Using Google Trends to Enhance Predictive Models of Mortgage Delinquency to Mitigate Risk in the Loan Lending Process

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Many global and national recessions have been caused by or exacerbated by bank failures. The most recent economic crisis, the recession of 2008, was triggered by a banking panic. Accurately predicting changes in consumer payment behavior will provide further certainty to banks in the lending process and help prevent bank failure. I hypothesized, tested and validated that Google Trends can be used as predictive indicators of consumer behavior with regard to mortgage delinquency. I created autoregressive linear regression models and autoregressive linear regression models with logarithmic transformation of data to test the power of Google Trends to predict delinquency with at least a six-month time lag. I compared models that solely contained past mortgage delinquency and macroeconomic variables with models that combined Google Trends Data. In all cases, the addition of Google Trends significantly lowered the residual error of predicted mortgage delinquency values. Not only did Google Trends Data enhance the ability to predict delinquency with a higher degree of accuracy, but it was also able to identify emerging delinquency risks 6-18 months ahead of the crisis – something traditional economic indicators are not able to provide that far in advance. Banks and other financial firms can use these models to more accurately predict aggregate delinquency levels and suitably refine their broad loan policy decisions. This would enable them to reduce the broader risk in their loan lending process and optimize the health of their loan portfolio.

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