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Time-varying investment barriers and closed-end country fund pricing

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ABSTRACT

We examine the effect of time-varying investment barriers on the pricing of UK closed-end emerging market country funds. We find that a direct measure of capital market segmentation is significantly negatively related to both country fund stock return and Net Asset Value (NAV) return of the fund, but there is no relation to the premium. Also we find some evidence of a positive relation for an indirect barrier (inflation variability) and stock return, NAV return and the premium. Overall our results support an information hypothesis of the impact of investment barriers on closed-end fund pricing.

1. Introduction

Closed-end country funds offer an opportunity for 'stay-at-home' investing abroad. But what happens when investment barriers make foreign investment less accessible? The traditional explanation associated with Bonser-Neal et al. (1990) is that investment barriers have led to higher premiums[1] as investors are willing to pay more to invest in an otherwise inaccessible market, raising the share price of the fund. In an era of liberalised markets, we suggest that an information hypothesis is more relevant, where investors respond negatively to information about increases in market inaccessibility. In this paper our contribution is to bring together both the topics of market integration and segmentation and closed-end fund pricing to examine the effect of time-varying direct and indirect investment barriers on the pricing of UK closed-end country funds in emerging markets.[2] We argue that closed-end country fund pricing reflects the information asymmetries between home and foreign investors who are constantly adjusting to information both about their own markets and the foreign market. Extending the 'information explanation' of Froot and Ramadorai (2008) we suggest that investors both at home and abroad respond positively (negatively) to the information conveyed by increases (decreases) in foreign market openness and that this affects both the country fund net asset value (NAV) return and the share price return.

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[1] A premium results when the share price is above the NAV, and a discount (negative premium) occurs when the share price is below the NAV. Here we use one term 'premium' to refer to both positive and negative premiums (discounts).

[2] For recent evidence on closed-end fund pricing see Bredin et al. (2014) and Alexander and Peterson (2016).

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Our paper further contributes by applying a time-varying measure for market segmentation, consistent with the arguments of Bekaert and Harvey (1995), who find that the liberalisation of equity markets is not a once-for-all occurrence. We use a measure that indicates the proportion of the market that is inaccessible to foreigners. Bekaert et al. (2011) argue that this measure is 'the single most important economic explanatory variable, accounting for the largest share of the explained segmentation variance' (p. 3877).

We hypothesise that increasing market segmentation affects closed-end country fund pricing as the value of the underlying assets decreases as local investors absorb the negative information being sent out by their markets. This results in a drop in the NAV. For a brief period there can be very high premiums (consistent with Chandar and Patro, 2000) but then the stock price adjusts downwards as domestic investors react to the loss in value of the underlying assets. Therefore we test three hypotheses on the impact of direct barriers on closed-end stock price return, NAV return and premium:

Hypothesis 1: Direct investment barriers are negatively related to the closed-end fund stock price return;

Hypothesis 2: Direct investment barriers are negatively related to the closed-end fund NAV return;

Hypothesis 3: The closed-end fund premium is not significantly related to direct investment barriers.

Indirect investment barriers can also deter investors from investing in foreign markets (Carrieri et al., 2013). Several studies have also looked at the role of indirect barriers in the pricing of closed-end country funds with conflicting results. Following these studies of indirect investment barriers, we also include measures that estimate the illiquidity, inflation variability and lack of economic freedom as indirect investment barriers.

In summary the main contributions of our study are that we find direct investment barriers continue to impact the pricing of emerging closed-end country funds even after the countries have officially liberalised. An increase in market inaccessibility is consistently accompanied by a significant decrease in the stock price return and the NAV return of UK closed-end country funds. Our results show that both foreign and home investors react negatively to decreases in market accessibility and that this decreases both the NAV and the stock price. Although there can be a temporary effect on the premium, as both the NAV and stock price decrease, we do not find a significant long term relation between the premium and direct investment barriers. If we were to restrict our analysis to examining the premium alone, as is the case with most closed-end fund studies, the pricing reactions in the stock price and the NAV would be hidden. Finally we find some evidence of a positive relation for one of our indirect barriers (inflation variability) and stock price, NAV return and premium.

The remainder of this paper is organised as follows: Section 2 describes our data. Section 3 presents the empirical results and Section 4 the robustness tests on our results. Section 5 concludes.

2. Data

We collect monthly data from Datastream on the complete sample of seventeen UK traded closed-end country funds investing in single emerging markets from 31 December 1993 to 31 December 2009. We define the closed-end fund premium in Eq. (1) as the difference between the natural log of the fund stock price and natural log of the NAV:

$$PREM \equiv lnShareprice - lnNAV \tag{1}$$

We use a time varying measure of investment restriction, Edison and Warnock (2003), to represent the level of capital control exercised by a country. This measure indicates the proportion of the stock market that is inaccessible to foreign investors. We appreciate that a situation could occur in which the overall market value of the market has increased without the investable portion increasing, giving the impression that there has been a relative increase in market restrictions. However, we feel it is reasonable to assume that the stocks available for foreigners are usually the major companies and therefore among the most liquid, and therefore they will increase along with the remainder of the market.

For our three indirect investment barriers we firstly, adapt the Amihud (2002) illiquidity measure in Eq. (2) to proxy the monthly illiquidity of the foreign market:

$$CILLIQ_{c,t} = \sum_{d=1}^{Dt} |R_{c,d}|/VOL_{c,d} \tag{2}$$

where $CILLIQ_{c,t}$ is the illiquidity of market c at time t. The daily absolute return and daily sterling volume of country equity index c on day d are given by $R_{c,d}$ and $VOL_{c,d}$. Secondly, inflation variability *(VINFL)* is proxied by the standard deviation of the monthly inflation rate from the IMF International Financial Statistics using a 3 year rolling period ending in month t (Nishiotis, 2004). Thirdly, we use the Economic Freedom of the World Index (Gwartney and Lawson, 2013) creating a measure of the lack of economic freedom, or the economic freedom barrier (EFB).

We test for a relation between the components of fund premium, i.e. the stock price and NAV, and the direct and indirect capital control barriers in Eq. (3):

$$\begin{aligned} SPRET_{f,c,t} = {} & \alpha_f + \beta_1 EW_{c,t} + \beta_2 CILLIQ_{c,t} + \beta_3 EFB_{c,t} + \beta_4 VINFL_{c,t} \\ & + \beta_5 UKMKT_t + \beta_6 UKPREM_t + u_{f,c,t} \end{aligned} \tag{3}$$

where $SPRET_{f,c,t}$ is the return on the stock price of fund f from market c at time t, α_f is the fixed effects parameter, *EW* is the measure of capital control, *CILLIQ* is the country illiquidity measure, *EFB* is the economic freedom barrier measure, *VINFL* is the variability of the inflation, *UKMKT* is the UK market return and *UKPREM* is the arithmetic average of the discount of UK funds investing in the UK.

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