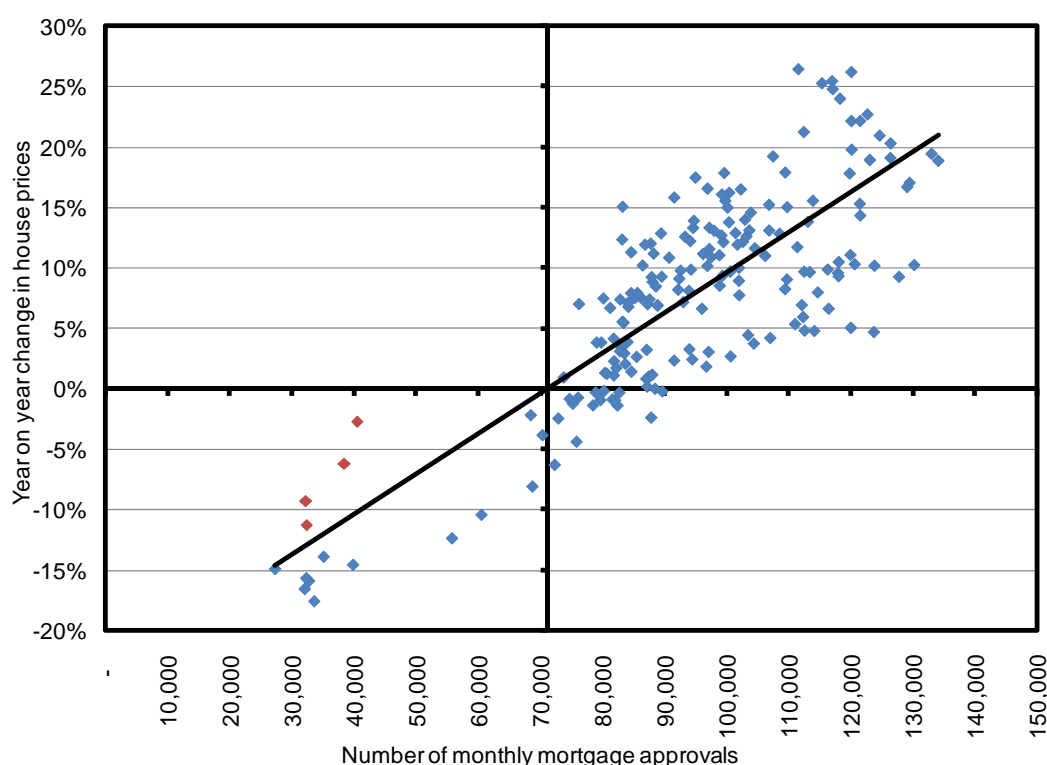


## Short Term House Price Forecasting

The August edition of the eInsight included a discussion of how mortgage approvals and house prices show a strong relationship when using monthly data. This short note goes into additional detail on how this relationship is used to produce the Volterra short term forecasting model for house prices. It also discusses the challenge presented by the latest 4 months of data, which diverge from the historical relationship.

The relationship between the number of mortgages approvals in a single month and the year on year<sup>1</sup> change in house prices 5 months in the future is presented below. This relationship suggests that a mortgage approval level of 70,000 per month is required to keep nominal house price constant on a year on year basis. For every additional 3,000 mortgages approved the yearly growth in house prices increases by 1 per cent. The model has an r-squared of 0.67.

Figure 1: Mortgage approvals and house prices



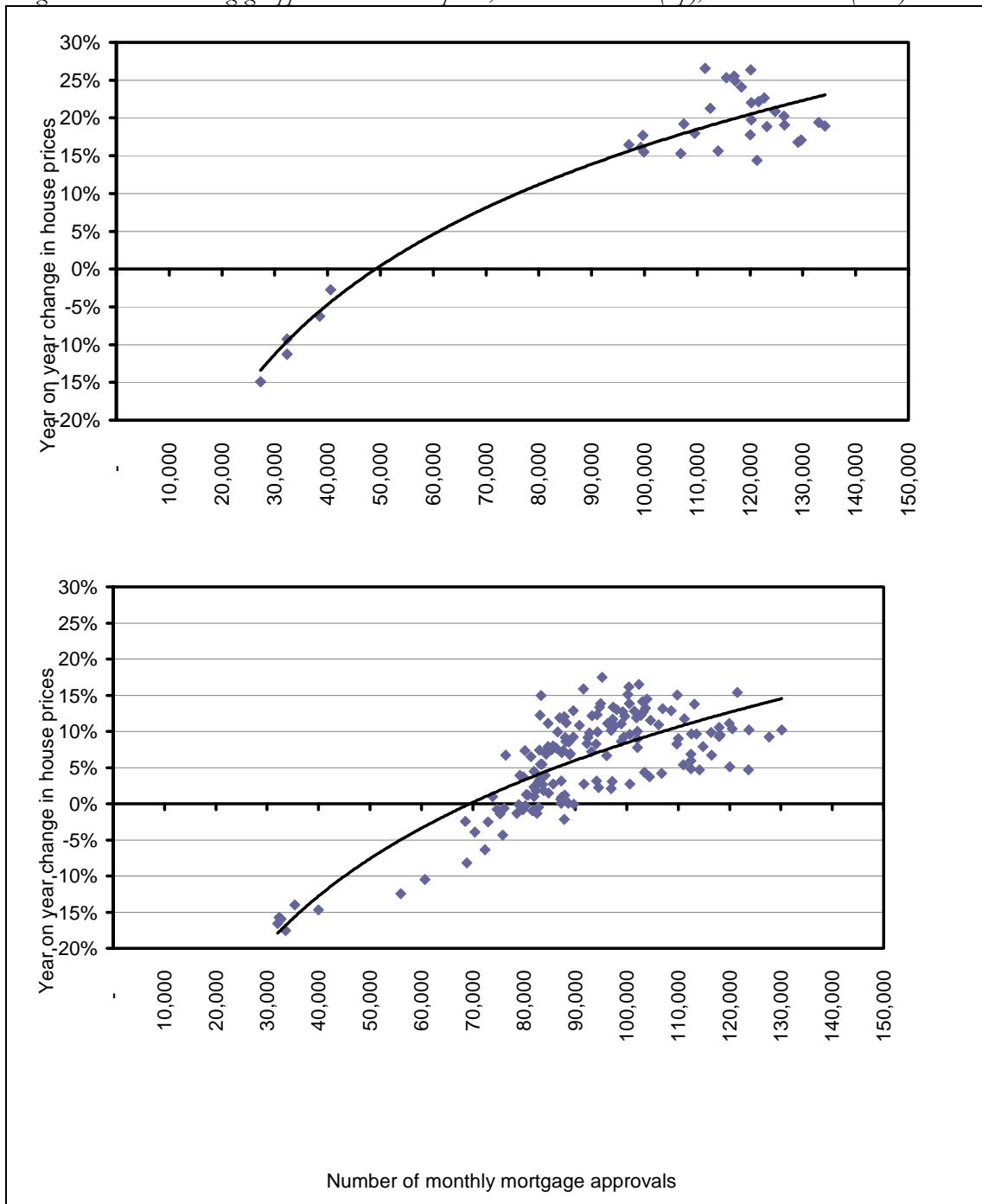
The model can be used to predict house prices up to 5 months into the future. This is because with the latest mortgage approvals data we can model the year on year change in house prices for the next 5 months.

At the time of writing, the latest data on mortgage approvals is available to July 2009. This allows us to forecast the nominal house price to December 2009 – i.e. an end of year forecast. In July 50,123 mortgages were approved. Using the model this implies the year on year house price change between December '08 and '09 will be -7 per cent. This would imply an 11 per cent fall between now and December. Given the monthly rises in house prices witnessed recently, this does not seem realistic. As such a new model that takes account of recent data needs to be investigated.

<sup>1</sup> E.g, the percentage change between the nominal average house price in August 2009 and August 2008.

One option is to separate out the data points where the prevailing base rate is above or below a certain value. This will take account of the interest rate on the rate of growth of house prices<sup>2</sup>. Using 4 per cent as the cut-off interest rate, and fitting a logarithmic curve, we get a good model. This is presented below.

Figure 2: Mortgage approvals and house prices, base rate  $\leq 4\%$  (top), base rate  $> 4\%$  (lower)



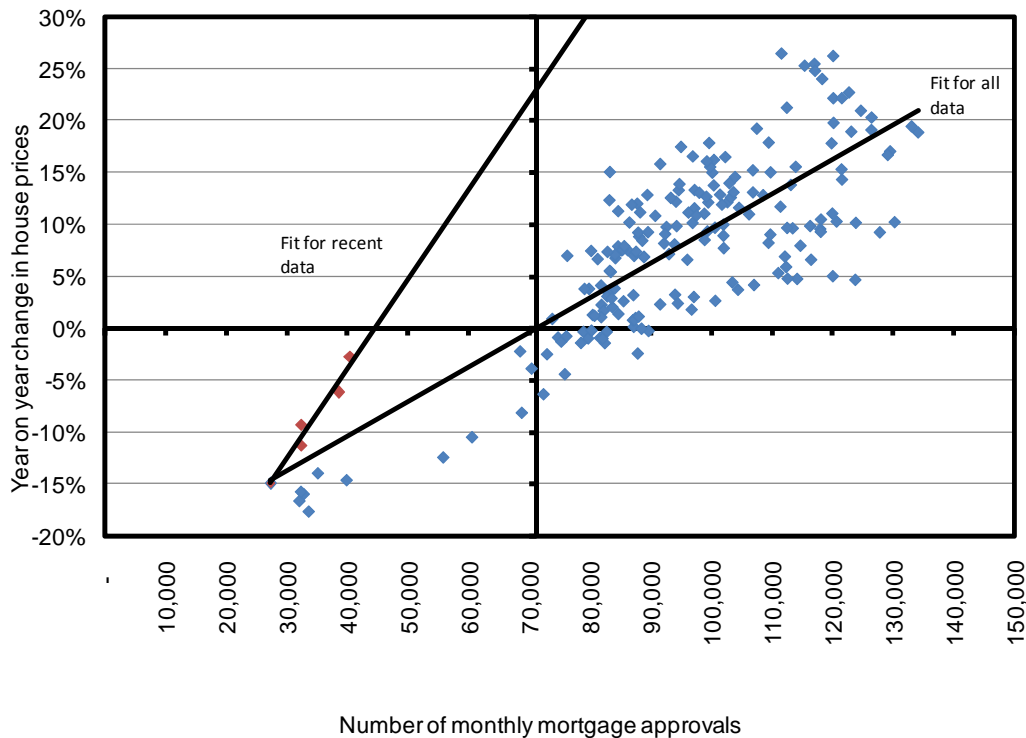
<sup>2</sup> Simply including the interest rate (or any transformation of it) directly within the model does not appear to add to the model's explanatory power.

Separating out the data based on the base rate provides two good fits. This model would suggest that when the interest rate is above 4 per cent, 70,000 monthly mortgage approvals are still required to sustain constant nominal house prices. However, when interest rates are below 4 per cent, a much lower level of activity is required to sustain constant prices – around 50,000.

Given that in July there were just over 50,000 mortgage approvals, this model predicts that in December 2009 year on year nominal house price growth will be flat. However, this would imply a 4 per cent fall in prices between now and December. As such, other models need to be investigated.

An alternative is to fit a model to just the past 5 months of data. This is presented below.

Figure 3: Mortgage approvals and house prices, recent trend



This model fits the data well. It suggests that recently a new dynamic has emerged in the housing market. The market is currently being driven by low supply, increasing demand, low interest rates and high deposit purchases. These conditions will not continue indefinitely.

Using this model to forecast to the end of the year suggests that house price in December '09 will end 5 per cent higher than in December '08. We find this to be the best forecast for the housing market in the short term.