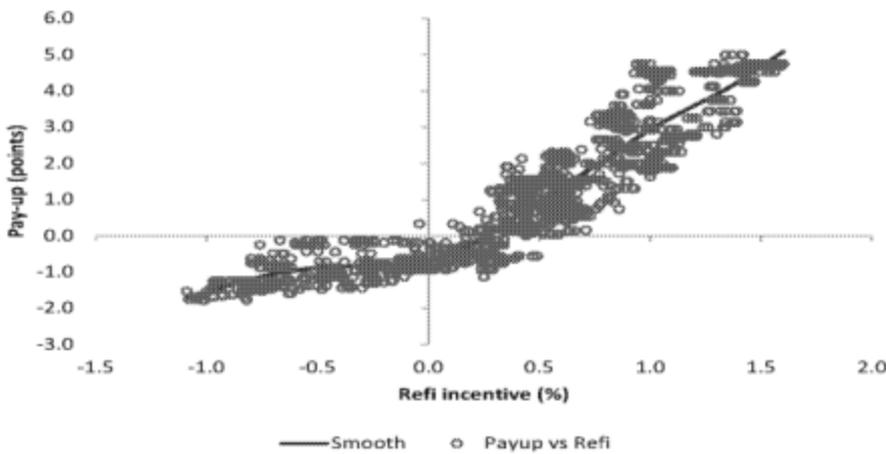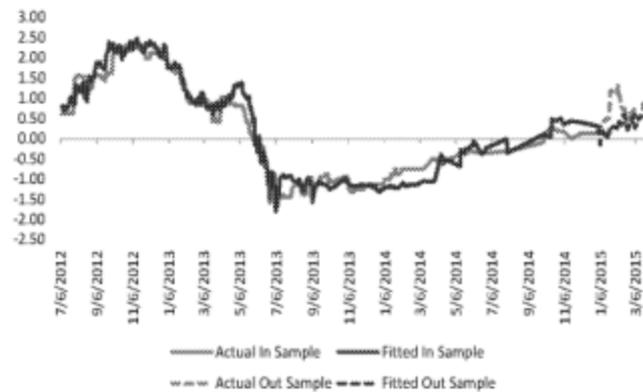Figure 8: High-LTV pool pay-ups show curved relationship to refi incentive
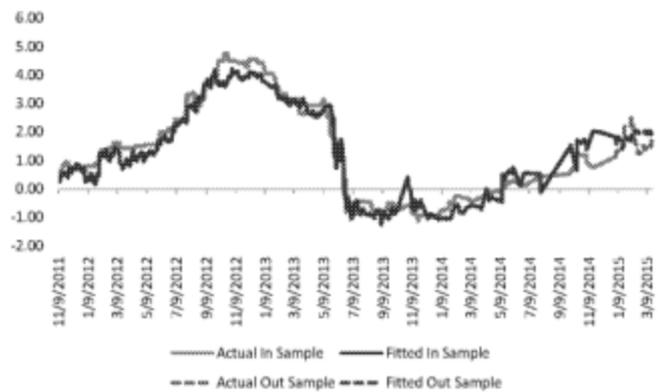

Note: Refi incentive is measured as the gross WAC on the TBA deliverable for a given period less the prevailing 30-year primary mortgage rate.
Source: Deutsche Bank

Figure 9: Model fit for CQ 3.5%s in and out of sample

Source: Deutsche Bank

Figure 10: Model fit for CQ 4.0%s in and out of sample

Source: Deutsche Bank

Given this relationship we chose to use a non-parametric general additive model (GAM) to describe that function. Reassuringly, the core function relating refi incentive to pay-up continues to hold well in out-of-the-money high-LTV pools, which are non-deliverable and so can trade back of TBA.

That model produced a fit with nearly a 97% R-squared, and each variable measured as highly significant, to 99.9% confidence. The model fit well on CQ and CR pools across multiple coupons, and appears to continue to track well when predicting out of sample.

One final caveat to the accuracy of the model is our exclusion of any measure of dollar roll specialness. Within our theoretical framework, dollar roll specialness should have a significant inverse relationship with loan balance pay-ups. That is, a highly special dollar roll should reduce or eliminate the carry advantage of slower prepayments in the specified pool collateral. However, calculating a historical measure of roll specialness is inherently subjective, and our simple approach did not return a significant or logical relationship to pay-ups. One explanation may be that pay-ups may react more strongly when the roll is special in both the front and back months, indicating persistent specialness. However, determining back month roll specialness becomes even more complex and subjective than focusing on the front month alone.