Turnover and return in global stock markets

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Abstract

I study how growth affects liquidity of global stock exchanges and how liquidity determines cross-sectional returns on those stock exchange index portfolios. I measure portfolio liquidity by turnover ratio computed as value of shares traded over the market capitalization. I obtain data from FIBV, an association of global stock exchanges. In a multiple regression model for turnover ratio, I find age, size, type of exchange, competition for order flow, and growth rate to be significant determinants of portfolio liquidity; however, exchange- and time-specific effects are more appropriate for modeling portfolio liquidity. The time effects yield to three distinct regimes, while the exchange-specific effects are surrogates for the legal systems, English common law, and Civil laws of the countries. I estimate the parameters of a multiple regression model in a two-stage GLS framework in which index return is a function of turnover. The GLS method is preferable since a turnover ratio may have a non-stationary, random component. The significant determinants of index return are turnover and volatility, although some of the volatility effect may be a spillover from a January effect. Investors expect higher return from high turnover markets. However, the positive turnover expected return relation is true only in emerging markets; in developed markets expected return is a function of volatility. This result confirms existing empirical evidence that high turnover stock portfolios generate superior returns and further the sources and pricing of risk in emerging and developed markets are different.

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1. Introduction

Turnover ratio (also called turnover), value of shares traded during a period, as a percentage of market value of shares outstanding is a measure of liquidity. Recently, Datar et al. (1998) (later DNR) and Easley et al. (2002) (later EHO) use turnover ratio to test the empirical implication of Amihud and Mendelson (1986) (later A and M) and report convincing evidence that for individual securities, expected return and turnover are inversely related and that investors demand a premium for holding illiquid stocks.

Kane (1994) extends the results of A&M (1986) to non-quoted liquid assets like non-traded index portfolios. Empirical evidence, however, indicates that the relation between expected return and turnover ratios for stock portfolios is positive. For domestic mutual fund portfolios, Brennan and Titman (1994) document a strong positive relation between turnover and excess return, and Wermers (2000) conclude that high turnover mutual fund portfolios generate excess return over a passive, Vanguard Index Fund. Rouwenhorst (1999) and Sang-Gyung et al. (2003) report an increasing relation between portfolio turnover and expected return in emerging markets, while Bekaert et al. (2003) (later BHL) find that for emerging markets turnover is not a determinant of future returns, although a cost of liquidity measure based on Lesmond et al. (1999) is. The positive relation between portfolio turnover and return documented by Brennan and Titman (1994), Rouwenhorst (1999), Sang-Gyung et al. (2003), and Wermers (2000) suggests that an active management of an index and its composition may lead to a high turnover and growth in its value. Domnowitz et al. (2001) argue that consideration of transactions costs and turnover may lead to a change in the composition of efficient global portfolios.

In this paper, I investigate the determinants of turnover, and further, the relation between expected returns on stock exchange indexes and their corresponding turnover for 48 global stock exchange portfolios. The central argument in the paper is that a positive relation between turnover and growth as shown in Appendix A, drives the observed positive relation between expected return and portfolio turnover (Brennan and Titman, 1994; Rouwenhorst, 1999; Sang-Gyung et al., 2003). Appendix A shows that portfolio turnover computed as value of shares traded over market capitalization for a portfolio is an equally weighted average of value of shares traded for individual securities in the portfolio, the weight being one over the market value of the portfolio. Thus portfolio turnover denotes composition (reciprocal of market capitalization), the fraction of risky, growth stocks in a portfolio, and its liquidity (value of shares traded). Miller and Scholes (1982) point out that reciprocal of market value measures beta risk. This positive relation between turnover and growth suggests that by choosing a high fraction of growth stocks in a portfolio i.e., actively managed, portfolio turnover may be increased, and since high growth stocks are riskier than value stocks, expected return on such portfolios will be higher reflecting their higher risk. However, this risk return relation differs between developed and emerging markets due to differences in risk perceptions and measurements for asset pricing.

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1 For some country portfolios, the fraction of growth stocks may reflect the true composition of industries in that country. However, many countries unlike USA have industrial policies, which promote certain industries at the cost of other industries.
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