Scale is a key feature of modern financial markets. e.g., even if you are absolutely certain that some group of stocks is mispriced somewhere in the market, you still have to start with some idea about where to look. The problem of choosing ahead of time which groups of stocks are worth analyzing is a cognitive control problem, and this paper proposes that it has first order asset pricing implications. I proceed in 3 steps. First, to fix ideas I write down an asset pricing model where arbitrageurs face a cognitive control problem. Asset values are the sum of many attribute-specific shocks. As the market grows large the number of attribute groupings grows exponentially faster than the number of stocks, so pricing errors might persist because arbitrageurs can’t exhaustively search through every single attribute. Next, I show that only analyzing attributes which display a coincidence—i.e., attributes with 2 or more stocks in the top or bottom 10 past returns—is a good heuristic solution to this cognitive control problem. Moreover, it is a strategy that is only useful in this context, so trading on coincidences is a tell-tale sign of a cognitive control problem. Finally, I give empirical evidence of trading on coincidences. I find that stocks from an industry that realized a positive coincidence over the previous quarter have 1.95x higher abnormal returns in the subsequent month than stocks from an industry that realized a negative coincidence. Industries where 1 stock has returns in the top 10 and another stock has returns ranked somewhere between 11th and 20th display no such pattern. This effect is not explained by momentum effects, market frictions, or large to small stock cross-autocorrelation.

**Misinformed Speculators and Mispricing in the Housing Market** (2014, Submitted), with Chris Mayer

This paper uses transactions-level deeds records to examine how out-of-town second house buyers contributed to mispricing in the housing market. We document that out-of-town second house buyers behaved like misinformed speculators and drove up both house price and implied-to-actual rent ratio (IAR) appreciation rates in cities like Phoenix, Las Vegas, and Miami in the mid 2000s. Our analysis has 3 parts. First, we give evidence that out-of-town second house buyers behaved like misinformed speculators. Compared to local second house buyers, out-of-town second house buyers had worse exit timing (i.e., were likely
mislabeled) and were also less able to consume the dividend from their purchase (i.e., were likely speculators). Second, we show that increases in out-of-town second house buyer demand predict increases in future house price appreciation rates and IAR appreciation rates. A 10% increase in the fraction of sales made to out-of-town second house buyers is associated with a 5% increase in house price appreciation rates and a 9% increase in IAR appreciation rates over the course of the next year in that city. Third, we address the issue of reverse causality using a novel econometric strategy. The key insight is that an increase in the fundamental value of owning a second house in Phoenix is a common shock to the investment opportunity set of all potential second house buyers. If changes to fundamentals were driving both price dynamics as well as out-of-town second house buyer demand, we would expect to see large jumps in house price and IAR appreciation rates preceded by increases in out-of-town second house buyer demand from across the country. The data do not display this symmetric response, and are thus inconsistent with reverse causality. We conclude by discussing both the economic magnitudes of out-of-town second house buyer flows and the broader applicability of our econometric approach.

Local Knowledge in Financial Markets (2014)

There is a minimum number of transactions, \( N^* \), needed to identify a finite number of shocks via price changes. I refer to this threshold value as the signal recovery bound. When fewer than \( N^* \) transactions have occurred, knowledge about which shocks have taken place is inherently local since traders must use some other information in addition to prices to uncover it—e.g., fundamental analysis or word of mouth. I proceed in 3 steps. First, I show that this signal recovery bound is not only a) readily calculable using techniques from the compressed sensing literature but also b) independent of the precise details of traders' cognitive constraints. Second, I embed the signal recovery bound in an information-based asset pricing model à la Kyle (1985) to explore how it constrains would be arbitrageurs who must wait until \( N^* \) transactions have occurred before drawing the correct inferences from prices. When shocks are sufficiently rare or short-lived, no traders choose to become arbitrageurs. Third, I give examples of how the signal recovery bound applies to a wide variety of common financial settings including residential housing markets, public equity markets, and bond markets.

The Positive Externality of Accurate Prices (2014)

Emergent Aggregate Risk (2014)

Which Investment Horizons Do Traders Worry About? (2014)

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