

Stamp Duty Receipts in London

Dr Catherine Barnaby

IMI Commercial Research Assistant,
University of Bath

Professor Nick Pearce

Director of the IPR, University of Bath

Executive Summary

In London, Stamp Duty Land Tax (SDLT) is paid when a property changes ownership. The amount of tax payable is determined by central government policy, and depends on the value of the property. The current SDLT policy was introduced in 2014. This work aims to predict the SDLT receivable in London over the next five years.

SDLT revenue will depend upon the value of property changing ownership, but also upon the housing market. Any model of SDLT receipts will therefore need to include assumptions about the housing market in London. Here, the housing market is considered in two parts: the total number of properties sold, and the distribution of price across the properties sold. In this way, housing market scenarios are constructed in which:

- Growth is extrapolated from previous market trends
- Some aspect of the housing market (either price or volume of sales) remains constant
- There is a crash

These behaviours combine with different predictions of total sales numbers and price distributions to give a range of possible housing market scenarios and, therefore, SDLT receipts.

Resulting revenues range from steady increases over the next five years to a decrease to 35% of current values by 2017 for one of the crash scenarios. All revenues are in 2016 prices.

Introduction

Government policy determines the Stamp Duty Land Tax payable on a property, including parameters such as the boundaries of price bands, and the percentage payable on a price band. Stamp Duty policy has also been used to stimulate particular parts of the housing market – by introducing a “Stamp Duty holiday” for first-time buyers during a set period, for example. The current Stamp Duty policy was introduced in 2014; only revenue for the two most recent years, therefore, will reflect the current Stamp Duty bands and percentages payable. It will be difficult to create a reliable model from only two years’ worth of data – and we therefore focus here on modelling the properties sold, and using this information to predict Stamp Duty revenue.

The housing market in London varies in comparison to the rest of the UK. This suggests that UK models or parameters may not be directly applicable to this instance, and original modelling work for London is therefore necessary.

This modelling work encompasses the following steps:

- Identify data sources, and use these to estimate revenues under the current policy
- Establish historical parameters which might suggest patterns, which could in turn be extrapolated to the next five years
- Use this information to create models of Stamp Duty revenue behaviour under different circumstances
- Define house-price scenarios which are of interest
- Use the models to predict Stamp Duty revenues based on the house-price scenarios
- Present the results

Any statistical model will have a confidence level associated with it. Here, confidence intervals have not been presented and discussed; this was a positive decision taken because estimates of Stamp Duty are derived through multiple layers of modelling. If errors in these individual models are treated naïvely, then the overall errors will appear huge. Covariance should be analysed in order to understand the picture more thoroughly. For example, the error in the estimate of the percentage of properties costing more than £1.5m is very unlikely to be independent of the error in the percentage of properties costing more than £925,000. Such analysis is well beyond the scope of this work.

This being the case, presenting naïve confidence intervals would be grossly inaccurate, and not useful. The work should therefore be read in the spirit that the numbers are estimates, and will have a certain margin of error. The number of significant figures of an estimate does not imply accuracy.

Data Sources

Data are available from organisations including HMRC, the UK Land Registry, The Office for National Statistics (ONS), and the Office for Budget Responsibility (OBR).

HMRC provides information including historical revenues from Stamp Duty by government statistical region. London is one such region. The Stamp Duty revenues used are from *Annual Stamp Tax Statistics 2016*¹.

HMRC also details the current Stamp Duty policy, with the band boundaries and percentages payable, on their website².

The **UK Land Registry** makes available information about every property transfer in the UK. Whilst this is useful, to identify London properties would require merging with a dataset which identifies the authority a property lies within. Fortunately, it also provides a tool which will give the number of properties sold within a region (such as London) within pre-defined price bands³.

Reports were generated for every quarter from 1995, giving the number of properties in London which lay within each price band.

The **ONS** produces statistics such as GDP inflation, which can be used to calculate real values from nominal. However, it is useful to know that the series is exactly that used by the Treasury, and for this reason the OBR report (see below) is used.

The **OBR** is a non-departmental public body for independent analysis and forecasts established by central government. Analyses of interest include *Estimating Foretelling on Stamp Duty*, which details Stamp Duty changes over the last six years⁴.

The OBR also give statistical series used by government; for this project the GDP deflators from the 2016 Autumn Statement report⁵ are used.

Estimating Revenue

Using the banded data provided by the Land Registry is a lot easier than using per-transaction data. A model of Stamp Duty is created and compared to receipts, establishing a multiplicative factor which may be used to account for bias in estimates. This leads to the conclusion that banded data is sufficient for estimating revenue, and can be used within models for predicting future revenues, at least for short timescales.

1. <https://goo.gl/MkqpXw> (Table 3.2; accessed 30/11/16. This is a National Statistic)

2. <https://goo.gl/1JC7Ce> (accessed 30/11/16)

3. <https://goo.gl/wBCrXh>

4. See paragraph 2.1 in: <https://goo.gl/ydijQJ> (accessed 30/11/16)

5. <https://goo.gl/8qDPvH> (accessed 30/11/16)

Defining Price Bands and Estimating the Number of Sales in Each Band

The Land Registry provides the number of houses sold in a region within the following price bands:

- Under £10,000
- £10,000 to £20,000
- £20,001 to £30,000
- £30,001 to £40,000
- £40,001 to £50,000
- £50,001 to £60,000
- £60,001 to £70,000
- £70,001 to £80,000
- £80,001 to £90,000
- £90,001 to £100,000
- £100,001 to £120,000
- £120,001 to £150,000
- £150,001 to £200,000
- £200,001 to £300,000
- £300,001 to £400,000
- £400,001 to £500,000
- £500,001 to £600,000
- £600,001 to £800,000
- £800,001 to £1,000,000
- £1,000,001 to £1,250,000
- £1,250,001 to £1,500,000
- £1,500,001 to £1,750,000
- £1,750,001 to £2,000,000
- £2,000,001 to £5,000,000
- £5,000,001 to £10,000,000
- £10,000,001 to £20,000,000
- Over £20,000,000

These data are available annually and quarterly. Unfortunately the annual data are based on a calendar year, whilst all receipt data from HMRC are based on the fiscal year. For this reason, quarterly datasets were created, and these coalesced to fiscal year boundaries. All dates quoted are for the fiscal year ending 31st March (so that the year 2005 is from 1st April 2004 to 31st March 2005).

There are a large number of price bands in the original dataset. The boundaries for these bands do not lie at the same values as the Stamp Duty band boundaries. The amount payable as dictated by current (2016) Stamp Duty policy⁶ can be seen in Table 1.

6. <https://goo.gl/EqeTgX>

Table 1: Current Stamp Duty Payable

Property or Lease Premium or Transfer Value	Rate
Up to £125,000	Zero
The next £125,000 (the portion from £125,001 to £250,000)	2%
The next £675,000 (the portion from £250,001 to £925,000)	5%
The next £575,000 (the portion from £925,001 to £1.5m)	10%
The remaining amount (the portion above £1.5m)	12%

Band boundaries were adjusted to represent those used for the Stamp Duty calculations. The new bands sum any bands completely contained within them, and add to that total a linear proportion of any Land Registry band which straddles one of the Stamp Duty boundaries. In this way, the contribution of the £125,000 to £150,000 band to the “up to £125,000” new band, is estimated by:

$$\frac{(125,000 - 120,000)}{(150,000 - 120,000)} \times (\text{Number in band } \pounds 120,001 \text{ to } \pounds 150,000) =$$

$$\frac{1}{3} \times (\text{Number in band } \pounds 120,001 \text{ to } \pounds 150,000).$$

The remaining 1/3 of the properties priced in the £120,001 to £150,000 band is put into the £125,001 to £250,000 band of properties. In this way all properties are allocated to a band, however there will be inaccuracy introduced by the linear split of the straddling bands. Over a reasonably short timescale, where the distribution of properties within the straddling bands is not expected to change too much, this bias will be systematic and is accounted for within a multiplying factor defined later.

Using the Bands to Estimate Revenues

Each of the new bands is given a monetary value, which is assumed by every property in that band. The value is taken as the mid-point of each band, so that the ‘up to £125,000’ band is allocated the value £67,500; the £125,000 to £250,000 band has the value £187,500; the £250,000 to £925,000 band has the value £587,500; and the £925,000 to £1.5m band has the value £1,212,500. The last band is more difficult, as it has no top value. Examining the original datasets suggests £3m as a reasonable average value.

The Stamp Duty payable at the indicative value is assigned to all of the properties in that band. These revenues are then summed. The Stamp Duty calculations are shown in Table 2.

Table 2: Calculation of Stamp Duty Payable

Band Values	Indicative Value for Band	Stamp Duty Calculation per Property in Band	Actual Stamp Duty per Property in Band (£)
Up to £125,000	£62,500	0	£0
£125,000 to £250,000	£187,500	$(187.5 - 125) \times 0.02$	£1,250
£250,000 to £925,000	£587,500	$(250 - 125) \times 0.02 + (587.5 - 250) \times 0.05$	£19,375
£925,000 to £1.5m	£1,212,500	$(250 - 125) \times 0.02 + (925 - 250) \times 0.05 + (1,212.5 - 925) \times 0.1$	£65,000
Over £1.5m	£3m	$(250 - 125) \times 0.02 + (925 - 250) \times 0.05 + (1,500 - 925) \times 0.1 + (3,000 - 1,500) \times 0.12$	£273,750,000

The sum of (Stamp Duty per property × Number of properties in band) over the five bands gives an estimate of the total Stamp Duty receipt.

The last step is to convert from nominal to real values, which effectively gives the equivalent of each revenue in 2016 prices. The GDP deflators used are defined in the OBR forecasts for the 2016 Autumn Statement. The series also contains forecasts of deflators for the next five years – which are later used for the predictions.

This rather coarse model has obvious deficiencies: there is the coarse banding, and then the decision to assign an indicative value to each property (which effectively assumes that the distribution of property values above, and below that value, is symmetrical within the band).

To assess bias, the results for the last two years (the time this policy has been active) are considered as a proportion of actual real receipts. The comparison shows the actual values to be 94.9% and 93.2% of the estimates, which are similar. This is not surprising, as house prices will change relatively slowly in comparison to the size of all except the smallest bands. The errors introduced by the banding and indicative values are likely to change slowly. Therefore the estimated value will be in a similar proportion to the actual value within a “short” timescale. This in turn suggests that it is reasonable to use the average of the percentage errors over the last two years (94.1%) as a corrective factor. All estimates of Stamp Duty are calculated according to the banded methodology, then multiplying by 94.1% as a correction factor.

Predicting Revenue

The aim of this project is to predict Stamp Duty receipts, given assumptions on housing market activity. The housing market scenarios considered are broadly:

- Future behaviour will follow patterns of previous behaviour
- Future behaviour is held at 2016 values in some way
- There is a housing crash

These are considered by combining models of the percentage of sales over a given value, and models of the total number of sales. For each scenario,

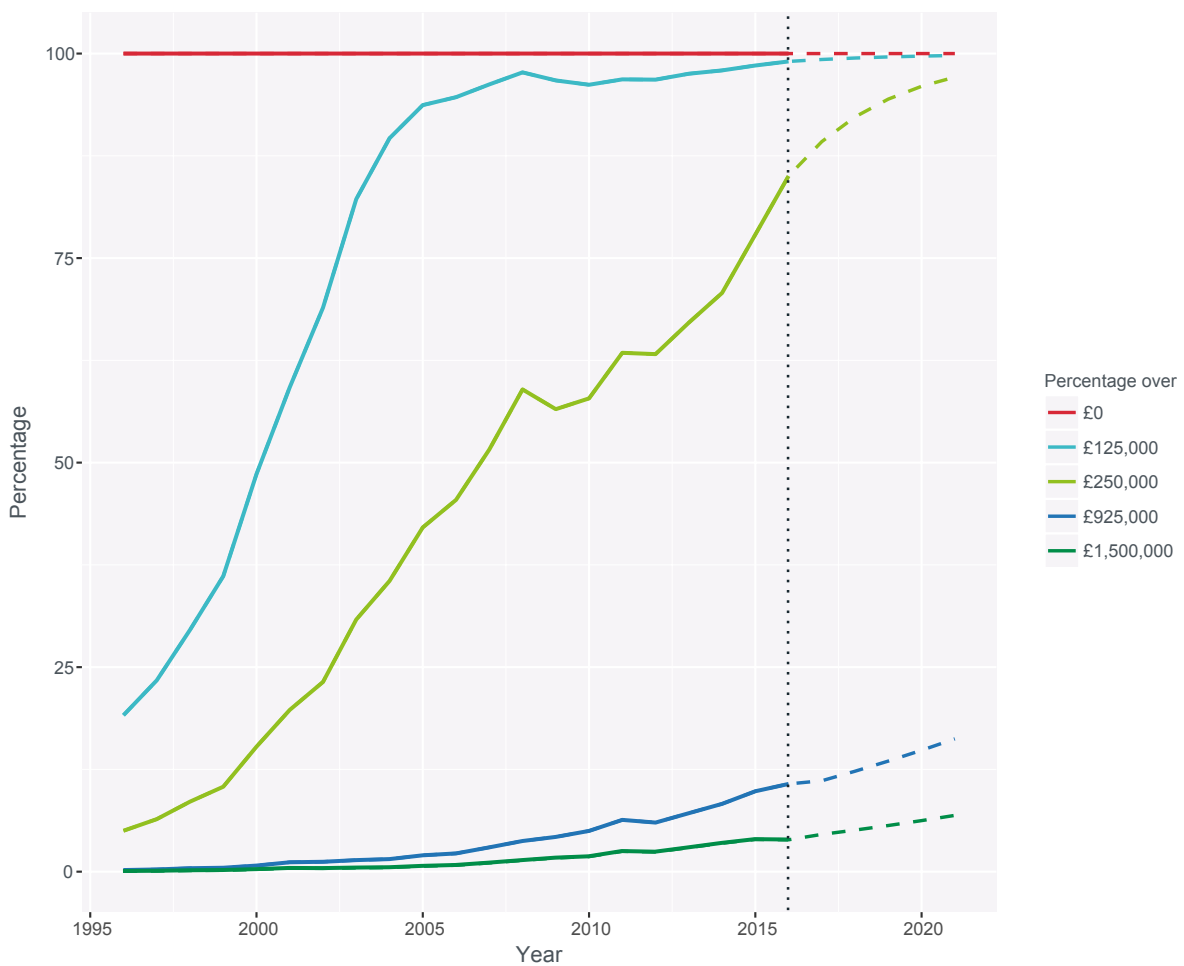
using the previously described Stamp Duty calculations will then give estimates of Stamp Duty revenue.
 These models are now described.

Prediction of Percentage of Properties above a Given Value

The percentage of properties sold above a given value is shown in Figure 1. The graph can be interpreted as follows. In London in 2016:

- About 98% of properties sold cost more than £125,000
- About 85% of properties cost more than £250,000
- And so on until: about 4% of properties cost more than £1.5m

Figure 1
 Percentage of (Number of) Private Property Purchases over Each Band Boundary
 (Actual and predicted)

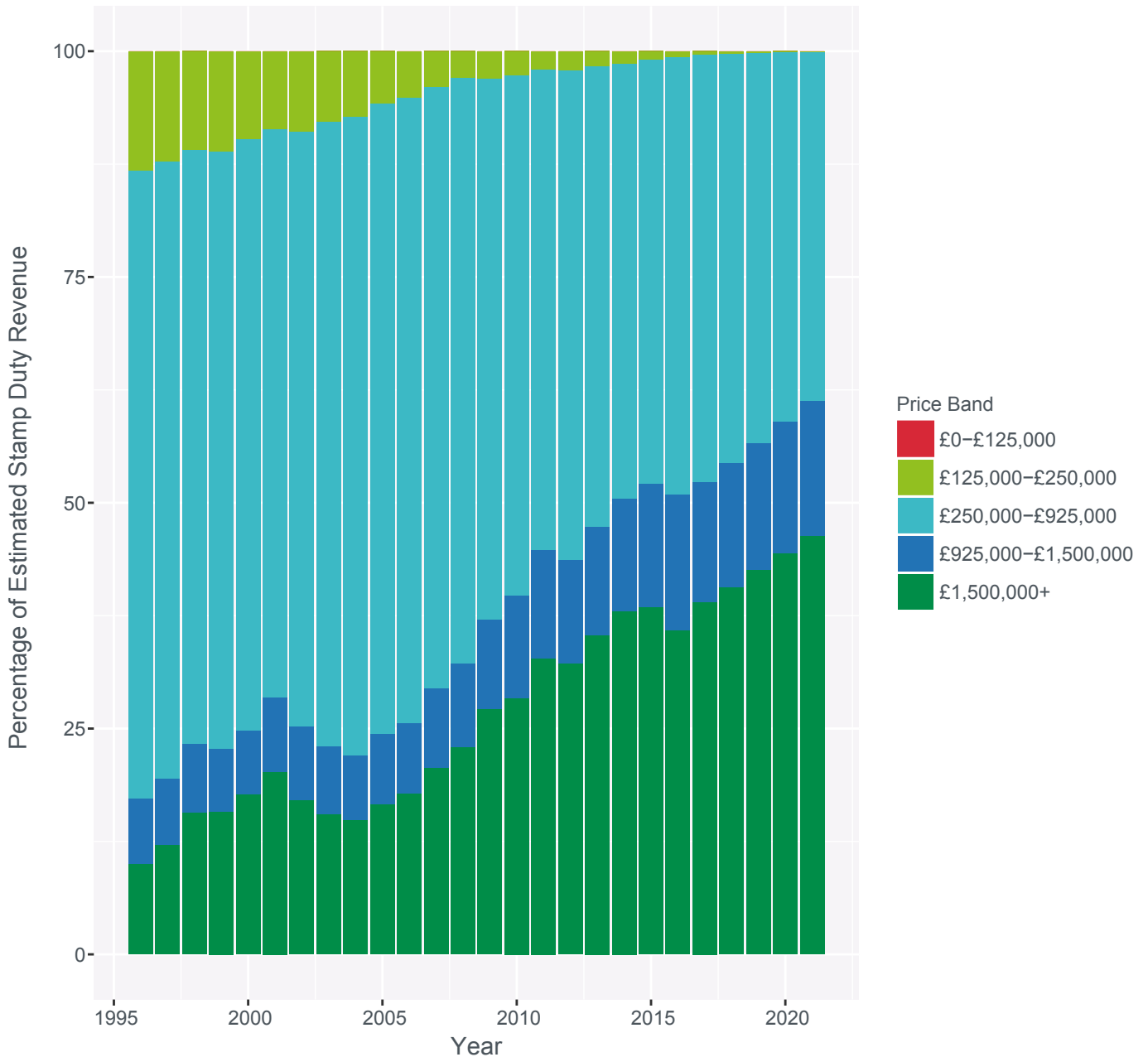


This graph shows relative stability up to 2016. This stable behaviour forms

a good basis for the modelling and prediction of future behaviour – as shown above, and described in detail below.

Figure 2

Percentage of Estimated Stamp Duty for Sales in Each Price Band



Based on current Stamp Duty policy, the proportion of the tax which is due to each price band is shown in Figure 2, with projections based on previous behaviour. In recent years receipts are dominated by the higher price bands: in 2016, property sales over £925,000 give rise to about 50% of Stamp Duty receipt (they comprise about 11% of total sales). Whilst the actual percentage

of sales in these bands looks relatively small in Figure 1, this suggests that models for the percentage of sales valued over £925,000 (and over £1.5m) will be very important in predicting Stamp Duty receipts.

This also emphasises the importance of the high-end market for Stamp Duty revenues.

Models Based on Prior Behaviour

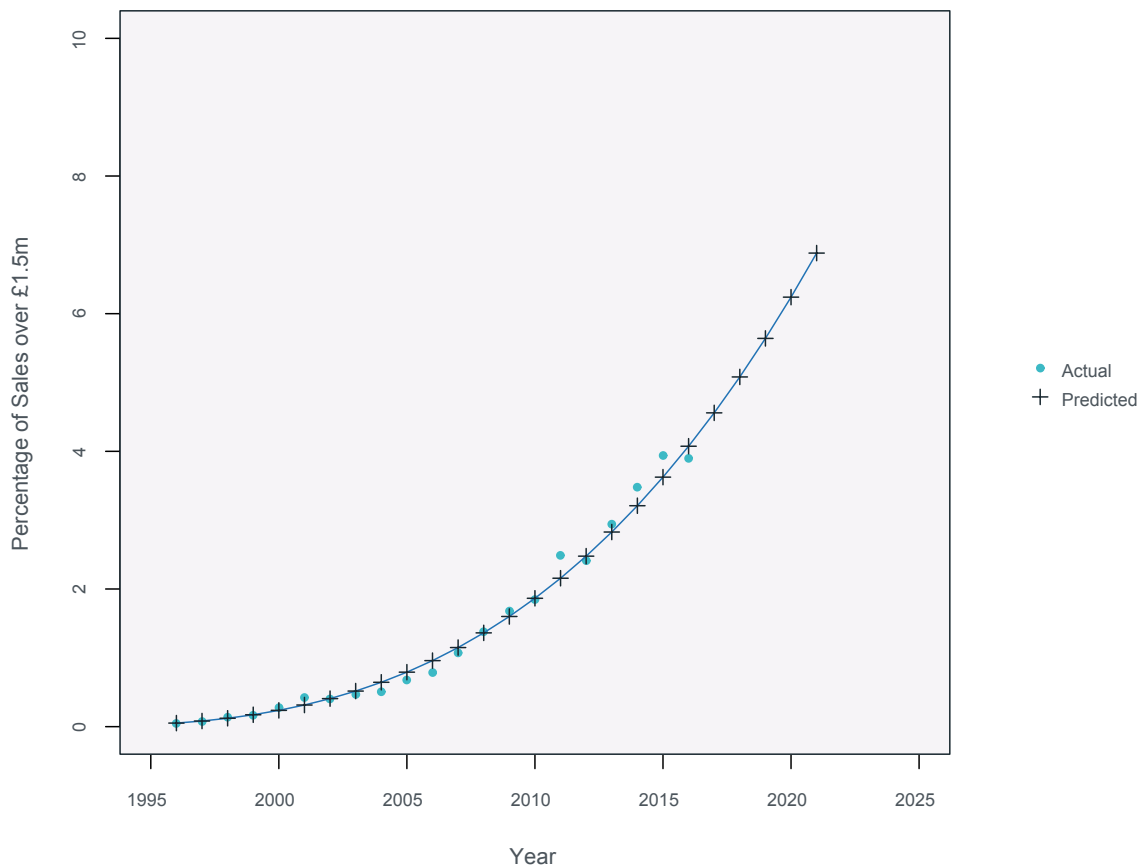
Each percentage series is modelled independently. The lines for 'over £1.5m' and 'over £925,000' use a least-squares regression of the log of the percentage, against the log of the year. This is sometimes called an elasticity model.

The formula for the 'over £1.5m' model is:

$$\text{Percentage of sales over } \pounds 1.5\text{m} = e^{-8.300978} \times (\text{year} - 1990)^{2.978939}$$

The model is compared to actual values in Figure 3. Adjusted $r^2 = 99\%$ (2sf), indicating a good fit.

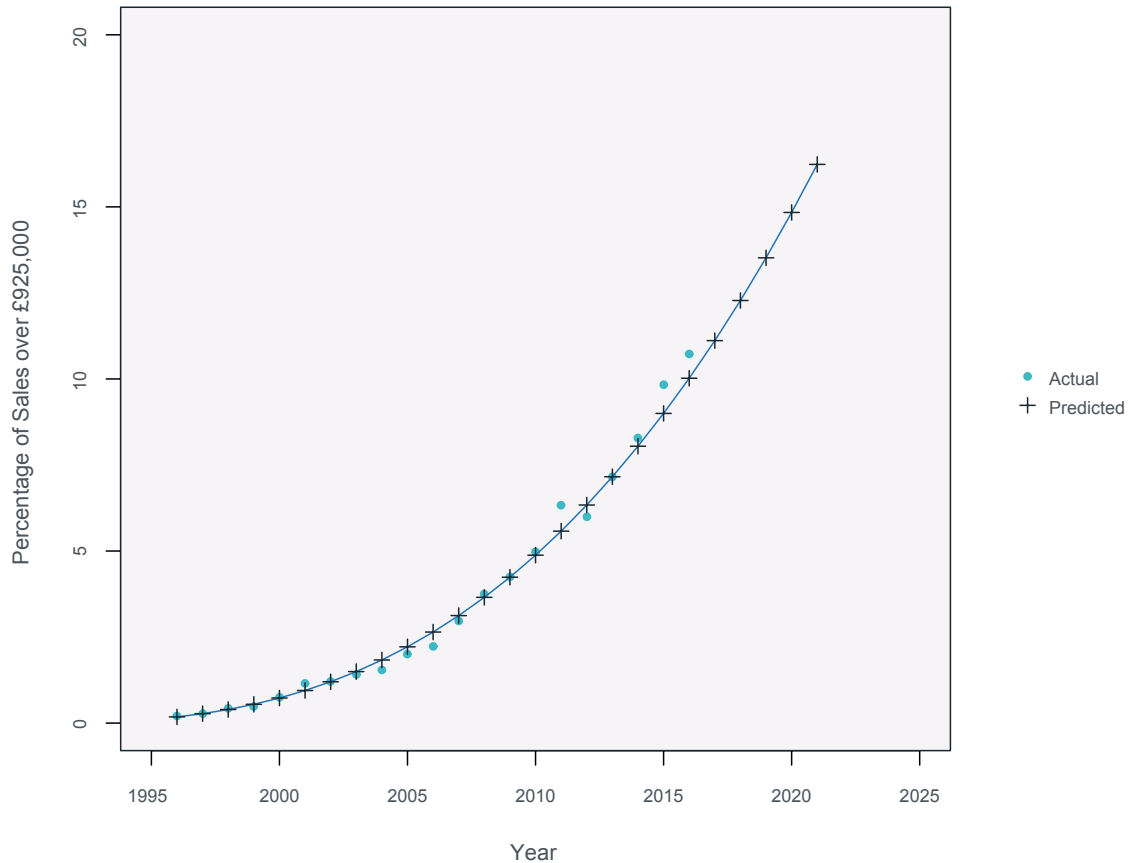
Figure 3
Actual and Predicted Percentage of Sales over £1.5m



A similar methodology for the percentage of properties over £925,000 gives the equation:

$$\text{Percentage of sales over } \pounds 925,000 = e^{-6.633283} \times (\text{year} - 1990)^{2.743282}$$

Figure 4
Actual and Predicted Percentage of Sales over £925,000



The model is compared to the actual percentage of sales in Figure 4. Again, Adjusted $r^2 = 99\%$ (2sf).

The next two lines, the percentage of sales 'over £250,000' and 'over £125,000', are modelled as an exponential decay towards 100% (as shown in Figure 1). The decay parameter is determined by previous performance.

In this way, for the percentage over £250,000 the model is:

$$\begin{aligned} \text{This year's percentage} \\ = (\text{Last year's percentage}) + 0.2809342 \times (100 - \text{Last year's percentage}); \end{aligned}$$

And for the percentage of sales over £125,000 the model is:

$$\begin{aligned} \text{This year's percentage} \\ = (\text{Last year percentage}) + 0.2468823 \times (100 - \text{Last year's percentage}). \end{aligned}$$

The last line shown in Figure 1, the percentage of properties 'over £0', is

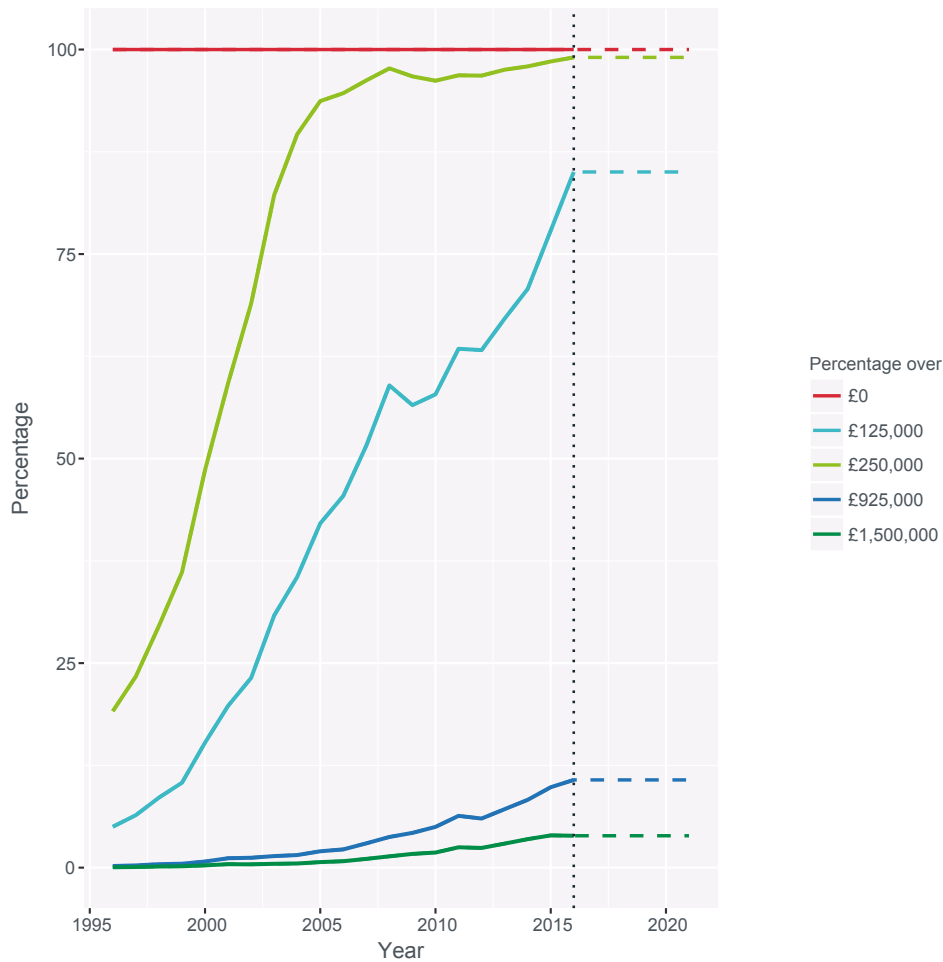
fixed at 100%.

Actual data, and predictions from the four models for the next five years, are shown in Figure 1.

Model Holding Behaviour Flat

Figure 5

Percentage of (Number of) Private Property Purchases over Each Band Boundary
(Flat at 2016 values)



Again each percentage line is modelled separately. As the title suggests, for this scenario behaviour is considered to remain at 2016 values. The percentages are shown in Figure 5.

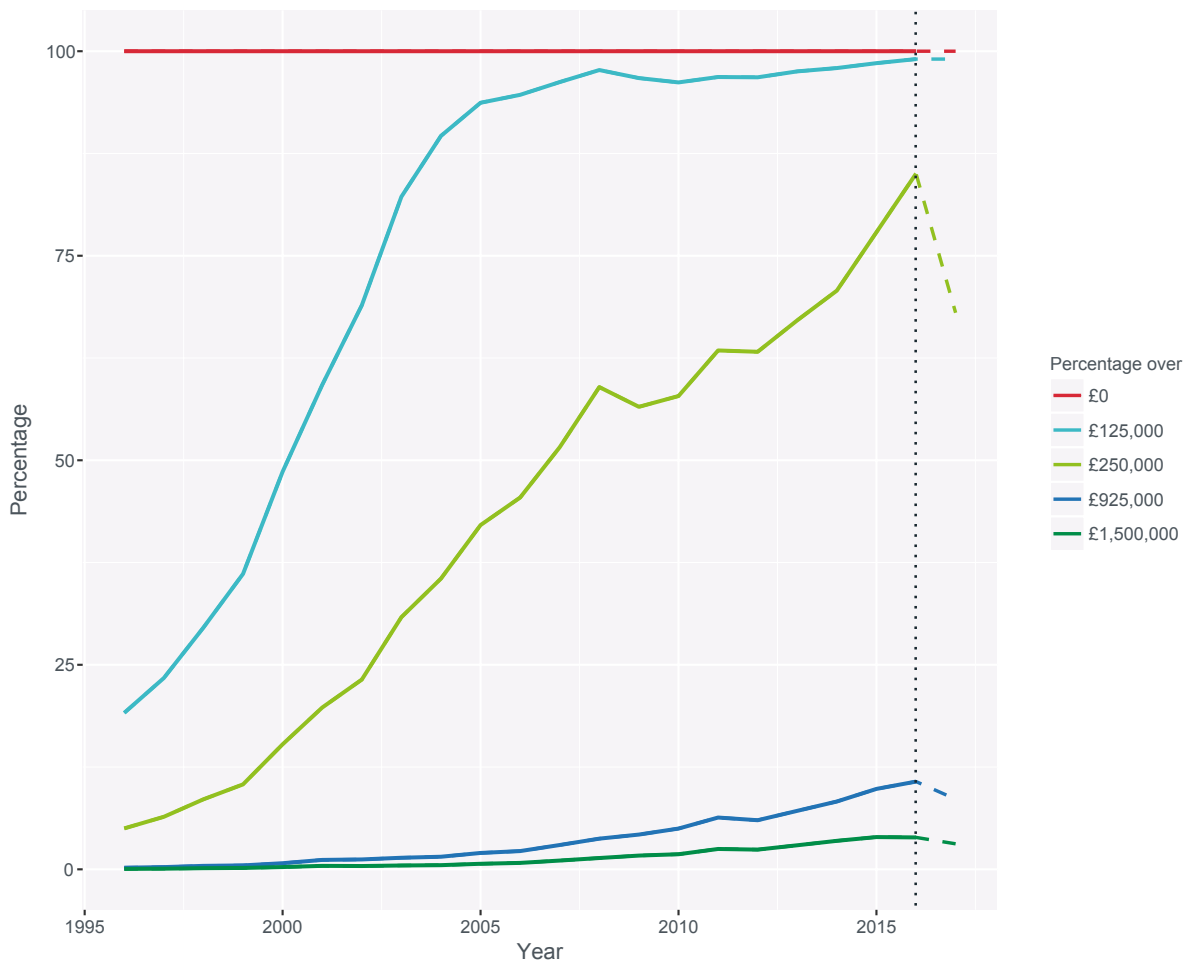
Models of a Crash Scenario

There is no formal definition of a crash which constrains house prices to a specific level of decrease; the most recent shock generally accepted as a house price crash occurred in 2008/9, and this can be a useful historical example. At that time in London, prices at the top end of the market remained strong, whilst lower prices tended to be pushed down.

A crash scenario is modelled here in order to try and understand what might happen to future Stamp Duty revenues during a housing crash. A dip in prices is modelled by the percentage of properties over a given value decreasing by 20% (so that $\frac{1}{5}$ of the percentage of properties above £1.5m drop below £1.5m, and so on). This is implemented for the 'over £1.5m', 'over £925,000', and 'over £250,000' price bands. The 'over £125,000' band is left as it is currently. This models all house prices, except the very lowest, decreasing. The resulting cumulative percentages are shown in Figure 6.

Figure 6

Percentage of (Number of) Private Property Purchases over Each Band Boundary
(Crash scenario)



The second dimension in modelling the housing market is the total number of properties which are sold. Again, there are three basic models: one based on prior behaviour, one which is flat, and one which models a crash.

Model Based on Prior Behaviour

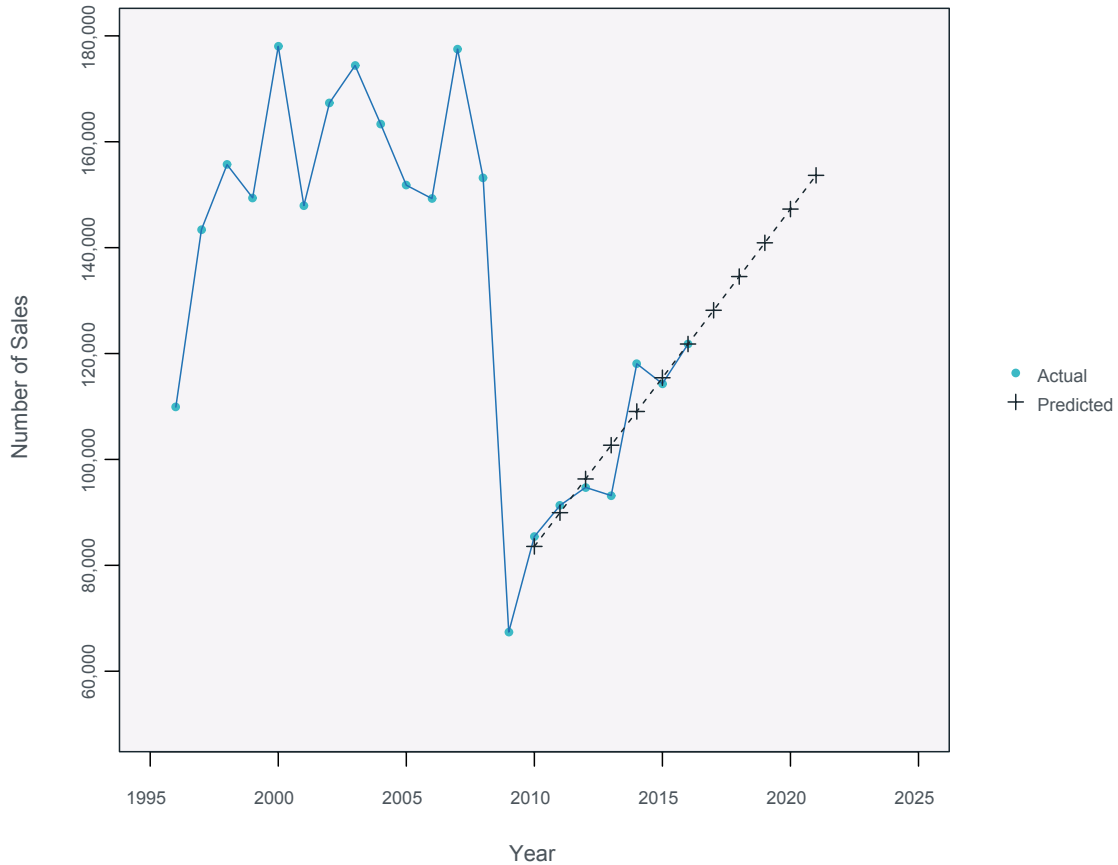
The total number of sales is modelled by fitting a linear least-squares regression model to data since 2010. This was chosen as it is after the crash of 2008,

and shows a relatively good trend to try and model. The model is:

$$\text{Number of sales} = -12,723,001 + (6,371 \times \text{Year}).$$

Figure 7

Total Number of Property Sales, Actual and Predicted (Based on Prior Behaviour)



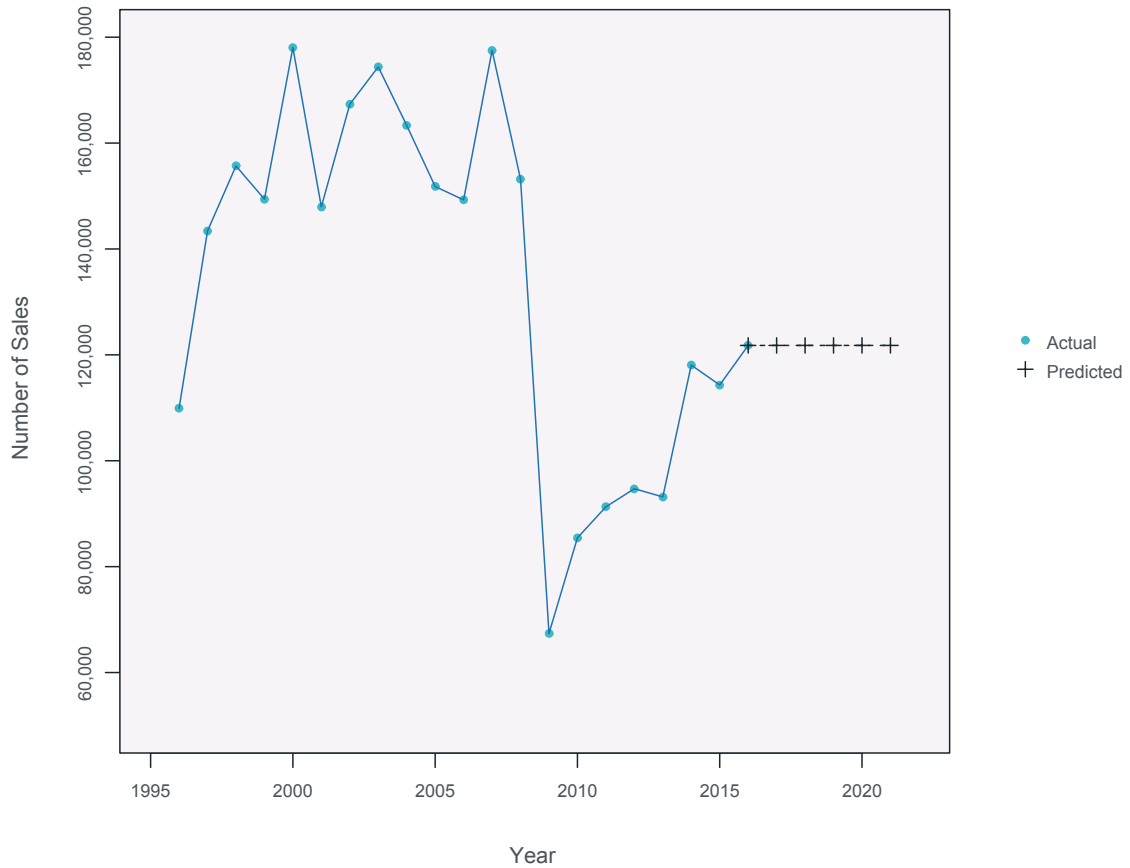
This is shown in Figure 7, and suggests that in each year there are an extra 6,371 sales compared to the previous year. A concern of this method is that it may predict a large number of sales which is completely unreasonable after a few years. Figure 7 forecasts the total number of sales to approach the levels of the early years of the century. This does not seem unrealistic, as the market has previously been able to sustain that level of activity. Extrapolating the model much beyond the five-year time-frame considered here, however, might raise concern.

Model Holding Behaviour Flat

The total number of sales is held constant at the 2016 level. This is shown in Figure 8.

Figure 8

Total Number of Property Sales, Actual and Predicted (Prediction Flat at 2016 Value)



Model of a Crash Scenario

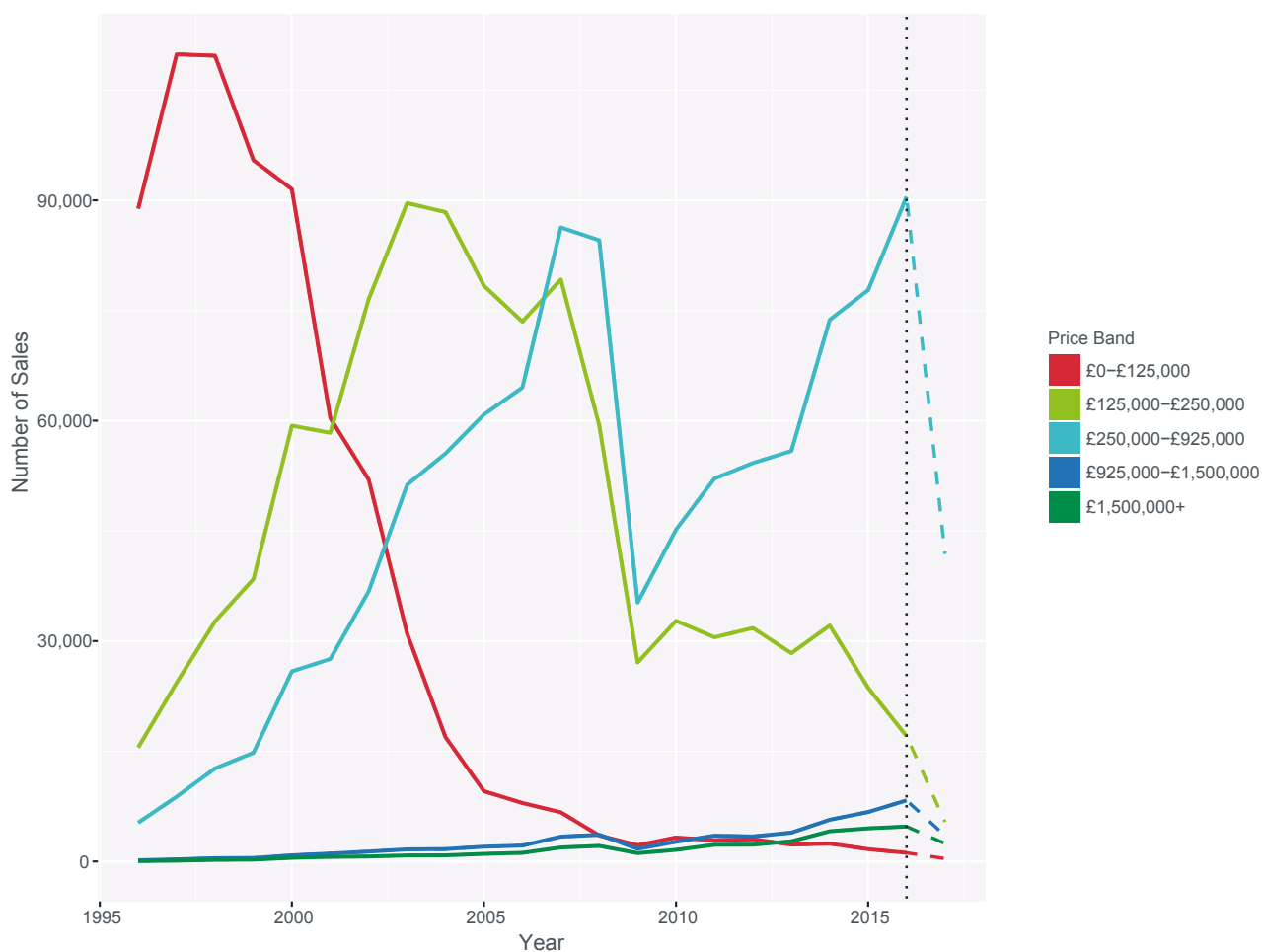
The crash in 2008/9 saw the total number of sales fall by 44% between 2008 and 2009. In our crash scenario the total number of sales is modelled to reduce by a similar amount. As it really is reaching too far into the realms of uncertainty to model recovery from a crash, only one year of information is predicted.

With the total number of sales in 2017 decreasing to 44% of the total number in 2016, it is interesting to look at the number of sales in each price band. This example uses the price model based on previous behaviour.

Figure 9

Number of Property Sales in Each Price Band

(Original data with predictions for crash scenario)



The crash of sales is shown in Figure 9. This shows the *number* of properties sold in each of the bands considered. This is the first plot of this type: it shows how the number of houses sold has changed in value. In the late 90s, the majority cost under £125,000. In 2003/4, the majority of sales were in the £125,000 to £250,000 band. In 2007 the £250,000 to £925,000 band became most popular, which it has remained to date. The graph also demonstrates the advantage of modelling percentages over a given value, rather than the numbers directly.

Figure 9 also shows the effect of the 2008/9 crash, with the large drop in properties valued £125,000 to £925,000. The crash scenario created for Figure 9, with only the number of sales crashing and the percentage in each price band predicted from previous behaviour, could broadly reflect the higher-price-band behaviour of the 2008/9 crash.

Putting the Models Together

The two aspects of the housing market, price-band percentages and total number of sales, are now considered together. There are nine possible models, each reflecting a different behaviour of the housing market. Table 3 shows the ones which are detailed in this report.

Table 3: Nine Possible Models

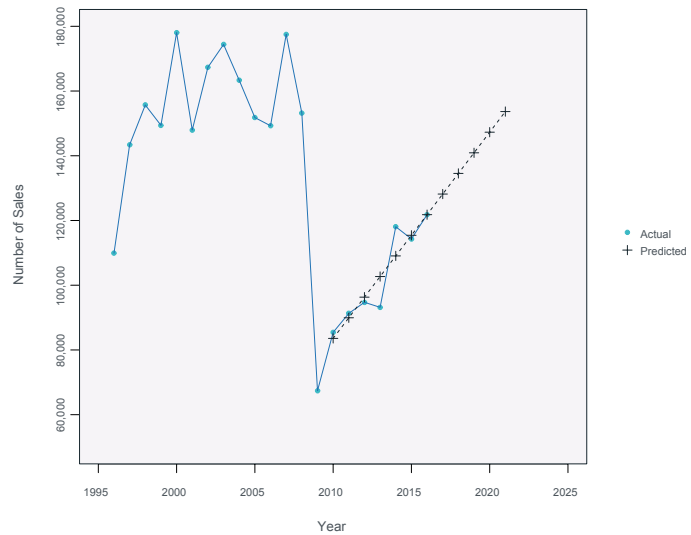
	Price-Band Percentages			
	Scenario	Predicted from Previous	Flat	Crash
Total Number of Sales	Predicted from Previous	X	X	-
	Flat	X	X	-
	Crash	X	X	X

For each non-crash scenario, there is a one-page summary showing a graph of the price-bands, the total number of sales, and predicted revenue. There is also a table collecting predicted revenues from the different scenarios. The crash scenarios are based on a one-year forecast, and gathered together.

Total Sales Predicted from Previous Behaviour, Cumulative Percentages Predicted from Previous Behaviour

Total Sales per annum since 1996, with projection (in blue) from the trend since 2010.

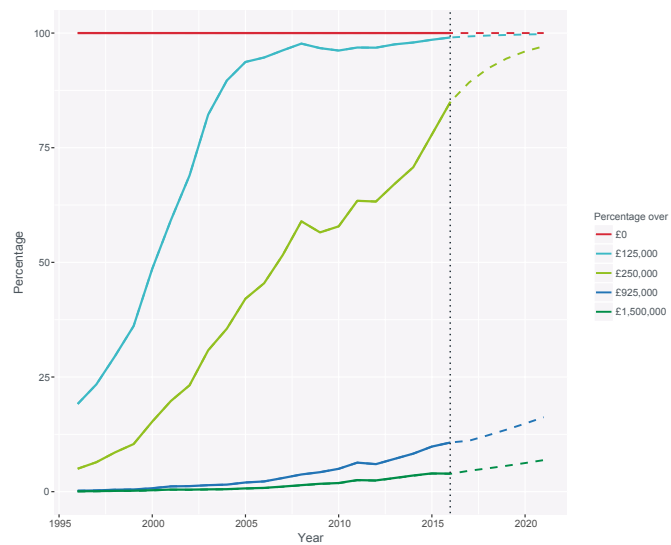
Figure 7
Total Number of Property Sales, Actual and Predicted (Based on Prior Behaviour)



Percentage of houses sold over a given value (defined by the 2016 Stamp Duty bands).

The numbers in the key show the bottom of the band.

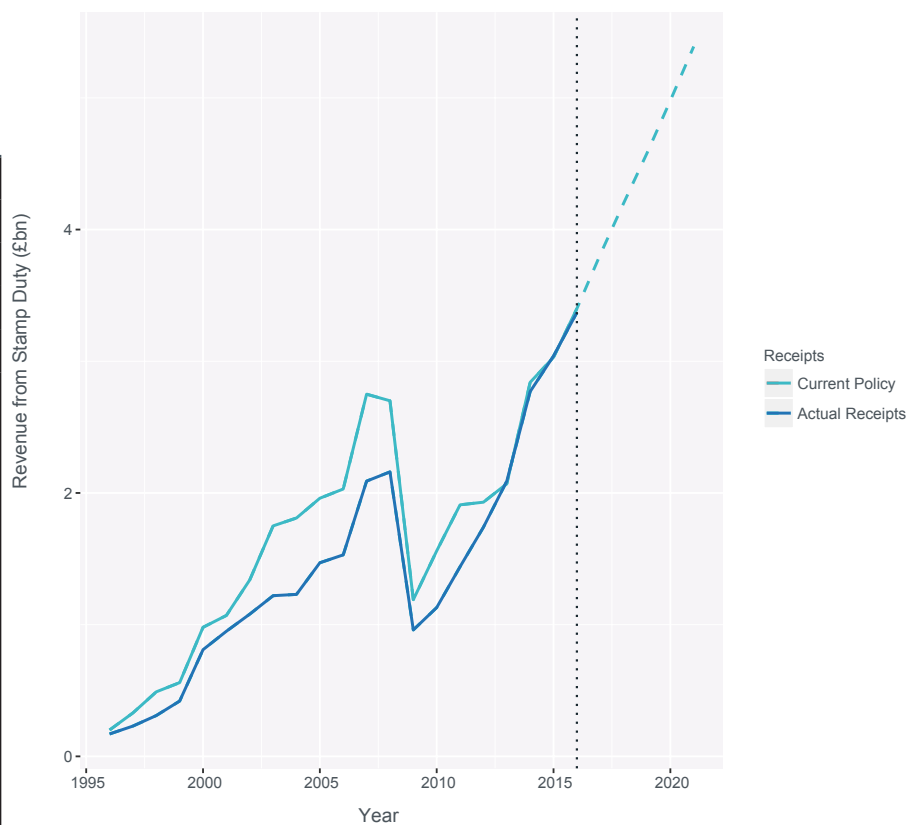
Figure 1
Percentage of (Number of) Private Property Purchases over Each Band Boundary (Actual and predicted)



Predicted revenues in £bn at 2016 prices. The blue line shows the actual receipts due to the policy in place at that time, the red line shows an estimate of revenues under the 2016 policy.

Year	Revenue
2017	£3.8bn
2018	£4.2bn
2019	£4.57bn
2020	£4.97bn
2021	£5.38bn

Total Stamp Duty Revenue from Private Property Purchases
(Current Policy and Actual Receipts)

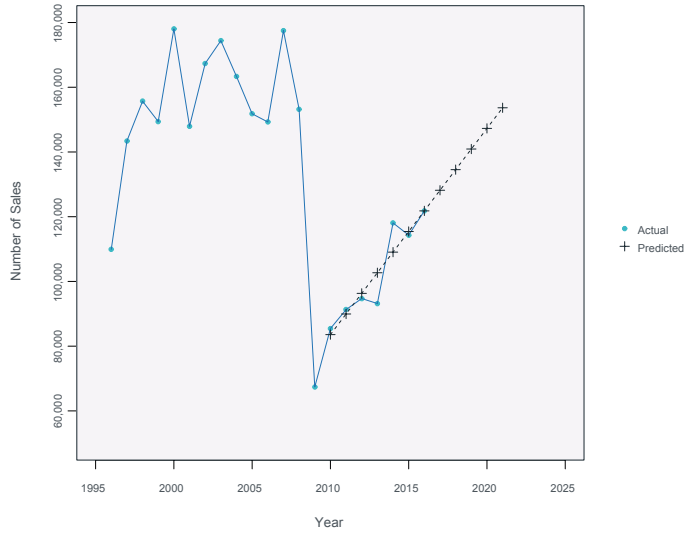


Total Sales Predicted from Previous Behaviour; Cumulative Percentages Stay Flat at 2016 Values

(Sales continue to increase, but prices generally stay in the same proportions)

Total Sales per annum since 1996, with projection (in blue) from the trend since 2010.

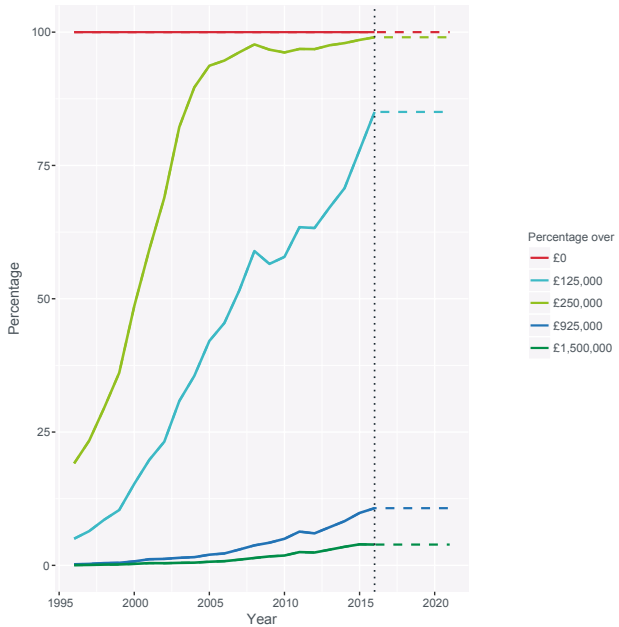
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Total Number of Property Sales, Actual and Predicted (Based on Prior Behaviour)



Percentage of houses sold over a given value (defined by the 2016 Stamp Duty bands).

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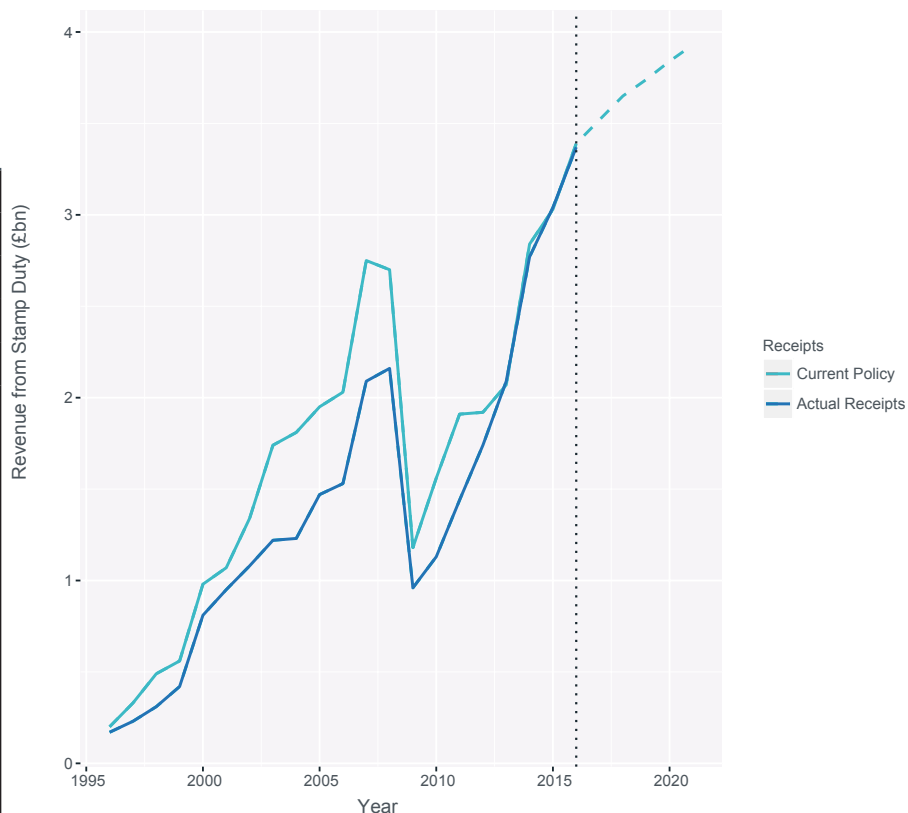
Figure 5
Percentage of (Number of) Private Property Purchases over Each Band Boundary (Flat at 2016 values)



Predicted revenues in £bn at 2016 prices. The blue line shows the actual receipts due to the policy in place at that time, the red line shows an estimate of revenues under the 2016 policy.

Year	Revenue
2017	£3.52bn
2018	£3.65bn
2019	£3.74bn
2020	£3.84bn
2021	£3.93bn

Total Stamp Duty Revenue from Private Property Purchases
(Current Policy and Actual Receipts)

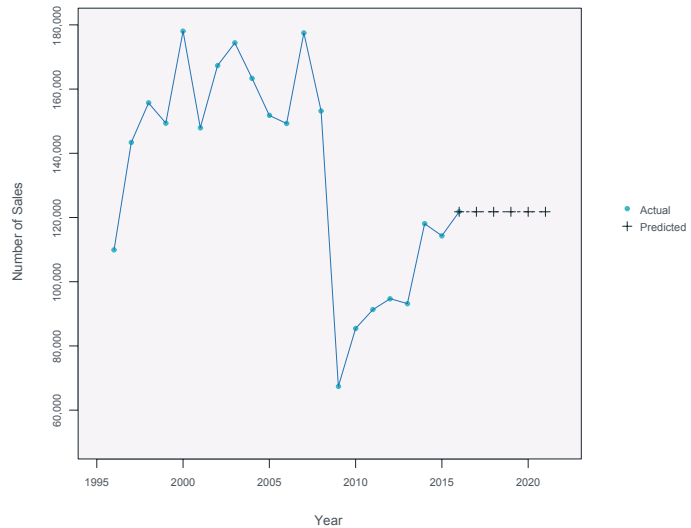


Total Sales Remain Flat; Cumulative Percentages Predicted from Previous Behaviour

(No more houses are sold, but prices increase in line with previous trends)

Total Sales per annum since 1996, with projection held at 2016 value.

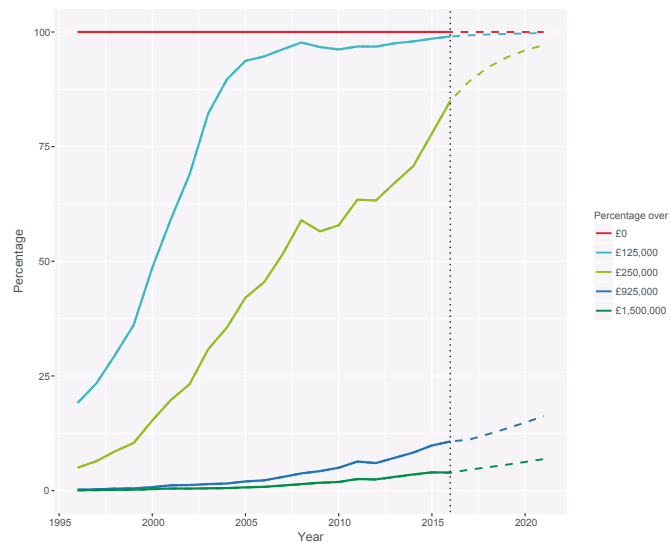
Figure 8
Total Number of Property Sales, Actual and Predicted (Prediction Flat at 2016 Value)



Percentage of houses sold over a given value (defined by the 2016 Stamp Duty bands).

The numbers in the key show the bottom of the band.

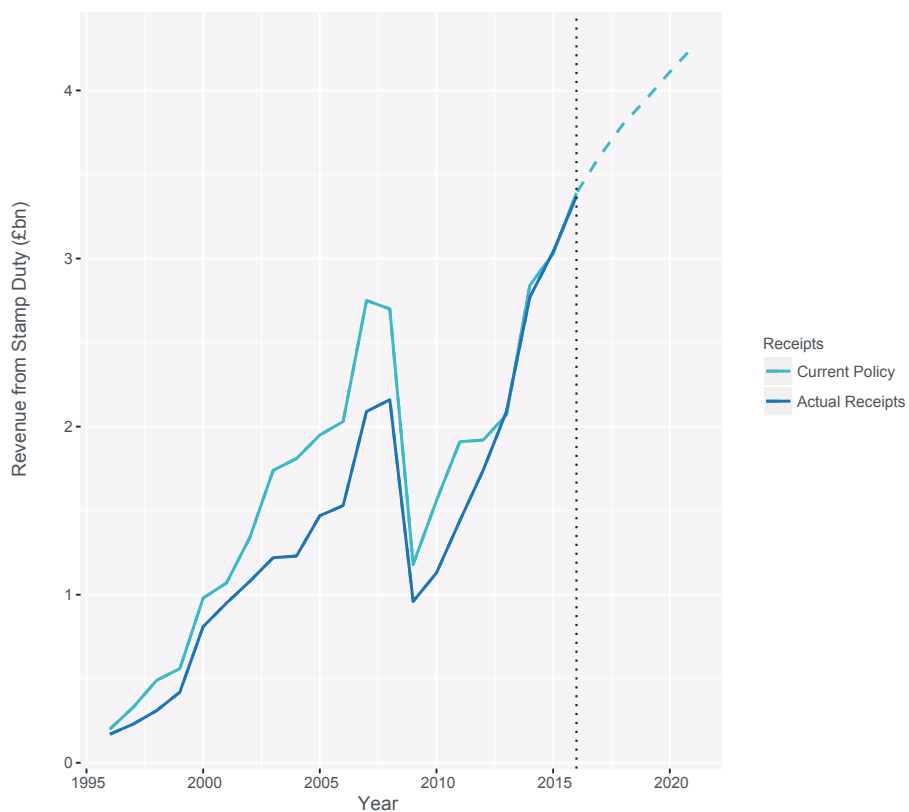
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Predicted revenues in £bn at 2016 prices. The blue line shows the actual receipts due to the policy in place at that time, the red line shows an estimate of revenues under the 2016 policy.

Year	Revenue
2017	£3.61bn
2018	£3.8bn
2019	£3.95bn
2020	£4.11bn
2021	£4.26bn

Total Stamp Duty Revenue from Private Property Purchases
(Current Policy and Actual Receipts)

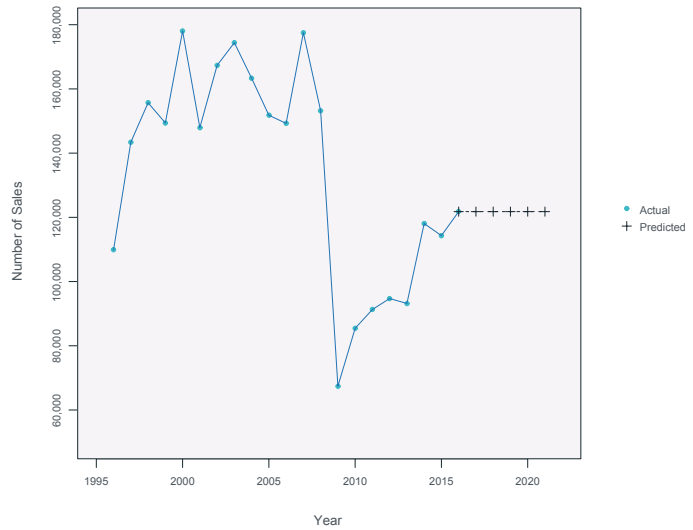


Total Sales Flat; Cumulative Percentages Flat

(Both the number of sales, and the price of those sales, are stagnant)

Total Sales per annum since 1996, with projection.

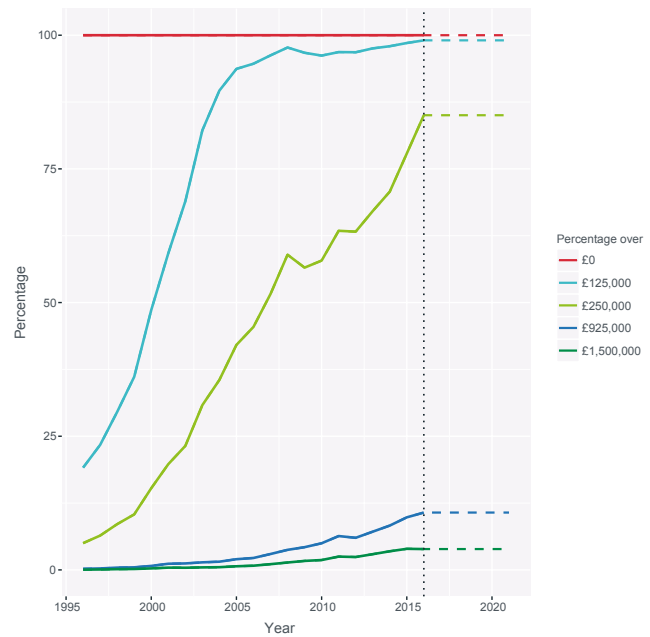
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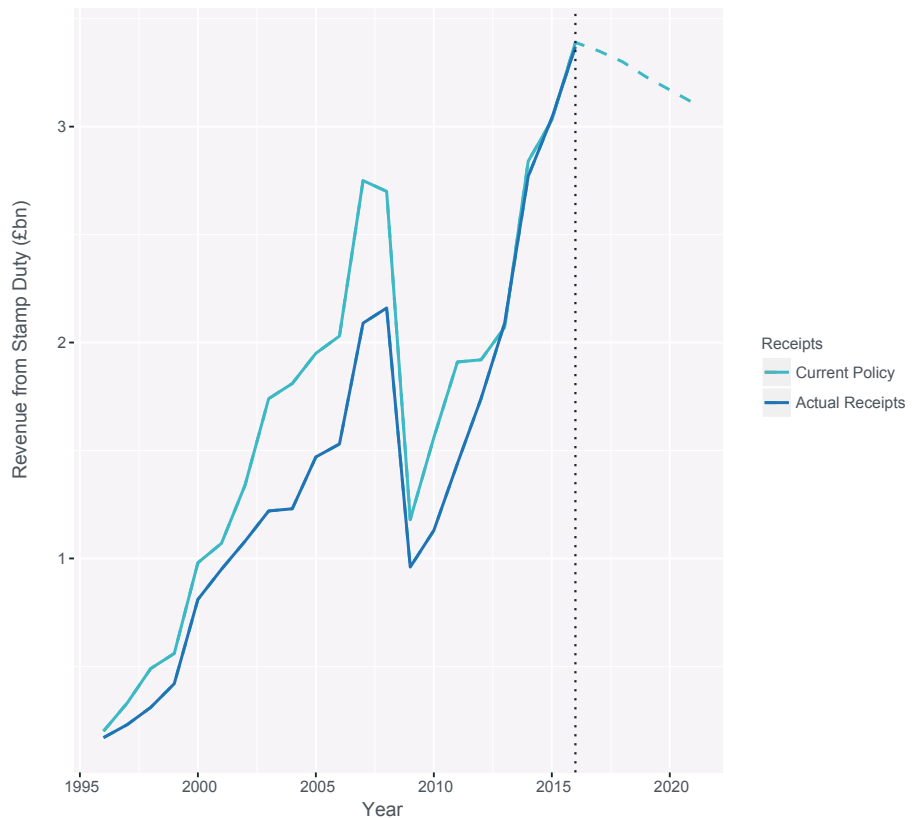
Percentage of (Number of) Private Property Purchases over Each Band Boundary



Predicted revenues in £bn at 2016 prices. The blue line shows the actual receipts due to the policy in place at that time, the red line shows an estimate of revenues under the 2016 policy. (Projected revenue decreases as it is at 2016 prices).

Year	Revenue
2017	£3.35bn
2018	£3.3bn
2019	£3.23bn
2020	£3.17bn
2021	£3.11bn

Total Stamp Duty Revenue from Private Property Purchases
(Current Policy and Actual Receipts)



Crash Scenarios

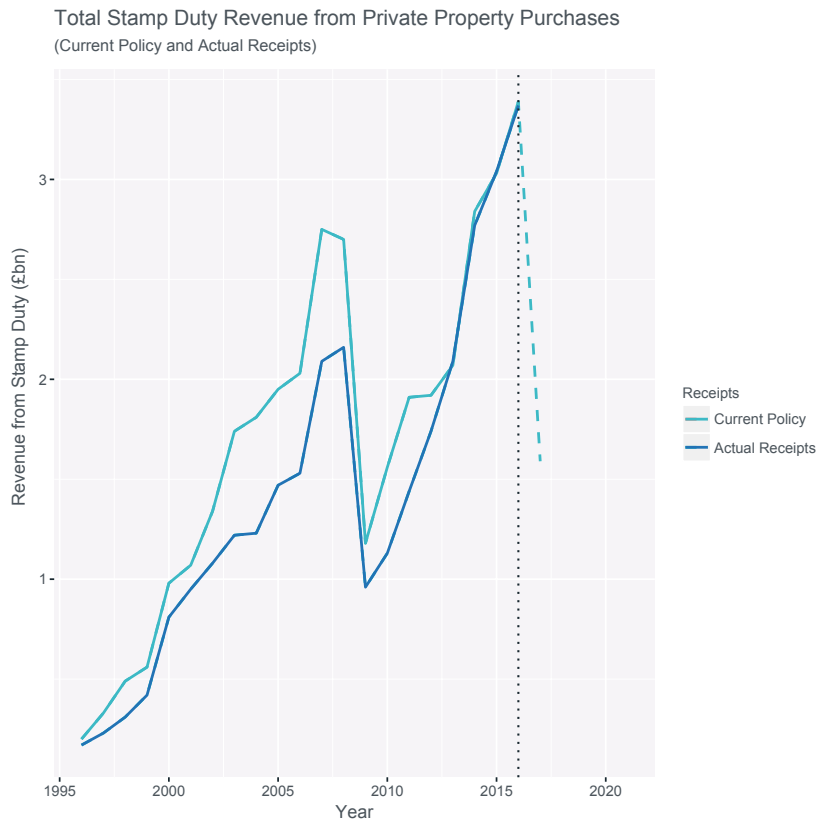
Total sales decrease by the same percentage as the 2008/09 decrease (the number of sales in 2009 is about 44% of the number in 2008).

Percentages within each price band are:

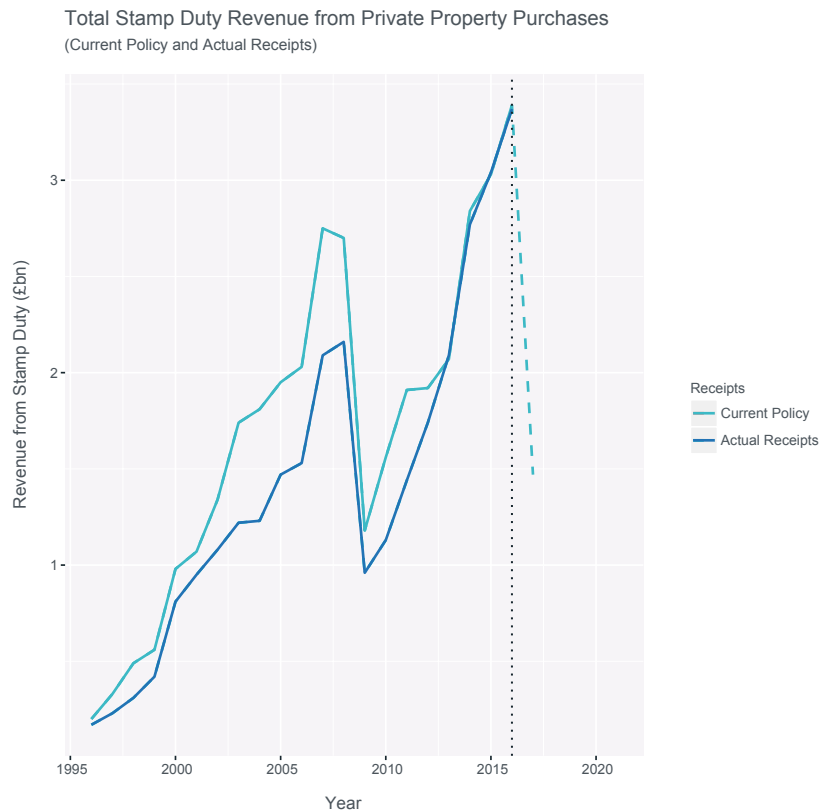
- Predicted from previous behaviour
- Flat
- Bands from £250,000 upwards decrease in size by 20%. The percentage costing above £125,000 remains constant.

In each scenario, only one year is modelled.

Percentages are predicted from previous behaviour. 2017 revenues are £1.59bn, about 47% of 2016 revenues.

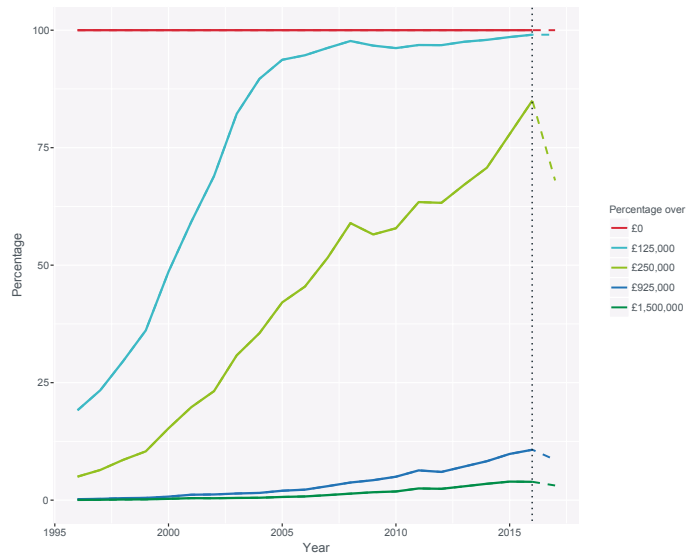


Cumulative percentages are flat at the 2016 values. 2017 revenues are £1.47bn, about 43% of 2016 revenues.



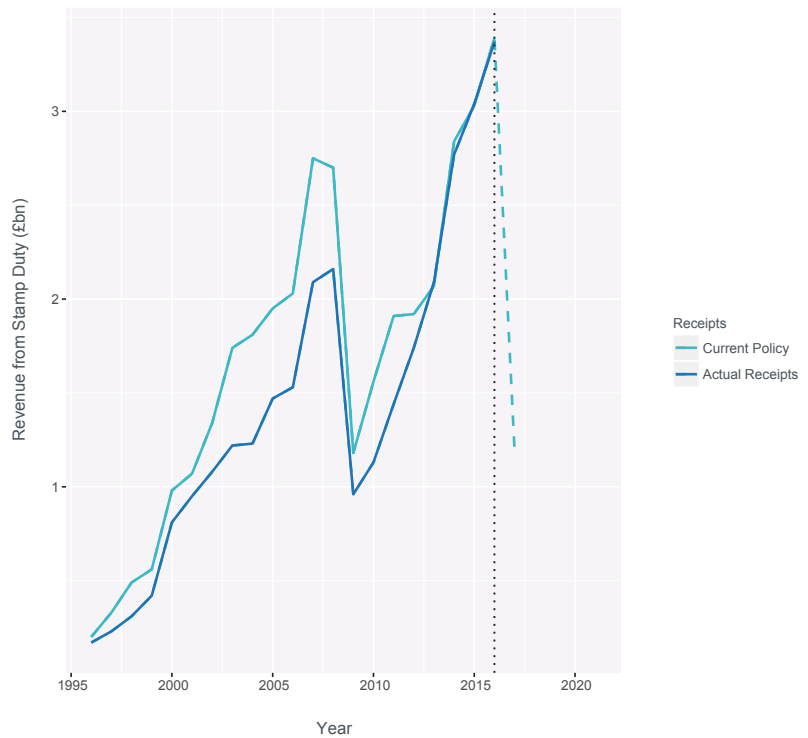
Cumulative percentages drop by 20% for bands £250,000 upwards. The percentage above £125,000 remains constant (as shown here). It is interesting to compare this to behaviour in 2008/09.

Figure 6
Percentage of (Number of) Private Property Purchases over Each Band Boundary
(Crash scenario)



2017 revenues are £1.19bn, about 35% of 2016 revenues.

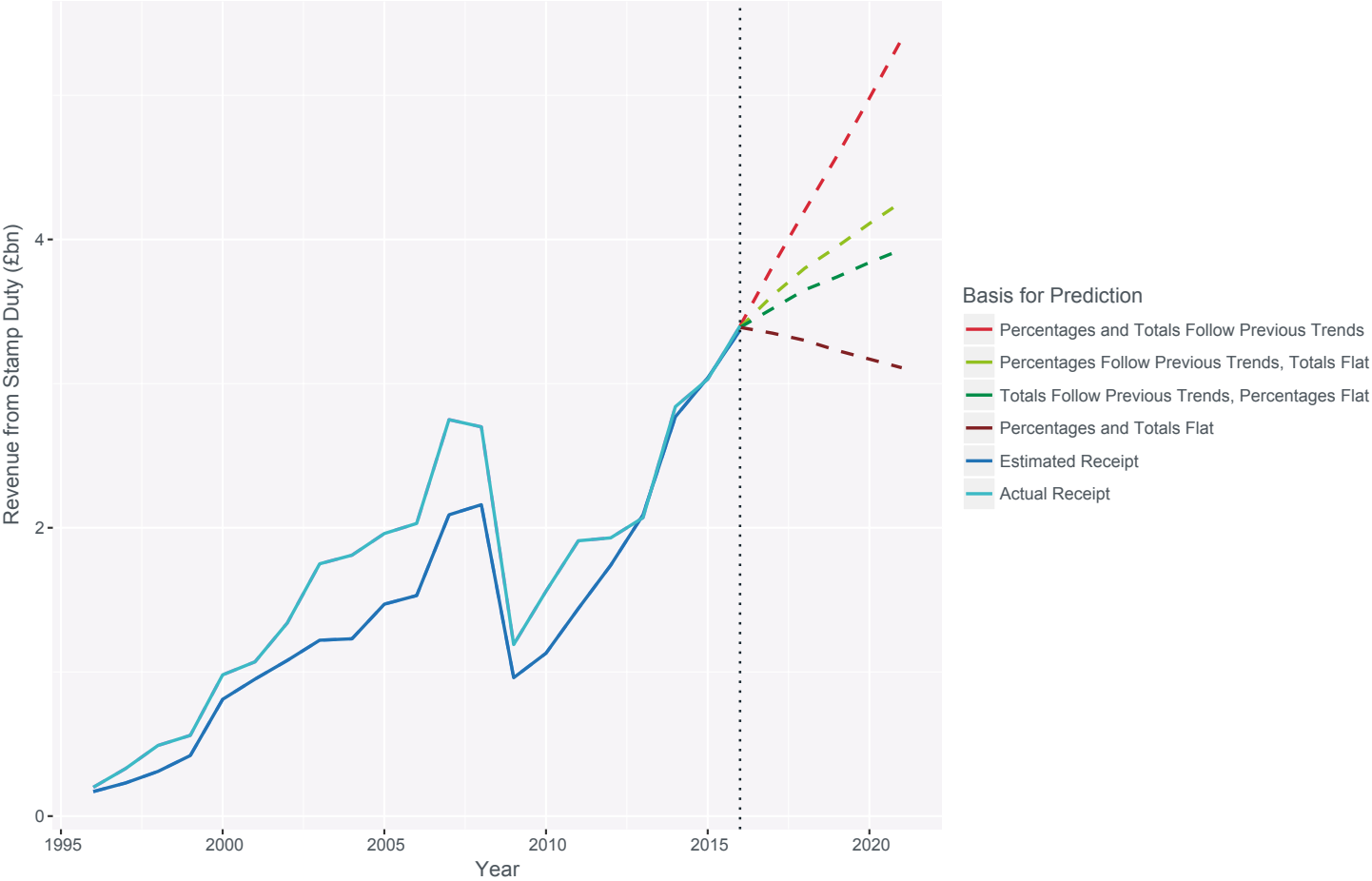
Total Stamp Duty Revenue from Private Property Purchases
(Current Policy and Actual Receipts)



Comparison of Predictions

Non-Crash Scenarios

Figure 10
 Predicted Revenue from the Four Non-Crash Scenarios



For ease, the four non-crash scenarios are gathered together in Figure 10. The actual Stamp Duty revenue, estimates from the 2016 policy, and forecasts from the four non-crash scenarios are shown in Table 4.

Table 4: Stamp Duty Revenue: Data and Predictions for the Four Non-Crash Scenarios

Year	Forecasts					Actual Receipts	Estimated Receipts, 2016 Policy
	Prediction of Percentages	Previous	Previous	Flat	Flat		
	Prediction of Total Number of Sales	Previous	Flat	Previous	Flat		
1996		-	-	-	-	0.17	0.2
1997		-	-	-	-	0.23	0.33
1998		-	-	-	-	0.31	0.49
1999		-	-	-	-	0.42	0.56
2000		-	-	-	-	0.81	0.98
2001		-	-	-	-	0.95	1.07
2002		-	-	-	-	1.08	1.34
2003		-	-	-	-	1.22	1.74
2004		-	-	-	-	1.23	1.81
2005		-	-	-	-	1.47	1.95
2006		-	-	-	-	1.53	2.03
2007		-	-	-	-	2.09	2.75
2008		-	-	-	-	2.16	2.7
2009		-	-	-	-	0.96	1.18
2010		-	-	-	-	1.13	1.56
2011		-	-	-	-	1.44	1.91
2012		-	-	-	-	1.74	1.92
2013		-	-	-	-	2.09	2.07
2014		-	-	-	-	2.77	2.84
2015		-	-	-	-	3.04	3.03
2016		3.39	3.39	3.39	3.39	3.37	3.39
2017		3.8	3.61	3.52	3.35	-	-
2018		4.2	3.8	3.65	3.3	-	-
2019		4.57	3.95	3.74	3.23	-	-
2020		4.97	4.11	3.84	3.17	-	-
2021		5.38	4.26	3.93	3.11	-	-

Conclusion

It is possible to model Stamp Duty Land Tax receipts in London by modelling the housing market in London and estimating the associated Stamp Duty revenue under current policy. The housing market can be modelled in two parts: the total number of sales, and the cumulative percentage of the number of properties in each Stamp Duty band.

Although accounting for a smaller percentage of sales, the proportion of Stamp Duty revenue from properties costing over £925,000 is approaching half of the total revenue. Therefore modelling the higher-priced properties well is very important. The cumulative percentage of highly-priced property is amenable to an elasticity model, showing very good fit even through the housing recession of 2008/09. This trend is direct to continue, enabling straightforward estimation of revenue if the housing market continues as previously.

Separating the housing market into two parts enables a number of scenarios to be modelled, with the number of sales and the price of those sales being allowed to vary independently. This is a flexible model, allowing the number of sales to stagnate, or the price of those sales to stagnate, or both. At 2016 prices, revenues variously increase over the next five years to almost 160% of 2016 revenues, or decrease to about 92% of 2016 revenues.

Three crash scenarios have been considered. The total number of sales drops by a similar percentage to the drop in 2008/09. Again, the separation of the number of sales and the prices allows the prices to either continue from previous behavior, to flatten, or to drop. Revenues from these scenarios vary, with the most pessimistic giving a revenue drop in 2017 to 35% of 2016 revenue.

Separation of the housing market in this way allows flexible scenarios, and the estimation of Stamp Duty revenue from these would also allow the effects of changing Stamp Duty policy to be understood.

Contact

This publication is one of two modelling the impacts of tax reform in London. It is part of the Centre for London and Institute for Policy Research (IPR) project *Open City: London After Brexit*. To find out more, contact IMI Commercial Research Assistant Dr Catherine Barnaby by:

Phone: 01225 385245

Email: c.l.barnaby@bath.ac.uk

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