The Value of Arbitrage

Eduardo Dávila† Cecilia Parlatore‡

December 28, 2018

Abstract

We study what is the social value of arbitraging price differentials across financial markets. We show that arbitrage gaps (price differentials between markets) are sufficient statistics for the social marginal value of arbitrage. While one would expect that the value of arbitrage is increasing in the size of the arbitrage gap, our analysis shows that the arbitrage gap exactly corresponds to the marginal social value of arbitrage. We show that investors in all markets benefit from arbitrage trades and that the arbitrageur sector only gains from an arbitrage trade initially. We then provide an upper bound for the total value of arbitrage, and develop a methodology to approximate such upper bound using only local information. While price information is sufficient to characterize the marginal gain, the size of the trade needed to close the arbitrage gap is required to calculate the total gains from arbitrage. Our approach does not require the specification of preferences and instead uses asset prices and measures of price impact. We show that, for a given arbitrage gap, the total social value of arbitrage is higher in more liquid markets. Using our methodology, we calculate the value of arbitrage in several empirical applications.

JEL Classification: D61, G12, G18

Keywords: arbitrage

†Yale University/New York University, Stern School of Business and NBER. Email: eduardo.davila@yale.edu
‡New York University, Stern School of Business. Email: cparlato@stern.nyu.edu

*VERY PRELIMINARY. We would like to thank Ricardo Caballero, Darrel Duffie, Emmanuel Farhi, Joel Hasbrouck, Arvind Krishnamurthy, Hanno Lustig, Urban Jermann, Alexi Savov, and Adrien Verdelhan for helpful comments and discussions.