

Research Statement

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In the equity market, if “the price is right,” then there should be “no free lunch.” While free lunches are rare—or virtually nonexistent once standard frictions are taken into account—can we really take this as evidence that prices are approximately right, and that in the absence of those frictions they would be exactly right? My answer is no. The ultimate friction is indeterminacy: the investor’s inability to distinguish rationality from irrationality.

Although not all investors are rational or trade for fundamental reasons, there is a traditional belief that a small group of rational investors is sufficient to keep prices aligned with fundamentals. This group of informed speculators is typically referred to as *arbitrageurs*.

In textbooks, arbitrage is defined as a riskless and capital-free activity. However, in real-world markets, firms’ payoff streams always include a non-redundant, and thus non-hedgeable, idiosyncratic component. Additionally, search costs encourage arbitrageurs to specialize, limiting their diversification. Moreover, short-selling costs make arbitrage a capital-intensive endeavor, and arbitrageurs’ finances may be limited. Overall, these risks and capital requirements can constrain arbitrageurs’ ability to correct stock prices. Yet, in the absence of such limitations, would prices always be correct?

While these standard frictions are undoubtedly significant, they do not capture the entire picture. My work focuses instead on a deeper and more fundamental limit: price indeterminacy—the idea that arbitrageurs may not be able to determine whether prices are rational or irrational. In other words, I show that the absence of “free lunches” does not necessarily imply that prices are “correct,”

even in the absence of the more standard frictions.

A natural laboratory to study price indeterminacy is the case of a publicly traded company (the *parent*) that holds shares in another publicly traded company (the *subsidiary*), while also owning other assets that are not independently traded. In this setting, all components are in principle tradable: one can trade the parent, the subsidiary, and even the parent's residual value (its other assets net of liabilities) by constructing a long-parent/short-subsidiary portfolio. However, while the subsidiary's payoff stream is redundant—accessible both directly and indirectly through the parent—the parent's overall payoff is not, since its other assets are not separately traded. This mirrors the general case of a tradable factor, whose payoffs are redundant because they appear in many assets; yet the idiosyncratic components inherent in each asset prevent the emergence of a truly redundant, tradable security.

As such, the publicly traded parent/subsidiary setting lies midway between classic Law of One Price arbitrage scenarios (e.g., different share classes, ADRs, twin stocks, closed-end funds) and more general situations in which each stock reflects a unique payoff stream and price consistency is difficult to verify. For example, one may ask whether the same exposure to a given factor is priced identically across firms—a determination that is challenging in real time without strong assumptions about arbitrageurs' information sets. Similarly, consider a scenario in which the subsidiary's market value rises by \$1 billion, while the parent company's market capitalization increases by only \$500 million. Arbitrageurs can always attribute the apparent discrepancy to a coincident decline in the value of the parent's other assets, since these assets are not independently traded. Only in a full-information world—where the market value of the parent's other assets is known or observable—can arbitrageurs immediately verify whether an inconsistency has occurred.

However, over an extended period, an econometrician can measure how the parent company reacts to price changes in its subsidiary. After controlling for co-movements between the subsidiary and the parent's other assets, I find that parent firms strongly underreact to such changes. Classical explanations—such as liquidity concerns or capital gains taxes—fail to account for this underreac-

tion. Yet when the parent holds few other assets, or only liabilities, the transmission rate is close to one. This suggests that it is the presence of other equity assets—and the resulting valuation ambiguity—that ultimately limits arbitrage.

I also show that Negative Stub Value (NSV) cases—where the market value of the parent is less than its stake in the subsidiary—can be seen as extreme manifestations of this limit. Since there is no independent market for the parent’s other assets, and since the parent typically carries liabilities, the price can always be rationalized. It is only in hindsight that the mispricing appears obvious, particularly when a correction is triggered by the parent announcing its intention to carve out its stake. I document several recent NSV cases not previously analyzed in the literature, further illustrating how ambiguity about the value of non-tradable components can suppress arbitrage activity—even in cases where it is the parent company that appears undervalued, which should be easier to arbitrage than when the subsidiary is overvalued.

My research seeks to better understand how informative stock prices truly are. Prices play a central role in allocating capital across the economy—they are the switchmen of capital allocation. The goal of my work is to clarify what stock prices can reveal, what they cannot, and how markets might be made more efficient in directing capital toward its most productive uses.

Shortlist of Papers That Inspired My Research

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