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Why stay-at-home investing makes sense

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ABSTRACT

Despite the benefits of international diversification investors continue to display a preference for home based investments. Given this preference we investigate whether it is possible to mimic the benefits of international diversification via domestically traded products. We test this from the perspective of US investors for 37 countries between 1996 and 2011. We seek to replicate the equity index of each country with domestically traded US products such as industry indices, Multinational Corporations, American Depository Receipts, single country iShares ETFs and Closed-End Country Funds to investigate whether the benefits of international diversification can be exhausted domestically. While the benefits of investing overseas vary significantly across sub-periods, portfolios of US-traded products can replicate 36 of the 37 foreign country indices. These findings are robust to variance in the performance and volatility of the US market relative to other markets. US investors do not need to invest overseas to reap the benefits of international diversification.

1. Introduction

Practitioners and academics alike recommend holding a well-diversified portfolio to reduce the risk of equity investment. The benefits of international portfolio diversification have been extensively highlighted throughout the literature (Driessen & Laeven, 2007; Levy & Sarnat, 1970; Solnik, 1974), as low correlations among national stock markets allow investors to reduce their risk for a given return. Moreover, as highlighted by Baxter and Jermann (1997), given an individual's probable exposure to the economic performance of their domestic market via the property and labour market, it would be advisable to diversify investments internationally to mitigate that exposure. Possible deterrents to foreign investment include foreign investment restrictions, capital controls, transaction costs and asymmetric information. In recent decades the costs and restrictions on foreign investments have fallen substantially, yet investors continue to hold a disproportionate amount of their equity portfolio investment domestically. This phenomenon is known as the home bias puzzle (Ahearne, Griever & Warnock, 2004; Suh, 2005).

The market capitalisation of the US equity market accounts for 31% of the world market capitalisation. In 2011 the Department of the Treasury estimated that US investors hold 86% of their equity holdings in domestic equity and 14% in foreign equity. This implies a large degree of home bias in US portfolio allocations.[1] Traditionally international diversification involves directly investing in equities traded abroad, for which investors need to fully understand local market conditions, such as trading mechanisms, information which may be difficult and time consuming to obtain. Investing in securities that trade domestically and provide international exposure may be an indirect method of reaping the benefits of international diversification, while avoiding the costs and risks of investing abroad.

There exist several indirect routes by which an investor may achieve exposure to foreign equity returns in a domestic setting. Some of the gains from international diversification are considered to be due to differences in industrial structure across countries (Flavin, 2004). Therefore investment in specific industry indices may partially replicate foreign country index returns. US Multinational companies (MNCs) operating in overseas markets may provide significant exposure to foreign country indices. Other products provide access to foreign equities via US

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[1] The phenomenon is not confined to the US. Chan, Covrig and Ng (2005) conduct a study in 26 developed and developing countries and find that home bias exists in every country.

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exchanges such as American Depository Receipts (ADRs) which represent a claim on foreign equities, and exchange traded country funds, such as closed-end country funds (CCFs) and single country iShares ETFs. Using these methods of indirect foreign exposure, we investigate whether it is possible to exhaust the benefits of international diversification by investing only in US-traded products. Using stepwise regressions we form three types of replicating portfolios for each country, the first using US industry indices, the second using US industry and broad market indices and MNCs, and the third using US indices, MNCs, ADRs, iShares ETFs and CCFs. If the benefits of diversifying internationally can be exhausted by investment in domestically-traded products, investors no longer need to invest in equities traded overseas. We conduct our investigation over a 15 year period from 1996 to 2011 and over three sub-periods.

The contributions of our study are as follows. A study of the indirect international diversification benefits of US-traded equity products was conducted by Errunza, Hogan, & Hung, 1999, using data from 1976 to 1993. We extend and update that study, during a period, 1996 to 2011, in which financial markets experienced two periods of high volatility. The early years between 1996 and 2002 include the Asian currency crisis, the dotcom bubble and September 11th attacks and the later years, the global credit crisis and its effects. There have been a number of developments which warrant a more recent investigation of this topic. Firstly, since that study, there is a greater availability of US-traded products which offer foreign exposure, for a greater number of countries, allowing us to increase the number of countries from 16 to 37. Secondly, a substantial increase has occurred in the internationalisation of US MNCs. Table 1 depicts the increasing internationalisation of US MNCs between 1996 and 2010. We use a more robust measure to select our sample of MNCs than used previously. Thirdly, the growing relative importance of industrial versus country diversification has been highlighted in many studies (Baca, Garbe & Weiss, 2000; Cavaglia, Brightman & Aked, 2000; Serra, 2000). Fourthly, a new type of exchange traded country fund, iShares ETF, was introduced in 1996, and has experienced huge growth since its inception. Given these developments we investigate whether the benefits of international diversification can be exhausted via investment in domestically-traded assets in the US.

We use mean variance spanning techniques to test if the addition of foreign country indices to our replicating portfolios significantly shifts the mean–variance efficient frontier. Our findings are as follows. For the full period, we find that the benefits of international diversification can be comprehensively exhausted via all of our replicating portfolios. US investors can attain the benefits of international diversification by investing in equity products traded in their domestic market. Portfolios of industry indices and MNCs span foreign country indices, but when all products are included, ADRs, iShares or CCFs have the largest weighting for most countries. For our three sub-periods the results are more varied. We find the co-movement of foreign country indices with the US market to be increasing over time for all countries. The risk-return performance of foreign indices versus the US market varies from period to period. Prior to 2003, the US outperforms almost all foreign country indices. In the period 2003 to 2007, the US underperforms most foreign country indices and in the period after 2007, developed markets underperform and emerging markets outperform the US. When the US underperforms foreign indices, portfolios which do not include ADRs, iShares and CCFs, do not exhaust the benefits of diversifying internationally. As industry indices and portfolios of MNCs contain only US headquartered companies, their returns are more influenced by the US market than by foreign markets. However, in the periods before 2003 and after 2007, portfolios of MNCs and industry indices do span foreign indices. Portfolios which include ADRs, iShares and CCFs span the foreign market indices in all periods. Our results suggest that US-traded products provide an excellent source of foreign equity exposure and that trading overseas is no longer necessary. While the Errunza, Hogan & Hung (1999) study finds that the diversification benefits can be exhausted domestically for 11 of 16 countries we find that it is possible to replicate 36 out of 37 foreign country indices.

The remainder of the paper is structured as follows. In Section 2 we review the literature on international diversification benefits of US equity products. In Section 3 we describe the data used. Section 4 details our methodology. In Section 5 we present our results and finally in Section 6 we summarize our findings and describe our conclusions.

2. Literature review

The benefits of international portfolio diversification have long been highlighted throughout the literature (Eun & Resnick, 1984; Levy & Sarnat, 1970; Solnik, 1974). A study in 2007 by Driessen & Laeven finds that international diversification benefits exist for almost all of the 52 countries examined. Although correlations between country indices increased during the 2007–2009 financial crisis, the long term benefits of international diversification have been defended by Asness, Israelov and Liew (2011). Despite this, investors in the US and elsewhere continue to hold a large proportion of their equity investments in domestic assets (Morse & Shive, 2011). We consider whether home bias might be exaggerated and that a more comprehensive analysis of the home bias puzzle requires a more careful distinction between 'domestic' and 'international' portfolio investment, as suggested by Cai and Warnock (2012) who argue that the degree of home bias is overestimated when home-based foreign exposure is not counted as 'foreign' investment. Errunza, Hogan & Hung (1999) introduce the concept of foreign-based international diversification where investors hold foreign assets that only trade in foreign markets, and home-based international diversification that is achieved by holding only equity products that trade in the investor's home country. They find that US investors can mimic some foreign market returns with domestically-traded securities by investing in industry indices, MNCs, CCFs and ADRs between 1976 and 1993. Using mean variance spanning tests they find that the replicating portfolios provide diversification benefits in all cases for 8

Table 1
Increasing internationalisation of US firms.

Number of firms	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Panel A: *% foreign sales*															
% foreign sales	20.44	20.65	21.66	22.88	22.63	23.19	24.20	25.90	26.98	27.58	28.04	29.61	30.32	30.34	30.98
Panel B: *number of geographic segments*															
Number of segments	2.25	2.34	2.46	2.62	2.63	2.66	2.78	2.84	2.90	2.97	3.04	3.04	3.10	3.22	3.33
Panel C: *number of regions*															
Number of regions	1.87	1.94	1.99	2.07	2.02	2.04	2.08	2.13	2.16	2.19	2.25	2.25	2.30	2.31	2.35

Notes: This table shows the average level of internationalisation of US firms selected from the Russell 1000 over a 15 year period. Panel A lists the average percentage foreign sales of all firms in each year. Panel B lists the average number of geographic segments in which the firms record material sales as specified in their annual accounts. Panel C lists the average number of regions of the world in which the firm records material sales using the classification method of Aggarwal, Berrill, Hutson, and Kearney (2011).