Contents lists available at ScienceDirect

## International Review of Financial Analysis

## Foreign portfolio equity holdings and capital gains taxation

ABSTRACT

has the opposite effect.

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#### ARTICLE INFO

Article history: Received 25 July 2016 Received in revised form 15 February 2017 Accepted 30 March 2017 Available online 06 April 2017

JEL classification: F39 G15

Keywords: Foreign portfolio equity holdings Capital gains tax source Arellano-Bover/Blundell-Bond dynamic panel estimation Least Squares Dummy Variable Corrected (LSDVC) estimation

### 1. Introduction

International taxation is widely recognised as a significant barrier to international diversification (Cooper & Kaplanis, 1986; Gordon & Bovenberg, 1996). Early theoretical studies, such as Black (1974) and Stulz (1981), examined the link between taxes and holding of domestic and foreign securities. Using a model where taxes are proportional to the net holdings of foreign assets and all risky assets are traded. Black showed that, owing to cross border taxation, optimal portfolios tend to be relatively heavy in domestic assets and light in foreign assets. Using an international asset pricing model, where holding of foreign securities is costly, Stulz showed that barriers to international investment in the form of a tax that is proportional to the absolute holdings of risky foreign assets can lead to a situation where not all risky assets are traded and optimal investment portfolios are biased in favour of domestic assets. Gordon and Varian (1989) showed that small countries can affect security prices in their respective domestic markets, but large countries can also affect securities prices in the international market. This implies that, through appropriate taxation, a country can induce its residents to construct portfolios that are biased towards domestic equity. Dammon and Spatt (2012) suggest that taxation can have a first-order effect on investor trading behaviour, which affects the portfolio choices and ultimately asset prices. The literature on optimal taxation in the international economy is vast and reflects the importance of the topic.

Using panel data from 23 developed countries over the 2001–2011 period and employing the Arellano-Bover/

Blundell-Bond dynamic panel estimation technique, this paper shows that the source country capital gains tax

has a negative and statistically significant impact on foreign portfolio equity holdings. On average, a 1 percentage

point increase in capital gains tax rate leads to 0.018% decrease in foreign equity holdings. The negative relation-

ship between the capital gains tax and foreign equity holdings is found to be robust to alternative measures of the source country capital gains tax, inclusion of the dividend imputation tax rate, foreign dividend tax withheld rate,

dividend tax credit and other control variables (the source and host country financial wealth, trade, exchange

rate volatility, foreign listing and institutional quality). We find that a 1% increase in financial wealth of the source

(host) country leads to, on average, a 0.428% (0.427%) increase in foreign equity holdings. An improvement in in-

stitutional quality has a positive effect on foreign equity holdings but an increase in the exchange rate volatility

In most countries, taxes are levied on corporate dividend income and capital gains earned on foreign equity holdings. While a few studies have examined the effect of a dividend tax on foreign equity holdings, none of the available studies appear to have considered the impact of a capital gains tax.<sup>1</sup> This paper aims to fill this gap in the existing literature. Specifically, this paper empirically evaluates the impact of a capital gains tax, imposed by the source country (i.e., the country from where foreign portfolio investment originates),<sup>2</sup> on the disposal of foreign portfolio equity holdings of corporates.

Within the context of this paper, foreign portfolio equity holdings are equity investments that comprise less than 10% of the controlling







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<sup>&</sup>lt;sup>1</sup> For example, while focusing on the impact of dividend taxes, Bond, Devereaux, and Klemm (2007), Desai and Dharmapala (2011) and Amiram and Frank (2016) assume that the capital gains tax rate is zero (i.e., the investee countries do not tax capital gains earned by foreign portfolio investors).

<sup>&</sup>lt;sup>2</sup> The source country corporates considered in this study have non-substantial shareholdings in foreign corporates.

rights (IMF, 1993).<sup>3</sup> The source country corporates considered in this paper have non-substantial shareholdings in foreign corporates.<sup>4</sup>

In order to evaluate the impact of a capital gains tax on foreign equity holdings, we use data collected from 23 developed economies over the 2001–2011 period. Two alternative measures of capital gains tax are used. The first measure is labelled as the "capital gains tax rate source", which is the source country tax rate on capital gains arising from the disposal of foreign shares held by the source country corporates. The second measure is labelled as the "capital gains tax source", which is the actual tax burden per unit of initial investment. The capital gains tax source is calculated by multiplying the capital gains arising from the disposal of foreign shares held by the source country corporates by the capital gains tax rate source. We also consider the associated dividend imputation rate, the dividend tax withheld and the dividend tax credit.

The empirical results, based on Arellano-Bover/Blundell-Bond dynamic panel estimation and Least Squares Dummy Variable Corrected (LSDVC) estimation, suggest that a capital gains tax levied in the source country has a negative and statistically significant impact on foreign portfolio equity holdings. This result is found to be robust across alternative measures of the capital gains tax in the source country as well as inclusion of the dividend imputation tax rate, foreign dividend tax withheld and dividend tax credit.

The rest of this paper is structured as follows. Section 2 contains a review of the related literature. An empirical model is specified in Section 3. Data and variable construction strategies are discussed in Section 4. Section 5 contains empirical results and Section 6 concludes the paper.

#### 2. Related literature

Return on equity investment depends of the size of after tax capital gains and dividend income. Cross border equity investment return is affected by taxation in both foreign and source countries. These taxes include (i) capital gains withholding and dividend withholding taxes in foreign countries and (ii) capital gains and dividend taxes/credits in source countries.

This paper focuses on the impact of the source country capital gains tax on foreign equity holdings of corporates, which has not been the subject of any existing study and hence the literature reviewed in this section deals broadly with the impact of international taxation on investments returns.<sup>5</sup> Some studies, like Demirguc-Kunt and Huizinga (1995) and Mishra (2014) have considered the impact of international taxation on equity investment within the context of a single country. However, a large majority of studies use country level panel data to examine the impact of taxation on equity investment. We start by focusing on the studies that have considered the impact of capital gains related taxes on equity investment and towards the end discuss the impact of dividend related taxes.

#### 2.1. Capital gains related studies

In a widely-cited study, Demirguc-Kunt and Huizinga (1995) examine the impact of non-resident taxation and other investment costs on the required rate of return in emerging stock markets. Using data from January 1987 to April 1992 and considering the perspective of a US investor investing in the rest of the world, they conclude that a capital gains withholding tax levied on foreign portfolio investors increases the pre-tax required rate of return. The capital gains tax burden variable used in this study is based on the capital gains tax withholding rate in foreign countries for the US investors. Using data on portfolios that include only stocks listed on the New York Stock Exchange, Bergstresser and Pontiff (2013) compare the impact of capital gains and dividend taxation on portfolio performance. Based on the data collected from June 1927 to June 2009, they show that the effect of a capital gains tax on portfolio performance can be very different from the effect of a dividend tax.

Mishra and Ratti (2013) and Mishra (2014) examine the impact of capital gains tax withheld on home equity bias. Using data from 49 countries over the 2001–2007 and 2001–2009 periods, Mishra and Ratti (2013) report that the impact of a capital gains tax withheld on home equity bias is statistically insignificant. Using data from Australia over the 2001–2009 period, Mishra (2014) reached the same conclusion. Both studies are based on Arellano-Bover/Blundell-Bond Estimation technique. The capital gains tax in these studies is calculated by multiplying the capital gains, earned by a home country investor in a foreign country, by the capital gains tax withheld rate in the foreign country.

Using data on mutual funds from 48 countries over the 1999–2000 period, Chan, Covrig, and Ng (2005) show that a decrease in the country-level withholding tax leads to a significant increase in foreign investment. Aviat and Couerdacier (2007) examine the impact of taxation on dividends within the context of bilateral tax treaties. They find that taxes have positive and significant effect on bilateral banking claims. Using the response to distinctive treatment of a subset of foreign dividends in the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003, Desai and Dharmapala (2011) investigate the impact of dividend taxes on portfolio choices. Bekaert and Wang (2009) find that a higher withholding tax in the target country is associated with a relatively large underinvestment bias; whereas a higher tax in the holder countries suggests a relatively closed country, which may be highly home biased. This study is based on data collected in 1997, 2001, 2002, 2003, 2004 and 2005.

While focusing on the stocks included in the Centre for Research in Security Prices (CRSP) database, Dai, Shackleford, and Zhang (2013) examine the impact of a capital gains tax on stock return volatility. They find that an increase in capital gains tax rate decreases the stock return volatility. Furthermore, following the 1978 and 1997 capital gains tax reductions in the US, the nondividend-paying stocks exhibit higher levels of return volatility compared to dividend-paying stocks.

#### 2.2. Dividend tax related studies

Booth (1987) find that changes to the dividend tax credit have a differential impact on the Canadian equity ownership. While focusing on Australia's dividend imputation system, Cannavan, Finn, and Gray (2004) argue that, in a small open economy, the cost of capital of a firm is not affected by the imputation system because the marginal stockholder is a foreign investor who receives no benefit from the imputation tax credits. Pattenden and Twite (2008) examine the impact of changes in Australia's corporate dividend policy around the introduction of a dividend imputation tax system. They find that gross dividend payouts were more volatile under dividend imputation system. Edwards and Shevlin (2011) suggest that, in an integrated corporate tax system, the resident shareholders receive a tax credit for corporate tax paid that can be used to offset the personal tax on dividend income.<sup>6</sup>

<sup>&</sup>lt;sup>3</sup> We interchangeably use the terms "foreign portfolio equity holdings," cross border equity holdings," and "foreign shares."

<sup>&</sup>lt;sup>4</sup> Non-substantial shareholding is the shareholding that does not exceed a threshold fraction of a company's issued capital. The participation quota of share capital or voting rights above which a shareholding is considered substantial varies over time and across countries. For example, the threshold is 1% in Germany and 5% in Italy (Jacob & Jacob, 2013).

<sup>&</sup>lt;sup>5</sup> In a very interesting recent study, Brooks, Godfrey, Hillenbrand, and Money (2016) consider the impact of various measures of taxation on financial performance of the UK firms. However, they do not consider the issue of cross border equity holdings.

<sup>&</sup>lt;sup>6</sup> Other related studies include Jacob and Jacob (2013) and Becker, Jacob, and Jacob (2013). Making use of the records of 6035 firms from 25 countries over the 1990–2008 period, Jacob and Jacob compile a comprehensive international dividend and capital gains tax dataset. This dataset is used to investigate the tax-based explanations of corporate payout. They find that the effect of a tax penalty on dividends, compared to capital gains, corresponds closely to (i) a firm's propensity to pay dividends and share repurchases and (ii) the amount of dividends and shares repurchased. Using country level panel data from 1990 to 2008, Becker et al. show that high taxes on corporate payout encourage internal equity finance. They argue that payout taxes have a large impact on the dynamics of corporate investment and growth.

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