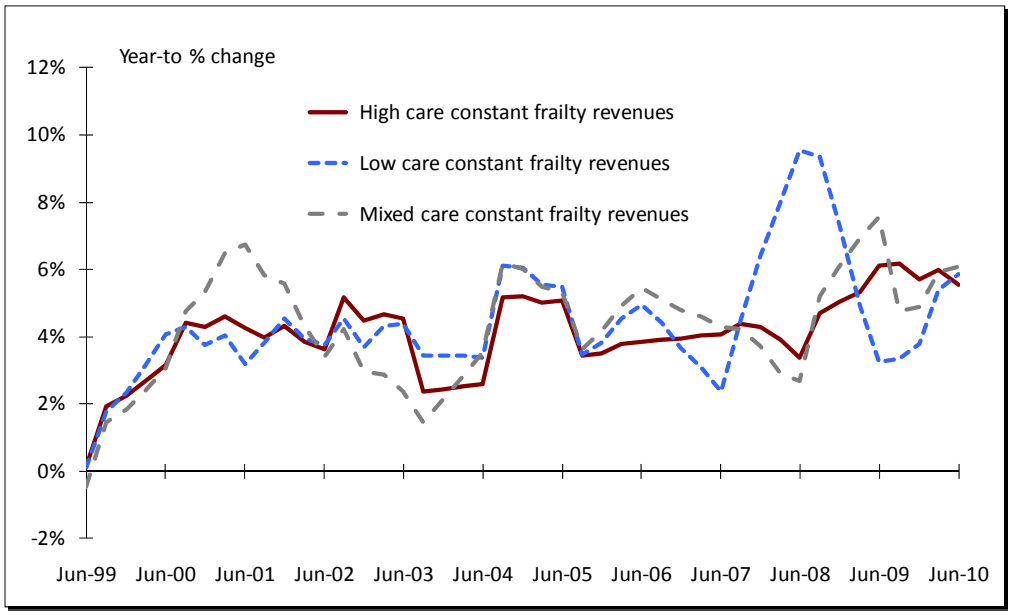


Figure 13: Growth in 'constant frailty' revenue indices by sector



64. Overall the growth in revenues for all homes over the year to June 2009 was lower on a constant frailty basis (growth of 6.2 per cent), than on a total revenue basis (growth of 11.5 per cent), suggesting notable additional revenue growth coming from the reclassification of residents as they have transferred to ACFI.

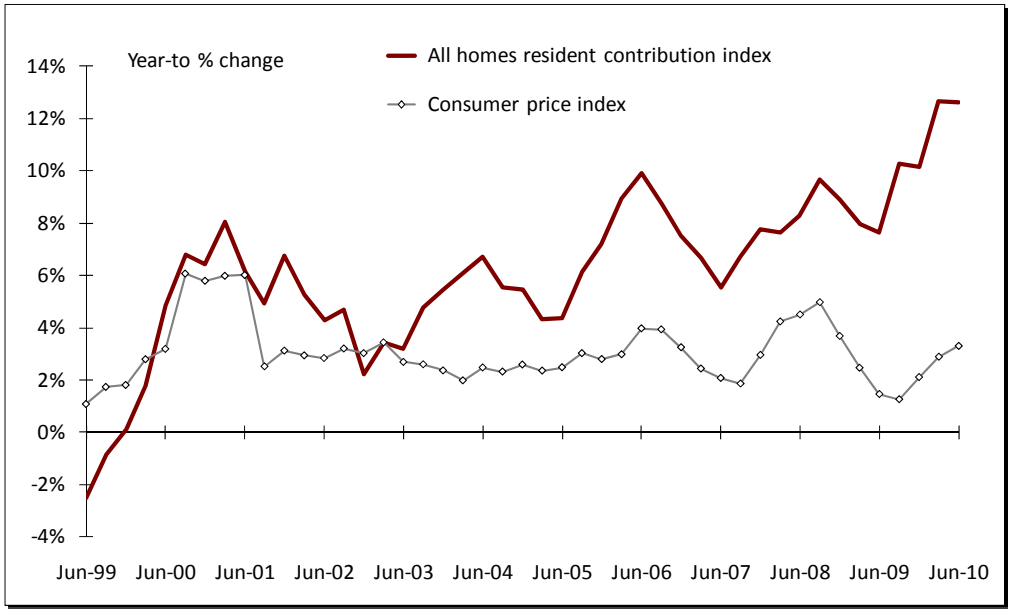
1.1 Resident contributions

65. Growth in total revenues reflects both increases in government subsidies and payments over time, as well as growth in contributions from residents (via fees, accommodation charges and earnings on accommodation bonds). Figure 14 reports growth in revenues received directly from residents for all homes which has generally remained well above CPI growth

over time. Resident contributions have been growing strongly over recent years, with overall growth of 7.6 per cent over the year to June 2009 across all homes. This includes very large increases in revenue per bed day from accommodation charges (17.7 per cent increase) and accommodation bonds (17.0 per cent increase).

66. Figure 14 shows resident contributions projected to increase strongly in 2009-10 (though information on growth in the stock of accommodation bonds held or accommodation charges levied from the Bentleys survey is not yet available). The strong rate of growth seen in 2008-09 for bonds and charges is projected to continue for 2009-10 (which may be an optimistic assumption). Resident fees are also projected to grow strongly in 2009-10, with these fees linked to the aged pension which has seen a significant rise.

Figure 14: Growth in all homes resident contribution index vs benchmark



Comparing growth in costs and revenues

67. The issue of whether or not the revenues of efficient providers have kept pace with their costs can then be resolved by comparing the growth in the constant frailty total revenue indices with the growth in the Unit Cost Indices. Figure 15 compares the growth in costs and revenues for all residential care providers, with the analysis on a constant frailty basis. The data shows that since 1999, except for 2002 03 and a two year period from July 2005 to June 2007, revenues have consistently grown at a faster rate than unit costs. Over the year to December 2009, revenue growth has increased by 6.1 per cent while cost growth has increased by 3.5 per cent on average across all aged care homes.

68. Similar revenue and cost profiles over time are seen for high care and mixed care homes, with these homes benefiting from the additional funding being provided under the transition to the ACFI classification (see Figure 16). Low care homes also saw strong revenue growth through 2008 but that has moderated to be only a little above costs over the year to December 2009, as the additional funding under the transition to ACFI has been targeted at the higher end of the aged care spectrum. Those homes predominantly catering for low care residents are also now only a very small proportion of the system with the reclassification (combined with the benchmarks used here) meaning many more residents are classified as high care. Only 11 homes out of the Bentleys survey sample of 335 homes are now classified as low care (with 216 high care and 108 mixed care).

Figure 15: Unit cost and underlying revenue growth (constant frailty) – all providers

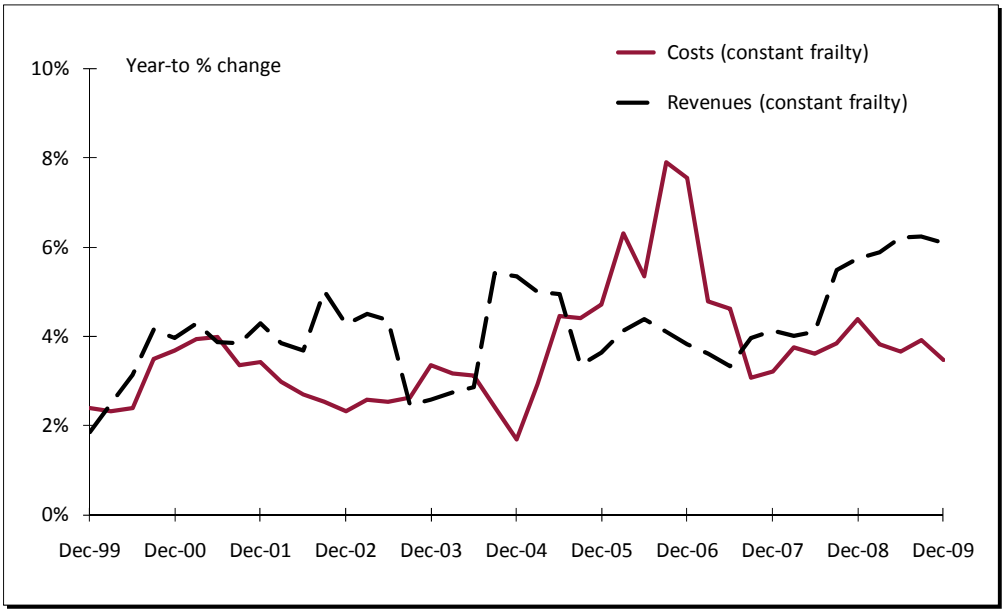
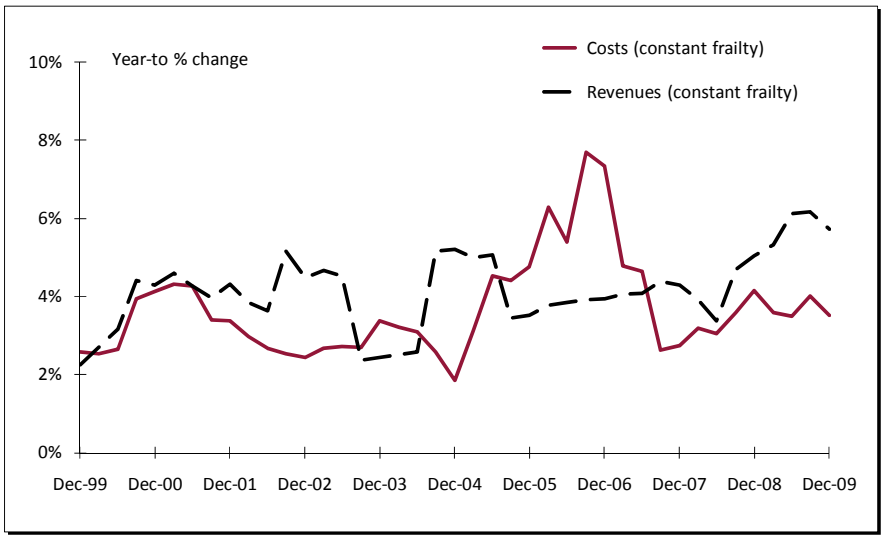
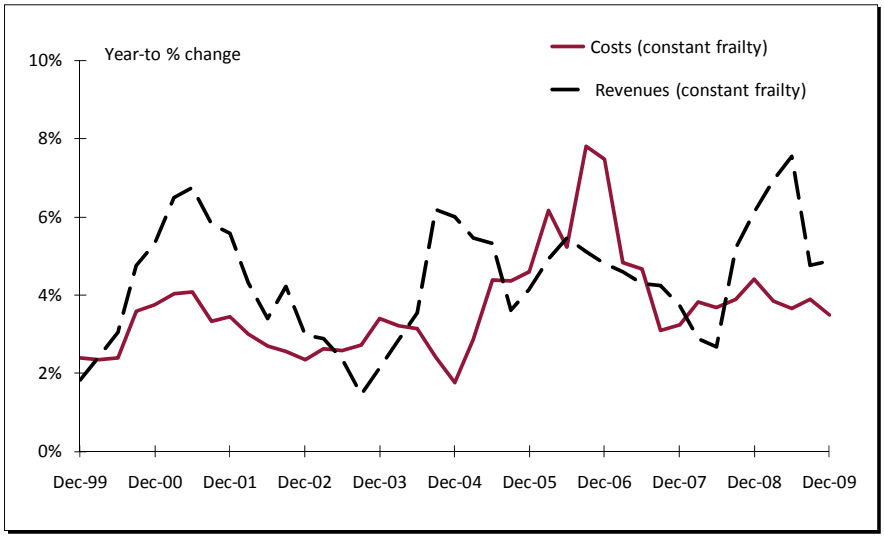


Figure 16: Unit cost and underlying revenue growth (constant frailty), by type of home

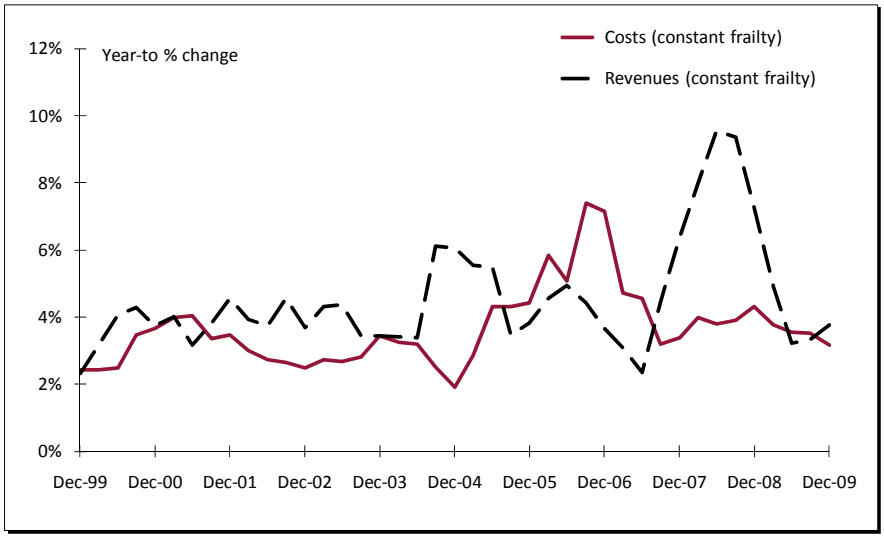
High care providers



Mixed care providers



Low care providers



69. Figure 17 shows the difference between revenues and costs over time across all aged care homes, while Figure 18 shows the equivalent by sector within residential care. For all homes the estimated 2.6 per cent gap between revenue growth and costs growth over the year to December 2009 is the second strongest recorded over the past decade (only below the 2004-05 period which saw the introduction of the Conditional Adjustment Payment).

Figure 17: Revenue growth less cost growth (constant frailty), all homes

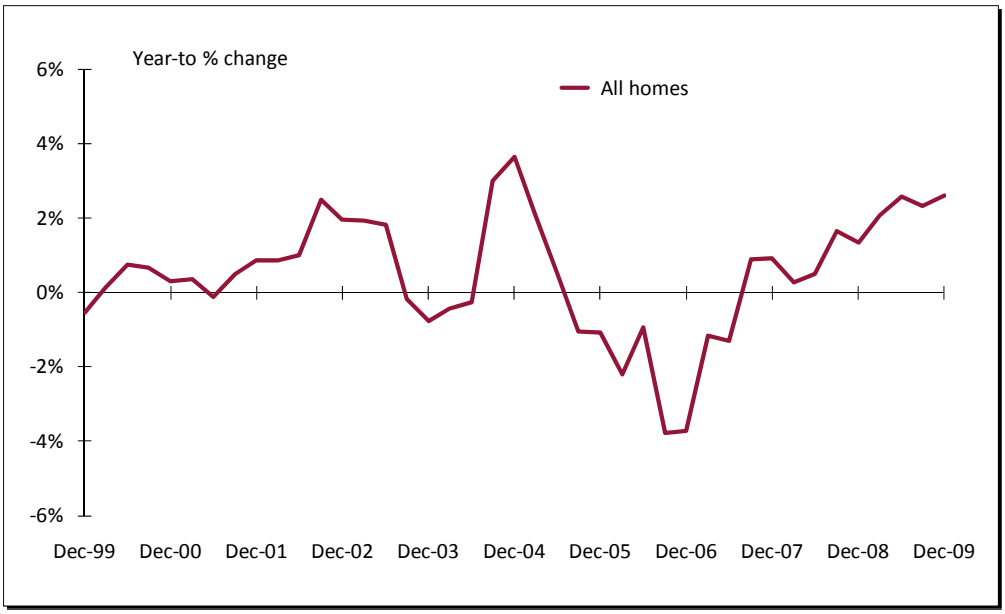
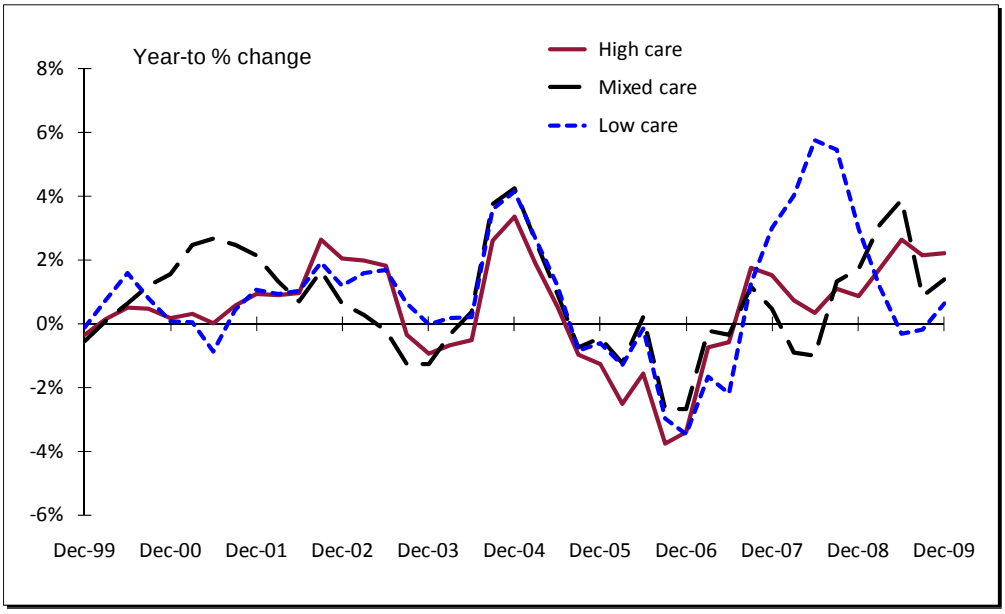


Figure 18: Revenue growth less cost growth (constant frailty) by sector



70. The above comparisons do not allow for savings which providers reap through productivity gains. We estimated labour productivity growth to have averaged 1.0 per cent per annum in residential care over the six years to June 2009 (using Bentleys data based on hours of equivalent staff time to deliver bed days of service to a standard client mix).

71. A summary of movements in the cost and revenue indices discussed in this section along with average productivity growth is shown in Table 4.

Table 4: Summary of cost and revenue indices and productivity

	Six year average annual gro4th to 2008-09
Low care homes	
Revenue	4.8%
Costs	4.1%
Labour productivity	1.0%
Net revenue	**1.7%**
Mixed care homes	
Revenue	4.8%
Costs	4.1%
Labour productivity	1.0%
Net revenue	**1.7%**
High care homes	
Revenue	4.2%
Costs	4.0%
Labour productivity	1.0%
Net revenue	**1.1%**
All homes	
Revenue	4.3%
Costs	4.1%
Labour productivity	1.0%
Net revenue	**1.2%**

72. On average over the six year period to 2008-09, revenue growth exceeded cost growth by a very comfortable margin after allowance for improvements in labour productivity. The improvement in net revenue for low care and mixed care providers has been significant, but more moderate for high care providers (given less exposure to accommodation bonds). However, providers to high care residents have been favoured of late with the transition to the ACFI classification.