



ELSEVIER

Contents lists available at ScienceDirect

Emerging Markets Review

journal homepage: www.elsevier.com/locate/emr

The formulation of the four factor model when a considerable proportion of firms is dual-listed

Sharon Garyn-Tal^a, Beni Lauterbach^{b,*}

^a The Economics and Management Department, Yezreel Valley Academic College, Emek Yezreel 19300, Israel

^b School of Business Administration, Bar-Ilan University, Ramat Gan 52900, Israel



ARTICLE INFO

Article history:

Received 21 August 2014

Received in revised form 24 April 2015

Accepted 14 May 2015

Available online 20 May 2015

JEL classification:

G12

G15

Keywords:

Local and hybrid four factor models

Dually-listed shares

Fama–French–Carhart model

ABSTRACT

We examine the performance of the Fama–French–Carhart four factor asset pricing model in an economy, Israel, where a relatively large proportion of shares (14.4% in our sample) are dually listed, i.e., trade also on NYSE or NASDAQ. We find that a hybrid model (adding U.S. or global factors to the local 4 factor model) performs only slightly better than the local model, casting doubt on the practical necessity of hybrid models in emerging markets. Further tests suggest that the dually listed shares should not be excluded when constructing the local factors.

© 2015 Published by Elsevier B.V.

1. Introduction

The Fama–French–Carhart 4-factor asset pricing model (e.g., Carhart, 1997; Fama and French, 1993) has been tested extensively in the U.S. and outside it. The common finding is that although the 4 factor model can be rejected in some cases, it performs reasonably well in other cases, and, in general, performs better than the previously-accredited Capital Asset Pricing Model (CAPM). Thus, in the recent decade, the 4 factor model became the standard empirical asset pricing model.

An important pending issue, debated in the literature, is whether the factors should be constructed locally (within the economy), regionally (within some economic region) or globally (using all world's stocks). Griffin (2002) studies U.S., Great Britain, Canada and Japan, and concludes that the local (own country based) Fama French model performs better than the global version (where factors are constructed

* Corresponding author. Fax: + 972 35318901.

E-mail addresses: sharon.tal.garyn@gmail.com (S. Garyn-Tal), beni.lauterbach@biu.ac.il (B. Lauterbach).

using all shares in the four countries studied). In contrast, [Hou et al. \(2011\)](#) study 27,000 stocks from 49 countries over 1981–2003, and conclude that a hybrid model, comprising local and global factors has the lowest pricing errors. Last, [Fama and French \(2012\)](#) study 23 stock markets during 1989–2011 and conclude that adding global factors to local ones does not contribute to the explanatory power of the 4 factor model.

We contribute to the debate by studying pricing in an exchange (the Tel-Aviv Stock Exchange) where a relatively high proportion of shares is dual-listed. About one-seventh of our sample shares are listed also on the NYSE or NASDAQ. Given that dual-listed firm returns are bound to be influenced by foreign market returns, is the hybrid model more successful and more pertinent in our sample?

We find that hybrid models (adding U.S. or global factors to the local model) have little contribution (if any) to the pricing performance of the local four-factor model. Thus, local versions of the Fama–French–Carhart model appear sufficient. In further unrelated tests we examine whether dually-listed shares should be excluded when constructing factors for pricing local non-dually listed shares. Interestingly, we find better pricing results when factors include dually-listed shares.

[Section 2](#) provides some background on local and hybrid four-factor models. [Section 3](#) describes the sample and data. [Sections 4 and 5](#) report our results, and [Section 6](#) concludes.

2. The global, local and hybrid formulations of the four factor model

2.1. The four factor model

The four factor model of [Fama and French \(1993\)](#) and [Carhart \(1997\)](#) postulates four risk factors that span the cross-sectional distribution of expected stock returns: market, size, value and momentum. In general, market risk is approximated by the excess return on a general stock market index; the size factor is the excess stock return of small firms relative to large firms; value is the excess return of high book to market firms relative to low book to market firms; and momentum is roughly the excess return of “winner” stocks (stock with the highest return in the past year) over past year “loser” stocks.

The four factor model was meticulously tested inside and outside the U.S. markets. Value and momentum premia are found all over the world – see, for example, [Fama and French \(1998\)](#), [Chui et al. \(2010\)](#), and [Asness et al. \(2013\)](#). However, in empirical tests, the four factor model is only partially successful. For example, the four factor model fails to adequately explain returns of portfolios based on sorts of size and momentum (e.g., [Fama and French, 2012](#), and [Gregory et al., 2013](#)).

Despite its evidenced failures, researchers by and large commend the 4-factor model. This is because of the impression that the four factor model has some basis (value and momentum appear everywhere), and because the four factor model pricing performance is superior to that of its existing alternatives (the Capital Asset Pricing Model, for example).

Recent studies challenge the four factor model. [Fama and French \(2015\)](#) propose a five factor model. This elaborated model adds to the original Fama French three factor model two “new” factors that are based on firm profitability and investment. The profitability factor, RMW, is the portfolio return of firms with robust firm profitability minus the portfolio return of firms with weak firm profitability; and the investment factor, CMA, is the portfolio return of firms with conservative firm investments minus the portfolio return of firms with aggressive firm investments. These factors are added following previous studies such as [Novy-Marx \(2013\)](#) and [Aharoni et al. \(2013\)](#) that find, respectively, that the characteristics of expected firm profitability and of firm investment policy affect expected stock returns.

Using U.S. data from 1963 through 2013, [Fama and French \(2015\)](#) find that the five factor model describes average returns better than the three factor model, yet it (the five factor model) is still formally rejected by the data. Interestingly, [Fama and French \(2015\)](#) note that in their sample the addition of the profitability and investment factors eliminates the explanatory power of the value factor.

Another prospective five factor model is that of [Amihud \(2014\)](#) who adds IML (Illiquid stocks minus liquid stocks portfolio returns) to the four factor model and shows that illiquidity is priced. [Amihud et al. \(2015\)](#) examine the illiquidity factor risk premium in 45 countries and show it is higher in emerging countries.

Download English Version:

<https://daneshyari.com/en/article/5063118>

Download Persian Version:

<https://daneshyari.com/article/5063118>

[Daneshyari.com](https://daneshyari.com)