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# Why are aggressive mortgage products bad for the housing market?



Andrew Davidson<sup>a</sup>, Alex Levin<sup>a</sup>, Andrey D. Pavlov<sup>b</sup>,  
Susan M. Wachter<sup>c,\*</sup>

<sup>a</sup> Andrew Davidson & Co., United States

<sup>b</sup> Simon Fraser University, Canada

<sup>c</sup> University of Pennsylvania, United States

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## ABSTRACT

In this paper we identify the relationship of the pricing of residential mortgage lending products to their market share during the run up to the financial crisis of 2007. We then use this relationship to decompose the total impact of nontraditional mortgage products on house price declines during the crisis into impact due to their pricing and due to other characteristics. Using alternative measures of mortgage pricing, we document that pricing has a statistically significant but small impact on the difference in market share of nontraditional mortgage products by State. We further document that factors which lead to the increased market share of nontraditional products other than pricing are likely responsible for the impact of those products on the house price declines during the crisis. Our findings imply that going forward underwriting standards and other characteristics of nontraditional mortgage products should be monitored and regulated.

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## 1. Introduction

In this paper we identify the relationship of the pricing of residential mortgage lending products to their market share during the run up to the financial crisis of 2007. We then use this relationship to

\* Corresponding author. Tel.: +1 2158986355.

E-mail address: [wachter@wharton.upenn.edu](mailto:wachter@wharton.upenn.edu) (S.M. Wachter).

decompose the total impact of nontraditional mortgage products on house price declines during the crisis into impact due to their pricing and due to other characteristics.

The link between the expansion of nontraditional mortgage lending and real estate market valuations has recently been established in the literature. For instance, [Pavlov and Wachter \(2011\)](#) document that a high share of subprime mortgages, in a region, magnifies the price appreciation, in that area, during the boom years and the decline during the crisis years. In this paper we replicate this latter result using a new data set of nontraditional mortgage products and extend it to the bust period of 2008–2009. We document that a high share of nontraditional mortgage products resulted in larger price declines during the crisis. Similarly, [Davidson and Levin \(2014a\)](#) compute the share of these products and show that the four States that used these products the most (60–70% share in Nevada, Arizona, Florida and California) also led the HPI decline (40–50%).

While the relationship between nontraditional mortgage product (NTM) expansion and real estate price appreciation is highly robust, the mechanism behind this remains elusive as does the mechanism behind the subsequent decline in prices. Common conjectures include that nontraditional mortgage products relax a liquidity constraint many potential homeowners face (e.g., [He, Wright, & Zhu, 2014](#)). Alternatively, the mechanism could be that NTM products are mispriced, thus providing an effective subsidy to home buyers (e.g., [Pavlov & Wachter, 2009](#)). [Davidson and Levin \(2014b\)](#) assess the amount of mispricing via a “Credit OAS” simulation process that operates *ex-ante* (without the knowledge of the HPI decline that followed). They show that, while credit risk in non-prime-quality loans was generally mispriced going into the 2004–2006 housing bubble, this mispricing was relatively modest for FRMs and spectacularly large for ARMs. Some of these results are also given in [Davidson, Levin, and Wachter \(2014\)](#). The mispriced risk and/or the relaxed liquidity constraint may have contributed to house price declines in the crisis.

In this paper we examine the mechanisms that relate the expansion of nontraditional mortgage products to the generation of price appreciation and price declines. We find that the expansion of market share of these products was related to pricing; however, there are substantial differences in the elasticity by State, so that pricing alone does not provide a complete explanation of the expansion of market share.

Similarly, we find that the negative impact of nontraditional loan products on the real estate markets during the house price decline was not directly related to mispricing during the boom. Instead, we document that the negative impact was due to other aspects of nontraditional products, such as lax underwriting requirements, aggressive marketing or other State related institutional factors.

Specifically, in a first-stage estimation we establish a relationship between the market share of nontraditional mortgage products and their pricing. While it is intuitive that market share for mortgage product should be determined by the pricing of that product, this relationship has not been tested in the literature.

In a second-stage estimation, we use the mortgage rate driven (explained) market share and residual (unexplained) market share to model the real estate market declines in the crisis period of 2008–2009. We document that the residual (unexplained) nontraditional mortgage market share dominates the mortgage rate driven (explained) market share component.

We proceed as follows. Section 2 describes the data sources. Section 3 presents empirical results for the relationship between nontraditional mortgage instruments’ market share and house prices using this new data source. Section 4 estimates the price elasticity of nontraditional products in each state and relates it to price declines. Section 5 shows the geography of nontraditional mortgage product use and lists possible reasons for nontraditional mortgage products finding their way in force to some States and not to others. Finally, we conclude with suggestions for future research.

## 2. Data sources

Our origination dataset is compiled from Intex Solutions’ non-agency MBS data and aggregated by calendar year and quarter. Overall, the dataset covers 23.65 million of securitized loans represented by 273 thousand quarterly origination records. For the analysis of borrower affordability and the related home-price dynamics, loans used for real-estate purchases (“purchase loans”) are of a particular importance to us. There are 7.28 million purchase loans represented by 112 thousand origination records.

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