



**Outturn Report  
2015-16**

**September 2016**



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## **1. Introduction**

- 1.1 Under the Scotland Act 2012 the Scottish Parliament was able to legislate on two new devolved taxes with effect from 1<sup>st</sup> of April 2015: Land and Buildings Transaction Tax (LBTT) and Scottish Landfill Tax (SLfT).
- 1.2 This report updates and extends the comparison between Scottish Government (SG) forecasts and the year-to-date outturns first published in the Scottish Fiscal Commission (SFC) Report of December 2015, in light of the full-year outturn data released by Revenue Scotland (RS) for the fiscal year 2015-16 for these two devolved taxes.
- 1.3 The SFC's remit also requires us to assess the SG's forecasts of 'buoyancy' – the increase in the roll of rateable values underpinning Non-Domestic Rates Income (NDRI). We contrast the outturn of buoyancy relative to its forecast in the Draft Budget of 2015-16.
- 1.4 We also present the evolution of Scottish Government and the Office for Budget Responsibility (OBR) forecasts through the financial year for each of the devolved taxes.

## 2. Executive Summary

- 2.1 In the case of residential LBTT we find that revenues were £27m less than those expected in the absence of forestalling at the time of the SG's forecast in January 2015. Outturn revenues were in the lower part of the range forecast by the Scottish Government once incorporating the loss of revenue as a result of expected forestalling activity. Our analysis suggests that this shortfall is largely due to reduced transactions in the £325k-£750k price band. A large part of this can be attributed to forestalling activity, as people brought forward house purchases for properties costing more than £333k to the previous tax year. However, our analysis also suggests that the volume of transactions in this section of the housing market remained subdued throughout the entire fiscal year, excluding March 2016. Subsequent data will determine whether or not this pattern has been sustained into 2016-17.
- 2.2 For non-residential LBTT the Draft Budget 2015-16 forecast of £146m underpredicted the outturn of £217m. Our calculations suggest that a major part of this underprediction was due to an underestimate of the tax take which underpins the extrapolation of the forecast into the future. However, recent updates to the OBR's forecasts of the growth in commercial property transactions and, especially, prices for 2015-16, also contribute to reconciling the forecast with the outturn. In effect the commercial property market (and associated tax revenues) has been more buoyant than was anticipated given the data available at the time of the original forecast. There were also unexpectedly high revenues generated at the end of both the calendar and tax years, suggesting transactions (especially high value ones) in this sector may be concentrated prior to the end of a firm's financial year.
- 2.3 For the Scottish Landfill Tax the original forecast of £117m compares to an outturn of £147m. A large part (£20m) of this underprediction can be explained by the realisation, based on the first two quarters' outturn data, that the discrepancy between landfill data and tax revenues found in the UK as a whole, did not appear to apply to Scotland.<sup>1</sup> Another £5m is due to the fact that the 2011 SEPA<sup>2</sup> landfill waste data underpinning the forecast underestimated the higher landfill levels observed in subsequent data releases of pre-2015-16 landfill data. The remainder is due to an overprediction of the rate of decline in landfill volumes.

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<sup>1</sup> Prior to devolution there was a lack of attributable Scottish landfill tax data with which to assess this phenomenon.

<sup>2</sup> Scottish Environment Protection Agency.

### 3. Land and Buildings Transaction Tax (LBTT)

#### The Residential Model

- 3.1 When the Scottish Government initially announced tax rates and thresholds for residential LBTT in the Draft Budget of 2015-16, the revenues they expected to be generated by the new tax were forecast to be £295m.<sup>3</sup> However, in the Autumn Statement of the 3<sup>rd</sup> December 2014 the UK government announced a restructuring of the UK-wide SDLT which, like LBTT, replaced the old slab structure with a more proportional tax, but also significantly reduced the revenues expected to be generated by SDLT. The Scottish Government responded on the 21<sup>st</sup> January 2015 by altering the tax rates and thresholds that would apply to the LBTT when it was first implemented in April 2015 which resulted in a downward revision of forecast revenues to £235m, before taking account of the effects of forestalling.
- 3.2 On top of this change in tax rates and thresholds, LBTT revenues may be expected to be affected by 'forestalling'. Forestalling is a behavioural effect on the timing of residential property transactions caused by the pre-announcement of SDLT/LBTT policy reforms. Particularly, some higher priced transactions could have been brought forward into the 2014-15 tax year to avoid the higher LBTT rate while some lower priced transactions could be delayed to benefit from the lower LBTT rate<sup>4</sup> (for further analysis see paras 3.10-3.24 below). At the time of announcing the change in LBTT rates and thresholds, the Scottish Government estimated these forestalling effects would lie in the range £12m-£37m, such that expected revenues from residential LBTT were between £198m-£223m. The introduction of the Additional Dwelling Supplement (ADS) in April 2016 was expected to increase LBTT revenues in 2015-16 by £5m-£7m as a result of forestalling behaviour anticipating the introduction of the ADS.<sup>5</sup> As a consequence, the net impact of these forestalling effects implies a reduction in revenues in the range £5m-£32m, generating a post-forestalling forecast range of £203m-£230m.

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<sup>3</sup> Scottish Government Draft Budget 2015-16 (December 2014), Table: 2.03, pp: 16 ([link](#)).

<sup>4</sup> For a discussion on 'forestalling' see Scottish Fiscal Commission (December 2015): Report on Draft Budget 2015-16, pp: 9-14 ([link](#)); OBR (December 2014): Economic and Fiscal Outlook, Box 4.5, pp: 124- 127 ([link](#)).

<sup>5</sup> Scottish Government (December 2015) Scottish Budget Draft Budget 2016-17: Devolved Taxes – Forecasting Methodology, pp: 11 ([link](#)).

- 3.3 Residential LBTT returns (provisional) received by Revenue Scotland<sup>6</sup> indicate that liabilities of £202m have been declared in the full financial year 2015-16. However, Revenue Scotland produce annual residential LBTT revenue figures on an accruals basis of £208m.<sup>7</sup> The difference arises as the liabilities published on the RS website are allocated to calendar months based on when the tax return is received, rather than when the underlying transaction occurred. As a result the initial month of liabilities data in April 2015 will only include part of the transactions for that month. All subsequent months will include some liabilities generated by transactions in earlier months, and will lose some liabilities from transactions which occurred in that month but were recorded in later months. Therefore, the difference of £5.8m reflects transactions which occurred in 2015-2016, but which were recorded in returns received in later months. This outturn figure is towards the lower end of the range of expected revenues forecast by the Scottish Government once incorporating the net revenue effects of forestalling activity.
- 3.4 In addition to the forestalling effects just mentioned, there are other possible explanations as to why the outturns may differ from forecast – the mean and median house-price, and volume of transaction forecasts which feed into the forecasting model may have been incorrectly forecast; and/or there may have been a more permanent change in the nature of transactions in the housing market possibly as a result of the introduction of the new tax. We shall now attempt to tease out which combination of these factors is most likely to reconcile the observed outturns with forecast.

## Housing Market Outturns

- 3.5 The residential LBTT forecast is driven by forecasts of house prices and the volume of transactions in the housing market. Table 1 details the forecast values of these variables, relative to their outturn values. We then re-run the Scottish Government's forecasting model to compute what the forecast would have been had these variables been forecast correctly. We perform this counterfactual simulation for each variable separately before calculating the outturn had all three variables been correctly forecast.

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<sup>6</sup> Revenue Scotland (April 2016): Land and Buildings Transaction Tax (Monthly) Statistics March 2016 ([link](#)).

<sup>7</sup> Revenue Scotland Annual Report and Financial Statements for the year ended 31 March 2016 Devolved taxes Account (September 2016) ([link](#)).

**Table 1: Residential LBTT – Economic Determinants Forecast for 2015-16**

	Forecast of Economic Determinant	Outturn of Economic Determinant	Revised Revenue Forecast	Difference from Original Revenue Forecast <sup>8</sup>
Average House Price	£174,008	£166,139	£162.6m	- £72.4m
Median House Price	£143,764	£139,640	£263.2m	£28.2m
Volume of Transactions	100,373	103,820	£243.0m	£8m
Combined Effect	-	-	£196.2m	- £38.8m

Notes to Table: The Forecast column is derived from the SG’s forecasting model which uses the historical distribution of residential property transactions based on Registers of Scotland data using annual forecast growth rates for 2015-16 of 5.26% for median and average house prices, and 6.9% for transactions.

The average and median house price outturn numbers come from Registers of Scotland, ‘Quarterly Statistic Time Series’, ending in Q4 of 2015-16.<sup>9</sup>

The outturn number for the Volume of Transactions comes from Revenue Scotland, ‘LBTT Monthly Statistics’, April 2016. As discussed in para 3.3 this figure from RS is based on transactions where the tax returns were received in 2015-16 and does not include transactions with tax returns received after March 2016.

The Revised Forecasts are based on SFC calculations and do not constitute revised official forecasts of the Scottish Government.

3.6 Table 1 shows that the average and median house prices were both lower than forecast, but with the larger absolute error relating to average house prices. At the same time the volume of taxable transactions was over 3,400 more than expected.

<sup>8</sup> The original forecast of £235m did not include the estimated effects of forestalling behaviour.

<sup>9</sup> It should be noted that the original Scottish Government house price data come from disaggregated residential property transactions prior to being extrapolated forwards, and these data have not been subject to subsequent revisions. However, the quarterly price data only cover transactions in the range £20k-£1m, and have, potentially, been subject to data revisions. As a result the historical values of the two data series are very similar, but not identical. Nevertheless, the key point is that median house price growth has been significantly stronger than average house price growth in the quarterly Registers of Scotland dataset.

- 3.7 The individual contributions of these errors to the overall residential LBTT revenue forecast error can be deduced from the final column. For example, if average house prices had not been over predicted, the estimated revenues from residential LBTT would have fallen from £235m to £162.6m, assuming the other determinants of LBTT had remained as initially forecast. If, instead, we forecast receipts using the outturns for average and median house prices, as well as the volume of transactions, the SG forecasting model would predict revenues of £196.2m which is not significantly different from the outturn of £208m given that this latter figure is expected to include an element of forestalling associated with ADS in the range of £5m-£7m.
- 3.8 However, although the LBTT model appears to capture the aggregate outcomes well when fed the aggregate outturn data, analysis by the Scottish Government analysts presented to the SFC suggests that the log-normal distribution overpredicts revenues in the £325k-£750k price bracket, while there is an offsetting underprediction of revenues in the over £750k bracket of around £11m in each case.<sup>10</sup> Whether there was such a large discrepancy between the distribution of transactions suggested by the log-normal distribution and the historical data is currently being investigated.<sup>11</sup>
- 3.9 This particular pattern of forecast errors suggests that a major part of the forecast error for residential LBTT arose from the underprediction of average house prices relative to median house prices which in turn implies that the distribution of transactions tilted away from the upper end of the market. This could be consistent with a forestalling effect, whereby transactions in the upper end of the market were brought into the 2014-15 tax year, and were subsequently subdued in 2015-16. In light of this we now turn to explore further evidence on the nature of any forestalling activity.

## Forestalling

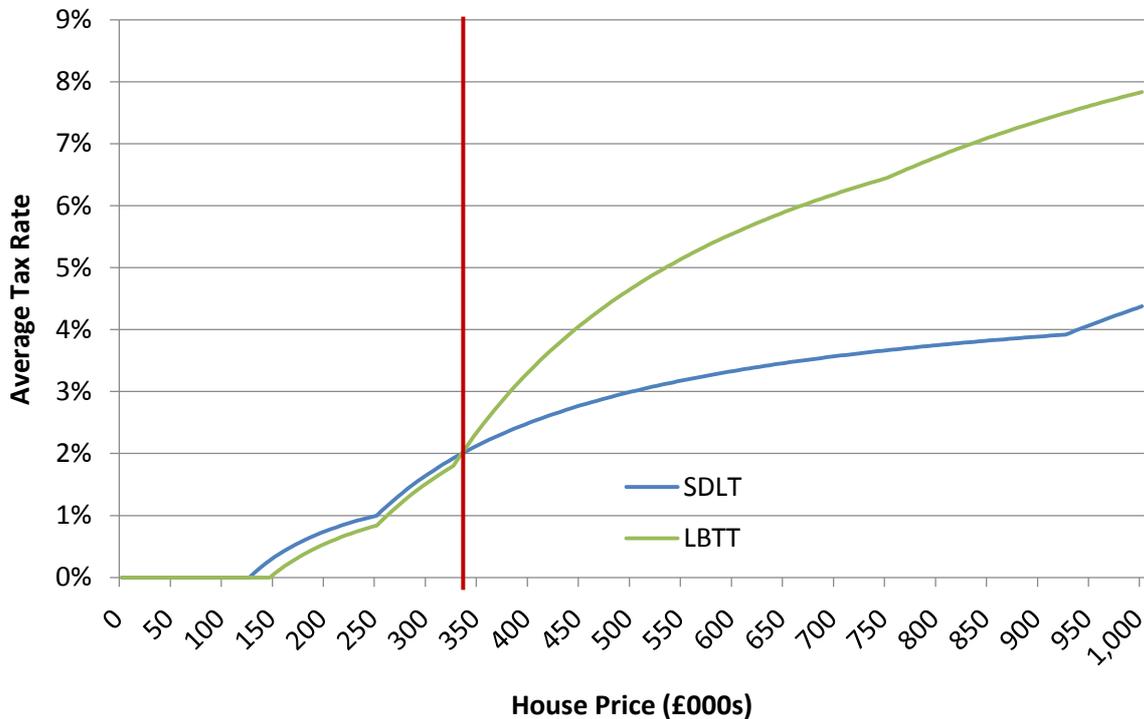
- 3.10 Figure 1 calculates the change in the average tax rate between the implemented residential LBTT and the SDLT it replaced (after the revision to its structure in the Autumn Statement of 2014). There is a significant rise in the average tax rate applied to transactions on properties in excess of £333,000. It is this difference that could potentially lead to behavioural responses in the upper segment of the market.

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<sup>10</sup> Evidence presented to the SFC in the scrutiny meeting of 21<sup>st</sup> June 2016 in the paper 'Assessment of Forecasts for residential and non-residential LBTT Revenues in 2015-16'.

<sup>11</sup> Further analysis will be undertaken once historical SDLT data broken down by price band is received. This will assess the historical fit of the log-normal distribution in its upper tail when applied to transactions in the housing market.

**Figure 1: Residential LBTT – Average Tax Rates under LBTT and SDLT**



Source: SFC calculations. The vertical red line depicts the point at which the average tax rate under LBTT rises above that implied by SDLT.

3.11 Since such forestalling effects would generally be expected to be strongest around the time of the tax change, we begin by contrasting the pattern of receipts we would have expected to have received throughout the year with the receipts that have been realised – see Table 2.<sup>12</sup> However, since the housing market exhibits strong cyclical behaviour we need to account for this in calculating the revenues we would expect in a given month. Therefore, the first two columns of Table 2 detail the patterns in tax revenues we would typically expect to see given historical seasonal patterns in both house prices and transaction volumes. This shows the higher levels of activity in the summer months, as well as the more subdued activity levels in the market following Christmas.

<sup>12</sup> As discussed in para 3.3 the monthly liabilities figures are allocated to calendar months based on when the tax return is received, rather than when the underlying transaction occurred and so slightly misallocate accrued revenues across months, with the greatest impact likely to be an understatement of accrued revenues in the initial month.

**Table 2: Residential LBTT – Monthly Forecast vs Outturn**

Month	Expected Tax Revenues (%)	Expected Tax Revenues (£m)	Actual Liabilities (£m)	Difference (£m)	Cumulative Difference (£m)
Apr	7.5	17.6	7	- 10.6	- 10.6
May	8.1	19.1	11.4	- 7.7	- 18.3
Jun	9.3	21.9	18.5	- 3.4	- 21.7
Jul	10.3	24.1	19.4	- 4.7	- 26.4
Aug	9.2	21.5	21.4	- 0.1	- 26.6
Sep	9.6	22.5	18.7	- 3.8	- 30.3
Oct	9.1	21.3	19.9	- 1.4	- 31.7
Nov	8.4	19.8	20.8	1.0	- 30.7
Dec	9.8	23.0	19.7	- 3.3	- 34
Jan	5.5	12.9	12.6	- 0.3	- 34.3
Feb	6.1	14.3	11.6	- 2.7	- 37
Mar	7.2	17.0	20.9	3.9	- 33.1
Total	100	235	201.9	- 33.1	-

Notes to Table: The estimation of monthly Tax Revenues is based on SFC calculations building on SG estimates of seasonality in house prices and transactions.

The Actual Liabilities are from Revenue Scotland, 'LBTT Monthly Statistics', April 2016 ([link](#)).

- 3.12 Focusing on the final two columns, we can observe the extent to which the outturn receipts were greater or less than what we would have expected given historical seasonality and the annual forecast revenues of £235m, before adjusting for lost revenue due to forestalling. There are several features worth noting. Firstly, there appears to be an immediate period where the effects of forestalling can be seen. Already apparent in the SFC's report of December 2015,<sup>13</sup> this started in April 2015 and ended sometime between July and October 2015. For example, in September 2015 the cumulative difference between expected and actual receipts summed to £30.3m which is consistent with the November 2015 OBR estimate that transactions with an LBTT value of £30m were brought forward to 2014-15.<sup>14</sup> This also is within the range of the Scottish Government's initial estimate of forestalling effects of between £12m and £37m.
- 3.13 Secondly, after October 2015 actual revenues seem to enter a period in which they fluctuate randomly above or below their forecast values; partly this volatility can be attributed to random fluctuations in the Scottish housing market. However, it is worth noting that on average residential LBTT revenues are still less than expected. To what extent this can be attributed to a permanent structural change in the frequency or the distribution of transactions in the Scottish housing market requires further analysis (see para. 3.24 below).
- 3.14 Finally, in March 2016 we observe an increase in tax revenues above their expected figure. This raises the possibility that this increase in LBTT tax revenues could be as a result of a new 'forestalling' effect associated with the Additional Dwelling Supplement, a 3% slab tax on purchases of additional residential properties above £40k. The Scottish Government estimated that £5m-£7m of revenues would be brought forward into 2015-16 as a result of forestalling behaviour.<sup>15</sup>
- 3.15 In order to assess the validity of these conjectures we need to look more closely at the pattern of revenues generated by LBTT across the various thresholds which apply to the tax. Table 3 contrasts the revenues generated, broken down by threshold band, with those expected under the original forecast of £235m.

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<sup>13</sup> Scottish Fiscal Commission (December 2015): Report on Draft Budget 2016-17, Table: 1, pp: 10 ([link](#)).

<sup>14</sup> OBR (November 2015): EFO Devolved Taxes Forecast, Table: 3.4, pp: 21 ([link](#)).

<sup>15</sup> Scottish Government (December 2015) Scottish Budget Draft Budget 2016-17: Devolved Taxes – Forecasting Methodology, pp: 11 ([link](#)).

**Table 3: Residential LBTT – Annual Forecast vs Outturn by Price Band**

Threshold Band	Forecast Revenues (£m)	Outturn Revenues (£m)	Difference (£m)
£145k-£250k	28.6	29.3	0.7
£250k-£325k	35.1	33.3	- 1.8
£325k-£750k	146.7	111.0	- 35.7
Over £750k	24.5	28.5	4.0
Total	235	202	- 33

Notes to Table: The Forecast Revenues come from an analysis of the SG’s forecasting model undertaken by the SFC. The outturns by price band come from data obtained from Revenue Scotland by the SFC and reflect tax declared due on returns received in 2015-16 not, strictly speaking, accrued revenues.

- 3.16 Breaking the tax receipts into threshold bands strongly suggests that there was a differential effect across segments of the market. Below the £325k threshold, tax revenues are in line with what was forecast. Within the range £325k-£750k there is a large overprediction of revenues which are £35.7m lower than expected and which can more than account for the overall forecast error. Interestingly, at the very top end of the market, for houses costing more than £750k, for the year as a whole revenues were underpredicted and were actually £4m more than expected.
- 3.17 As noted above, there appears to be a breakdown in the fit of the log-normal distribution used to describe the pattern of transactions across houses of different prices. Using outturn data for the economic determinants of the forecast SG analysts compute that for the year as a whole revenues in the £325k-£750k price band were 9.5% lower than predicted by the log-normal distribution and revenues raised in the upper bracket of over £750k were 61.4% higher, even although in aggregate the log-normal distribution correctly estimates the revenues received. Adjusting for this loss of fit in the underlying distribution would shift some of the forecast revenues from the penultimate price band to the upper price band. We shall return to this issue below.

- 3.18 So far the evidence seems to suggest that there was a reduction in revenues relative to expectations in the early part of the fiscal year, and that, for the year as a whole, revenues were significantly lower, particularly for transactions in the price band £325k-£750k. This is suggestive of a forestalling effect. However, to be more confident of this we now seek to combine these two pieces of evidence by looking at the pattern of receipts throughout the year after breaking them down into price bands.
- 3.19 Figure 2 plots the expected revenues and outturns across threshold bands for each month of the 2015-16 fiscal year. In doing so we assume that the seasonality observed for the market as a whole applies within each price band. The figure also includes an 'Expected Revenue (Adjusted)' series to account for the loss of fit in the log-normal distribution, reducing the monthly expected revenues in the £325k-£750k price bracket by 9.5%, and raising them in the over £750k bracket by 61.4%.

**Figure 2: Residential LBTT – Annual Forecast vs Outturn by Price Band**



Notes to Figure: The Actual Revenue received (solid red line) is based on liabilities data provided to the SFC by Revenue Scotland. The Expected Revenue (blue dashed line) takes the annualised expected revenues broken down by price band in Table 3 and allocates them across months using the same seasonality factors applied in Table 2.

3.20 Figure 2 largely confirms the earlier analysis. Within the two lowest price bands outturn revenues are in line with forecast. For the two higher price bands which are affected most by the change in tax and which, therefore, had the greatest propensity to reflect forestalling behaviour, there are larger differences between outturns and forecasts, even when using the adjusted series.

- 3.21 For the £325k-£750k band outturns are consistently below expectation, except in March 2016. While there is some narrowing of the shortfall beyond September, suggesting the presence of a forestalling effect in the first half of the year, the data are consistent with the possibility that this segment of the market has even remained subdued throughout all but the last month of the year. This would be the case if the tax rates applied to this segment of the market were reducing the volume of transactions even after the effects of any forestalling activity were expected to have ended. Using the adjusted expected revenue series, we still see a significant overprediction of revenues in the early part of the year, but the outturns in the latter part of the year are closer to prediction although still tending to overpredict outcomes.
- 3.22 In the highest price band, over £750k, there was no tax revenue raised in the first month of the new tax. Revenues from this price band then rose sharply, and were above (unadjusted) expectations from August onwards. From around November onwards actual revenues fluctuate around adjusted expected revenues. This is in contrast to the patterns observed in the £325k-£750k price band where the recovery was not nearly as sharp. In other words the highest price band appears to have been subject to a sharp, but temporary, forestalling effect with no obvious ongoing behavioural response apparent to permanent price and tax effects.
- 3.23 There was a sharp upturn in revenues across all price bands in March 2016, with revenues £3.9m greater than expected – see Table 2.<sup>16</sup> This may reflect a new behavioural response to the Additional Dwelling Supplement (ADS) introduced in April 2016. To assess this we examined the outturns for residential LBTT for April 2016. In April 2016 LBTT revenues, excluding the ADS, were £15.8m whilst expected revenues were £22m.<sup>17</sup> This suggests that the unusually buoyant revenues from March 2016 were not sustained into the new tax year.

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<sup>16</sup> As discussed in para 3.3 the monthly liabilities figures are allocated to calendar months based on when the tax return is received, rather than when the underlying transaction occurred and so slightly misallocate accrued revenues across months.

<sup>17</sup> The outturn numbers for April 2016 come from Revenue Scotland data provided to the SFC and exclude the revenues from the Additional Dwelling Supplement, which raise the total residential LBTT outturns to £17.8m in March 2016. The expected revenues are calculated based on the seasonality reported in Table 2. Expected revenues for April 2016 constitute 7.5% of the annual forecast revenues for 2016-17 of £295m.

3.24 In summary, the residential LBTT outturn data for 2015-16 suggest that the shortfall in revenues received (£208m) relative to forecast (£235m) is largely due to lower revenues being generated by transactions within the house-price band £325k-£750k. This shortfall was particularly acute in the earlier half of the year suggesting that it can at least be partially explained by a forestalling effect. However, given that transactions in the highest price band (over £750k) recovered relatively quickly, the fact that the £325k-£750k segment of the market remained subdued throughout all but the last month of the year, raises the possibility that there are ongoing behavioural responses beyond those associated with the temporary effects of forestalling activity. Correcting for the possible breakdown in the applicability of the log-normal distribution in the upper end of the market reduces the magnitudes of these effects, but still suggests that the £325k-£750k section of the market may be underperforming in terms of its contribution to tax revenues.

### The Non-Residential model

3.25 The method used to forecast non-residential LBTT revenues at the time of the 2015-16 Draft Budget was relatively straightforward. The SG forecasters took an average of the last three available years' outturn data and then applied the OBR's forecasts of growth in commercial property prices and transactions to project those tax revenues forwards. This gave rise to a forecast for 2015-16 of £146m. Data from Revenue Scotland show that the returns received generated revenues of £214m,<sup>18</sup> while on an accruals basis Revenue Scotland outturn data rise to £217m.<sup>19</sup>

3.26 As with the residential LBTT forecast, we can attempt to deconstruct the forecast error by re-running the SG forecasting approach with more up-to-date data. Specifically, we revise the forecast by using outturn data for non-residential property transactions up to 2014-15 to form the base from which the non-residential tax forecasts are extrapolated before using the most up to date OBR forecasts for commercial property prices and transactions for 2015-16. The results are shown in Table 4.

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<sup>18</sup> Revenue Scotland, LBTT Monthly Statistics, April 2016 ([link](#)).

<sup>19</sup> For a discussion of this discrepancy see para 3.3.

**Table 4: Non-Residential LBTT – Economic Determinants**

	Forecast	Outturns / Latest OBR Forecast	Revised Revenue Forecast
Baseline in 2014/15	£131m	£164m	£173m
Commercial Property Price Growth 2015-16	2%	7.4%	£154m
Commercial Property Transaction Growth	3.1%	3.5%	£147m
Indexed Baseline	-	£187m	£197m
Combined	-	-	£208m

Notes to Table: The forecast baseline of £131m is computed by removing the extrapolation implied by the assumed commercial property price and transaction growth rates of 2.1% and 3.9% in 2014-15 and 2% and 3.1% in 2015-16, respectively from the 2015-16 forecast of £146m. The revised baseline of £164m comes from averaging the estimated SDLT liabilities from the three years prior to 2015-16; these outturn statistics were provided by the SG. The indexed baseline indexes these revised outturn numbers by commercial property price inflation. The revised commercial property price and transactions forecasts come from the OBR.<sup>20</sup>

- 3.27 A major element in the underprediction of non-residential LBTT revenues lies in the fact that the baseline from which the forecast was extrapolated was too low. The first element accounting for the low base was that, given available data, the revenues expected from the years prior to 2015-16 were too low. Taking the average of the outturn data for the three fiscal years preceding 2015-16 would have raised the baseline from £131m to £164m, such that after the projected growth in commercial property prices and transactions that were used at the time of the 2015-16 budget are applied, the forecast would have risen to £173m.
- 3.28 At the same time the OBR in March 2016 has revised up its forecasts of commercial property price growth for 2015-16 from 2% to 7.4%, and for transactions from 3.1% to 3.5%. Both of these factors also increase the forecast receipts.

<sup>20</sup> OBR, 'Economic and Fiscal Outlook', Table 4.1, pp 98, March 2016 ([link](#)).

- 3.29 Finally, in its December 2015 report the SFC noted that it had explained to the Scottish Government that it would have indexed the smoothing of previous years' outturns to the growth in commercial property prices when constructing the base from which the forecast is extrapolated. The SFC argued that failure to do so was likely to impart a downward bias to the forecast. The Scottish Government implemented the SFC's suggestion in the 2016-17 Draft Budget forecasts. Had that change been made retrospectively, the forecast for 2015-16 would also have been revised upwards further. Combining these various revisions would have implied a forecast outcome of £208m, relative to an outturn of £217m and in contrast to the original forecast of £146m.
- 3.30 We can also attempt to assess whether or not there is any obvious seasonal pattern in the non-residential revenue receipts. Table 5 compares outturn tax liabilities with expected revenues from non-residential LBTT.<sup>21</sup> In constructing a measure of expected revenues by month we use the observed pattern in commercial property transactions for the whole of the UK. Unlike the case of residential property transactions this does not display significant seasonality. We do not have data on prices with which to assess whether or not this adds any additional seasonality.

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<sup>21</sup> As discussed in para 3.3 the monthly liabilities figures are allocated to calendar months based on when the tax return is received, rather than when the underlying transaction occurred and so slightly misallocate accrued revenues across months.

**Table 5: Non-Residential LBTT – Monthly Forecast vs Outturn.**

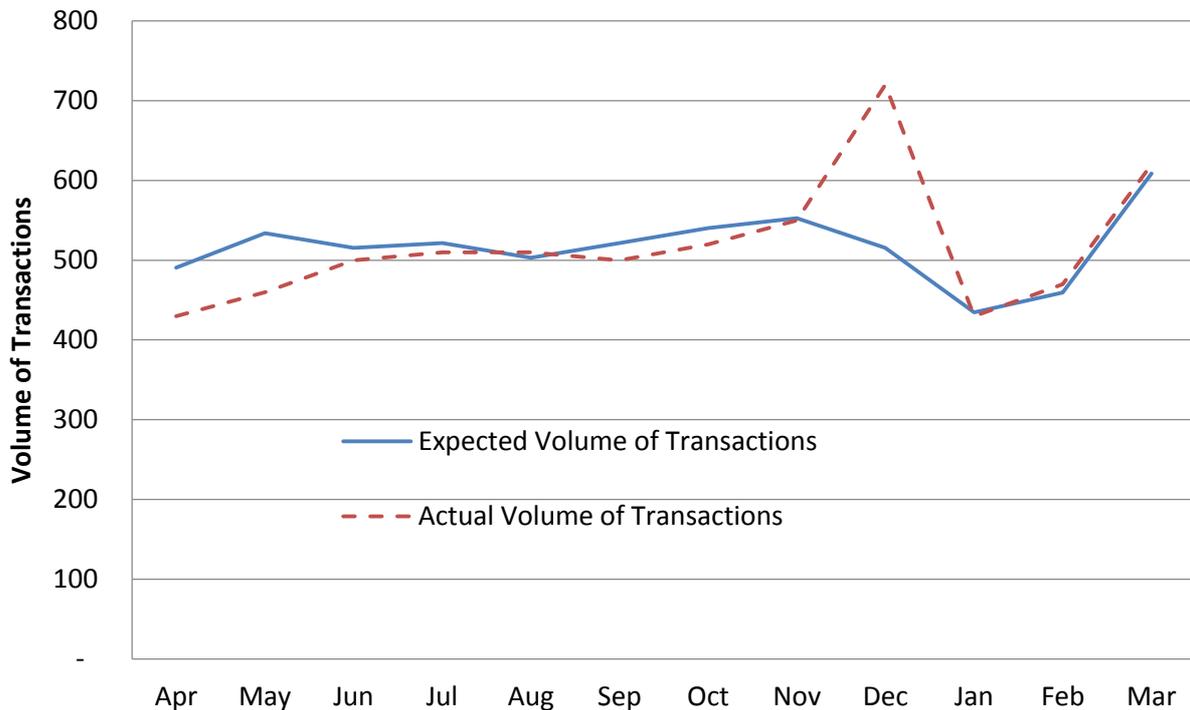
Month	Expected Tax Revenues (%)	Expected Tax Revenues <sup>a</sup> (£m)	Actual Liabilities <sup>b</sup> (£m)	Difference (£m)	Cumulative Difference (£m)
Apr	7.9	11.5	10.9	- 0.6	- 0.6
May	8.6	12.6	12.7	0.1	- 0.5
Jun	8.3	12.1	13.9	1.8	1.3
Jul	8.4	12.3	18.1	5.8	7.1
Aug	8.1	11.9	15.5	3.6	10.7
Sep	8.4	12.2	15.8	3.6	14.3
Oct	8.7	12.8	14.8	2.0	16.3
Nov	8.9	13.0	22.4	9.4	25.7
Dec	8.3	12.2	34.6	22.4	48.1
Jan	7.0	10.2	12.0	1.8	49.9
Feb	7.4	10.8	10.3	- 0.5	49.4
Mar	9.8	14.4	33.2	18.8	68.2
Total <sup>c</sup>	100	146	214	68.2	

Notes to Table: <sup>a</sup> The Expected Revenues are based on SFC calculations using the transactions seasonality reported in Table 3, pp: 20 of the SFC’s Report of December 2015 ([link](#)).

<sup>b</sup> The Actual Liabilities are from Revenue Scotland, LBTT Monthly Statistics, June 2016. <sup>c</sup> Columns may not sum to reported column totals due to rounding.

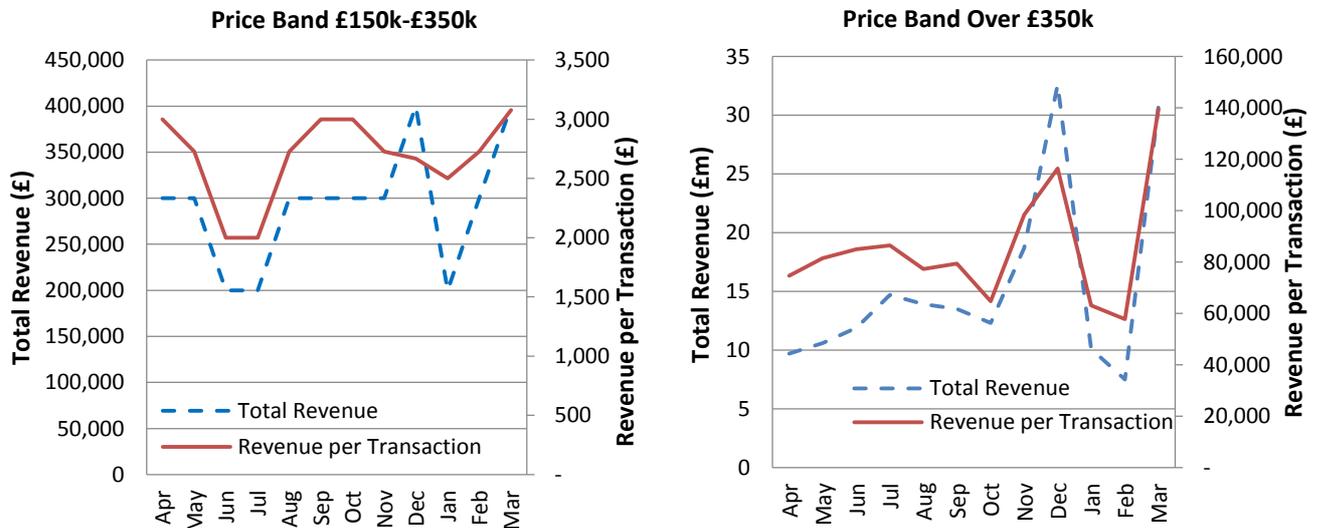
- 3.31 While the revenues appeared to be on track initially, the revenues received throughout the year rose significantly above the forecast level. Additionally, there are three months – November, December and March – where there are substantial spikes in the value of tax revenues raised. This could either be because there were more transactions in these months, or they were of higher value.
- 3.32 In Figure 3 we plot the expected and actual volume of non-residential LBTT transactions by month. This suggests that the volume of transactions in November and March were not out of line with expectations, but that there were a surprisingly high number of transactions in December.

**Figure 3: Non-Residential LBTT – Expected and Actual Transaction Volumes**



3.33 To further explore the unusual behaviour towards the end of the calendar and fiscal years, we constructed the revenues per transaction across the two price bands that generate almost all the non-residential LBTT revenues. If these are flat then it suggests that the reason for the spike in revenues is purely driven by a rise in the number of transactions. While if there is a spike in the revenue generated per transaction then the rise in revenues is, to some extent, also generated by a rise in the value of each underlying transaction.

**Figure 4: Non-Residential LBTT – Total Revenues and Revenues per Transaction by Price Band.**



Notes to Figure: The Total Revenue excluding leases (red line) is broken down by price band and based on data provided to the SFC by Revenue Scotland. The Revenue per Transaction (blue dashed line) scales that data by the number of recorded transactions broken down by price band.

3.34 Figure 4 reveals that there is a sizeable jump in the value of an individual transaction for the upper price bands (over £350k) in the months of November, December and March. Therefore the spike in revenue relative to expectations is due to higher-valued individual transactions in the higher price band in November, December and March, in combination with an unexpectedly large volume of transactions in December. The fact that these transactions are occurring at points in the year typically associated with financial year ends, and there is no significant seasonal pattern in the transactions data for the UK as a whole, is worthy of further investigation.

## 4. Scottish Landfill Tax (SLfT)

- 4.1 Full financial year outturn data (on a provisional basis) published by Revenue Scotland are equal to £147m. This is above the original forecast of £117m. As discussed in paragraph 4.8 of the December 2015 SFC Report, the SG recalculated an implied annualised amount for 2015-16 of £142m in the light of the year-to-date SLfT revenues outturn data.<sup>22</sup> There are two major components to this revision. Firstly, the forecasts of mixed waste landfill volumes were based on extrapolating 2011 SEPA data and were lower than would have been forecast using the 2013 SEPA data (which weren't available at the time). That amounts to an upward revision of £5m. Secondly, UK Government revenues from Landfill Tax have historically been relatively low compared to what would have been predicted from environmental agency data. The volumes based on UK Government revenues were originally applied to the 2015-16 forecast. However, as outturn data became available and this difference between tax revenues and landfill volume data did not appear to apply to Scotland, the forecast was raised by around £20m. The remaining £5m forecast error is due to the transition in waste volumes to the Scottish Government's landfill targets not being as rapid as anticipated in the final two quarters of the year.
- 4.2 Table 6 presents a breakdown of expected and actual standard and lower rated tonnages by quarter. In order to obtain an estimate of the standard and lower rated tonnages that would have been expected by quarter based on the annual SG forecast we used historical UK wide data on tonnages declared for the period 2010-11 to 2014-15.<sup>23</sup> In particular, we estimate a 5-year UK seasonality pattern of standard and lower rated tonnages. Then, we apply UK-wide seasonality patterns to revised annual SG forecast to obtain expected standard and lower rated tonnages by quarter. For example, to obtain Q1 expected standard rated tonnages of 476,000, we apply the UK seasonality pattern of 26.55%<sup>24</sup> to the annual SG estimate of standard rated tonnages, 1,793,000. In the final columns we contrast expected with actual tonnages outturns published by Revenue Scotland in June 2016. In parentheses, we calculate the difference between expected and actual tonnages. A positive (negative) number implies that actual tonnages were higher (lower) than predicted. (Results do not change if we use a 10-year average of UK seasonality patterns instead of a 5-year average).

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<sup>22</sup> As with the previous LBTT taxes, this figure does not constitute an official Scottish Government (revised) forecast, rather a by-product of the forecasts produced for the 2016-17 Draft Budget.

<sup>23</sup> HM Revenues and Customs (July 2015): Landfill Bulletin data July 2015 ([link](#)).

<sup>24</sup> The figure 26.55% implies that on average 26.55% of standard 'rated' tonnages goes to landfill over the first quarter of the financial year.

**Table 6: Scottish Landfill Tax Tonnages: Outturn vs Forecasts**

	UK Seasonality Tonnages (5-year average) (%)		Expected Tonnages using UK Seasonality (000s)		Actual Tonnages (000s)	
	Std	Lower	Std	Lower	Std	Lower
Q1	26.55	24.66	476.0	247.6	475.7 (-0.3)	251.9 (4.3)
Q2	26.43	23.59	473.9	236.8	474.4 (0.5)	280.4 (43.6)
Q3	24.12	25.82	432.5	259.2	450.6 (18.1)	257.8 (-1.4)
Q4	22.90	25.93	410.6	260.3	459.8 (49.2)	258.9 (-1.4)
Total			1,793	1,004	1,860.5	1,049

Sources: HMRC; SFC calculations; Revenue Scotland.

Notes to Table: Total Standard and Lower 'rated' tonnages are rounded to 1,793,000 and 1,004,000 from 1,792,642 and 1,004,340. The latter have been estimated applying SG Q1+Q2 Seasonality equal to 0.53 to Revenue Scotland outturn tonnages for Q1+Q2 equal to 950,100 and 532,300 respectively.

- 4.3 In turn, applying standard and lower rates<sup>25</sup> on standard and lower rated tonnages in Table 6 and taking their sum we can produce an estimate of quarterly expected gross SLfT receipts, from which we deduct the maximum amount of tax credit that can be claimed for contribution to the Scottish Landfill Community Fund (SLCF) given expected gross receipts. This is calculated using the current maximum Scottish credit rate of 5.6%.<sup>26</sup> Following this methodology for each quarter in Table 7, we estimate a quarterly breakdown of expected SLfT revenues based on the revised SG annual forecast which can be compared to SLfT revenue outturns as published by Revenue Scotland. Finally, the differences between expected and actual SLfT revenues are reported in the final column of Table 7.

<sup>25</sup> Standard rate is £82.60 and Lower rate is £2.60.

<sup>26</sup> Scottish Government (2015) Scotland's Spending Plans and Draft Budget 2016-17, pp: 18 ([link](#)).

**Table 7: Scottish Landfill Tax Revenues: Outturn vs Forecasts**

Quarters	Expected Revenues (£m)	Actual Revenues (£m)	Difference (£m)
Q1	37.7	37.5	- 0.2
Q2	37.5	37.1	- 0.4
Q3	34.4	36.4	2.0
Q4	32.6	36.0	3.4
Total	142.2	147.0	4.8

Notes to Table: Rows may not sum to reported row totals due to rounding.

- 4.4 Summing up, the original Scottish Government forecast in December 2014 was equal to £117m.<sup>27</sup> Compared to Revenue Scotland data for total SLfT declared in 2015-16 the implied forecast error indicates that the SLfT revenues were underpredicted by £30m. However, as a by-product of the 2016-17 forecast, the Scottish Government produced a recalculation of the implied annualised amount of £142m for 2015-16 revenues which was largely driven by year-to-date outturn data (at the time of the update Q1 and Q2 SLfT tonnages and revenues outturns had been released by Revenue Scotland). The residual forecast error of £5m comes from the fact that the decline in standard rated waste expected in Q3 and Q4 was not fully realised. This ongoing slippage in the forecast rate of decline in landfill waste is being monitored by the SFC and requires an adjustment to the Scottish Government’s forecasting methodology for this tax.

<sup>27</sup> Scottish Government Draft Budget 2015-16 (December 2014), Table: 2.03, pp: 16 ([link](#)).

## 5. Non-Domestic Rates Income

- 5.1 The SFC's current remit is to assess the reasonableness of the "economic determinants underpinning Scottish Government forecasts of Non-Domestic Rate Income". This covers the Scottish Government's forecast of buoyancy – the rate of increase in rateable value underpinning Non-Domestic Rates Income attributable to growth in the property tax base. The forecast for buoyancy was initially 1.55%, which was then reduced to 1.25% following the SFC's description of the forecast as being "on the optimistic side" with an outturn buoyancy of 1.31%.<sup>28</sup> This outturn number is affected by two large-scale projects being added to the Valuation Roll – the Queen Elizabeth University Hospital in Glasgow and the Total Gas Terminal in the Shetlands – without these two projects the buoyancy outturn figure would have been 0.99%.
- 5.2 In light of the importance of individual large scale projects to buoyancy outturns, the Scottish Government has begun discussing the monitoring of such projects with the Scottish Assessors Association. The SFC fully supports this initiative.
- 5.3 After the Scottish Fiscal Commission becomes responsible for the production of forecasts of receipts from Non-Domestic Rates in April 2017, the Commission will consider all aspects of the data, methodology and assumptions underpinning forecasts of Non-Domestic Rates Income.

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<sup>28</sup> This amounts to an increase in NDRI of approximately £20m.

## 6. Comparison of Forecasts

- 6.1 We conclude by summarising the various forecasts of the devolved taxes that were made for the 2015-16 fiscal year by both the Scottish Government and the OBR. These are presented in Table 8 in the chronological order in which they were made. The final row gives the corresponding outturn data for each tax. It should be stressed that the Scottish Government forecasts of January 2016 are not official Scottish Government forecasts but were generated as a by-product of forecasting revenues for the 2016-17 Draft Budget.
- 6.2 The evolution of the forecasts over the course of the year reflects a mixture of methodological innovations, as well as an increased reliance on available outturn and economic determinants data for previous years, as well as for the year to date. Typically these revisions push us closer to the observed outturns. However, it is interesting that even revisions to forecasts made towards the end of the financial year when a large proportion of realised revenues are actually available may not represent an improvement in the accuracy of the forecast. That was the case, for example, with non-residential revenues received in March 2016 which were unexpectedly high. However, the implicit revised forecasts from the SG for non-residential LBTT revenues, which looked optimistic at the time of the SFC's report in December 2015, were brought into line with outturns thanks to the higher than expected revenues in December 2015 and March 2016.

**Table 8: Summary – OBR and SG Forecasts for 2015-16**

	Residential LBTT (£m)	Non-Residential LBTT (£m)	SLfT (£m)
SG – Jan 2015	198-223*	146	117
OBR – July 2015 <sup>29</sup>	264	275	94
OBR – Nov 2015 <sup>30</sup>	178	220	140
SG – Jan 2016 <sup>31</sup>	213-240**	210	142
OBR – March 2016 <sup>32</sup>	206	195	143
Provisional outturn April 2016	202	214	147
Outturn figures on an accruals basis – September 2016 <sup>33</sup>	208	217	147

Notes to Table: \*We deduct net forestalling range £12m - £37m from £235m SG's forecast.

\*\* We deduct net forestalling range £5m - £32m from £245m SG's revised forecast,<sup>34</sup>

Sources: OBR (2015-2016); Scottish Government Draft Budget 2015-16 and 2016-17.

Revision of Table 5, pp 32: in SFC Report December 2015.

<sup>29</sup> OBR (July 2015): EFO Devolved Taxes Forecast, Table: 3.2, pp: 19; Table: 3.2, pp: 19; Table: 4.3, pp: 28.

<sup>30</sup> OBR (November 2015): EFO Devolved Taxes Forecast, Table: 3.3, pp: 20; Table: 3.3, pp: 20; Table: 4.3, pp: 29.

<sup>31</sup> It should be noted that these figures do not constitute an official forecast of the Scottish Government. Finance Committee (January 2016): Report on Draft Budget 2016-17 Table: 3, pp: 16; Table: 5, pp: 22; Table: 6, pp: 23. The forecasts were made in December 2015 at the time of the publication of the Draft Budget.

<sup>32</sup> OBR (March 2016): EFO Devolved Taxes Forecast, Table: 3.3, pp: 21; Table: 3.3, pp: 21; Table: 4.3, pp: 30.

<sup>33</sup> Revenue Scotland Annual Report and Financial Statements for the year ended 31 March 2016 Devolved taxes Account (September 2016) ([link](#)).

<sup>34</sup> The £245m forecast is not an official revision to the Scottish Government's forecast but a by-product of producing the forecast for the 2016-17 Draft Budget. The net forestalling range combines the range of forestalling estimates associated with the introduction of LBTT in April 2015 as well as the forestalling effect on LBTT forecast for the ADS.

## 7. Conclusions

- 7.1 This report details the SFC's analysis of outturn data relative to the forecasts made in the Scottish Government's Draft Budget of 2015-16. The forecast errors reported here have already triggered refinements to the forecasting methodologies that have been implemented in the 2016-17 Draft Budget.
- 7.2 The overprediction of revenues for residential LBTT appears to stem from a reduction in activity in a particular section of the market – specifically for houses in the price bracket £375k-£750k. To some extent this can be accounted for by a forestalling effect whereby such transactions were brought forward into the previous tax year as a result of changes in the tax bands and brackets. However, the fact the overprediction of revenues from this section of the market persists throughout all but the final month of the year suggests that there may be an ongoing behavioural response to the tax rates imposed on this price band. Additionally, there is evidence that the applicability of the log-normal distribution used to allocate expected revenues across price bands may not be functioning as well as previously. This complicates our ability to assess whether or not the responses involved in various sections of the market are likely to be sustained or not.
- 7.3 There is a significant rise in residential LBTT revenues raised in the final month of 2015-16 which is not sustained into first month of the 2016-17 tax year. This may be due to the effects of new forestalling behaviour associated with the new Additional Dwelling Supplement. The SFC shall continue to monitor this possibility as outturn data for 2016-17 emerge.
- 7.4 For non-residential LBTT there was a significant underprediction of revenues, which can largely be accounted for by a more buoyant commercial property market, as well as some methodological improvements in the construction of the forecast base which have been implemented in the forecasts for the 2016-17 Draft Budget.

7.5 The underprediction of SLfT revenues largely comes from the expectation that revenues received would not fully correspond to reported environmental agency landfill data (as found in UK data). This does not appear to apply in Scotland based on the first year outturn data generated by Revenue Scotland. The historical landfill volumes from which the forecast is extrapolated were also higher in more recent SEPA data relative to the data used at the time the forecast was made, and the decline in standard rated waste in the final two quarters of the year was not as great as anticipated. The Scottish Government's forecasts were based on an assumption that waste is reduced linearly and the targets for waste reduction are achieved by 2025.<sup>35</sup> The SFC will continue to monitor progress towards fulfilment of these targets as the current forecast methodology implies any drift away from target will be corrected by 2025. Any further underprediction of landfill volumes, and therefore revenues for SLfT, begins to undermine the validity of this assumption.

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<sup>35</sup> These targets are for total waste arisings to reduce by 15% between 2011 and 2025 and total disposals to landfill to fall to 5% of total waste arisings by 2025.

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