



Do industries lead stock markets? ☆

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Received 16 June 2004; received in revised form 28 July 2005; accepted 9 September 2005
Available online 22 September 2006

Abstract

We investigate whether the returns of industry portfolios predict stock market movements. In the US, a significant number of industry returns, including retail, services, commercial real estate, metal, and petroleum, forecast the stock market by up to two months. Moreover, the propensity of an industry to predict the market is correlated with its propensity to forecast various indicators of economic activity. The eight largest non-US stock markets show remarkably similar patterns. These findings suggest that stock markets react with a delay to information contained in industry returns about their fundamentals and that information diffuses only gradually across markets.

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JEL classifications: G12; G14; G15; E44

Keywords: Asset pricing; Information and market efficiency; Financial markets and macroeconomy; International financial markets

☆ We are grateful to Jeremy Stein and a referee for many insightful comments. We also thank John Campbell, Kent Daniel, Ken French, Owen Lamont, Toby Moskowitz, Sheridan Titman, Rob Engle, Matthew Richardson, David Hirshleifer, Matthew Slaughter, Will Goetzmann, Mark Grinblatt, and participants at the 2004 AFA meetings, Berkeley-MIT-Texas Real Estate Research Conference, Goldman Sachs, Columbia, Dartmouth, Harvard Business School, NYU, Rice, and Yale for helpful comments. Hong acknowledges support from an NSF grant. Valkanov acknowledges support from the Anderson School at UCLA.

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1. Introduction

In this paper, we investigate whether the returns of industry portfolios are able to predict the movements of stock markets. We begin our analysis with the US stock market. Over the period 1946–2002, we find that 14 out of 34 industries, including commercial real estate, petroleum, metal, retail, financial, and services, can predict market movements by one month. A number of others such as petroleum, metal, and financial can forecast the market even two months ahead. After adding a variety of well-known proxies for risk and liquidity in our regressions as well as lagged market returns, the predictability of the market by these 14 industry portfolios remains statistically significant. We have also done numerical simulations to gauge just how many industries will (with statistical significance) forecast the market simply by chance, and in only 0.04% of the simulations are 14 or more industries able to forecast the market and on average, only five (in contrast to the 14 we find) are able to do so at the 10% level of significance.

In addition, we provide a few metrics regarding the statistical and economic significance of the documented predictability. First, we examine the ability of these industries to predict the market in comparison to well-known predictors such as inflation, default spread, and dividend yield and find comparable forecasting power. Second, we show that a portfolio incorporating information in past industry returns can lead under certain circumstances to a higher Sharpe ratio than simply holding the market. And third, we extend our analysis to each of the largest eight stock markets outside of the US, including Japan, Canada, Australia, UK, Netherlands, Switzerland, France, and Germany. In contrast to the US, these time series are limited to the period of 1973–2002 and we are unable to obtain the same set of controls (e.g., market dividend yield, default spread). With these caveats in mind, we find that the US results hold up remarkably well for the rest of the world.

Our investigation is motivated by recent theories that explore the implications of limited information-processing capacity for asset prices. Many economists have recognized for some time that investors, rather than possessing unlimited processing capacity, are better characterized as being only boundedly rational (see Shiller, 2000; Sims, 2001). Even from casual observation, few traders can pay attention to all sources of information, much less understand their impact on the prices of the assets that they trade. Indeed, a large literature in psychology documents the extent to which even attention is a precious cognitive resource (see, e.g., Kahneman, 1973; Nisbett and Ross, 1980).

More specifically, our investigation builds on recent work by Merton (1987) and Hong and Stein (1999). Merton develops a static model of multiple stocks in which investors have information about only a limited number of stocks and trade only those that they have information about. As a result, stocks that are less recognized by investors have a smaller investor base (neglected stocks) and trade at a greater discount because of limited risk-sharing. Hong and Stein develop a dynamic model of a single asset in which information gradually diffuses across the investment public and investors are unable to perform the rational expectations trick of extracting information from prices. As a result, the price underreacts to the information and there is stock return predictability.¹

The hypothesis that guides our analysis of whether industries lead stock markets is that the gradual diffusion of information across asset markets leads to cross-asset return

¹For other models of limited market participation, see Brennan (1975) and Allen and Gale (1994). For related models of limited attention, see, e.g., Peng and Xiong (2002) and Hirshleifer, Lim, and Teoh (2002).

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