

# Markets Are Efficient

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» *The Efficient Market Hypothesis (EMH) might not apply well to labor markets, but it works on money markets. Not true. Even money markets can be grossly inefficient.*

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Assuming efficient markets in economics is a bit like neglecting air resistance in physics. It allows developing beautiful models and using powerful mathematical techniques, but the simple fact that there is air everywhere around us (otherwise, we could not live) or that actual markets exhibit all kinds of imperfections is not enough to discard such assumptions. All theories require simplifying assumptions, even if those seem very implausible. The real problem is: are the beautiful models developed with these assumptions of any use for understanding the real world?

Conventional wisdom is that the answer depends on what particular aspect of the real world we want to study. For example, if we study the free fall of a rock, neglecting air resistance is fine. If it is the free fall of a sheet of paper, omitting air resistance does not work at all. The same is true for the efficient market hypothesis (EMH): most economists would agree that it does not work well on labor markets, but few would criticize its application to money

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markets, i.e., the markets where banks and large corporations get short-term finance in different currencies.

Money markets are very liquid, transaction costs are small, and participants are smart professionals who understand what they are doing. Thus, they are a good candidate for the EMH, and one of its most important implications is the absence of arbitrage opportunities, i.e., the impossibility to make an assured profit without investing any funds.

Some economists view it as the only “universal law” in economics and as an extension of the law of one price. It is the basis for the powerful and elegant models of mathematical finance.

A standard technique of arbitrage between national money markets is carry trade: borrowing in one currency and lending in another, while hedging currency risk by using derivative instruments. This arbitrage is theoretically possible without any funds (one borrows in one currency the amount lent in the other) and without taking any risk (since the trade is hedged by a derivative contract).

Most mathematical finance courses use carry trade as a motivating example. It is easy to see, indeed, that if money markets are efficient, a simple relation must exist between interest rates in different currencies, called the covered interest parity formula. This is the most basic formula in mathematical finance.

Alas, even this basic formula does not hold. It was severely violated several times in the global financial crisis (GFC) of 2007–2009. Thus, even money markets can sometimes be grossly inefficient, as they can exhibit persistent, sizable, and seize-able arbitrage opportunities. The reason is that any arbitrage, even if it looks totally risk-free, needs capital to operate properly, and capital is scarce since the GFC.

Ultimately, there seems to be no “universal law” in economics. This should not be a reason to reject models. Rather, this is an encouragement to develop alternative models that may be less elegant and more accurate and take into account the frictions that matter significantly in actual markets.