An Analysis of Closed-end Fund Puzzle for Emerging Capital Markets

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Abstract. *This paper analyzes the closed-end fund puzzle for an emerging capital market, respectively the Romanian one. Comparatively to more developed markets, as long as small markets are often very illiquid, it has to be used some specific valuation techniques in order to estimate the market values for closed-end funds. Also, one problem is this estimation can be made only in some (punctual) moments.*

Key words: closed-end funds; market efficiency; emergent capital markets; Romania.

JEL Codes: G14.
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1. Introduction

The "closed-end funds puzzle" is defined as the empirical finding that closed-end fund shares are typically sold at prices not equal to the per share market value of assets the fund holds (Lee, Shleifer, Thaler, 1991). The closed-end fund puzzle is often explained based on agency costs, tax liabilities, illiquidity of assets, investor sentiment, etc. Also, this issue is often related to the market efficiency hypothesis (see Zweig, 1973, De Long, Shleifer, Waldman, 1990): it can be argued that this difference is an anomaly that can prove the market inefficiency (see, also, Dragotă, Mitrică, 2004, Dragotă, Dragotă, Stoian, 2004). This paper analyzes the closed-end fund puzzle for Romanian capital market. In this context, Bucharest Stock Exchange, due to its small capitalization and low liquidity, can be considered as a proxy for other similar emerging markets.

The state of Romanian closed-end funds has to be analyzed in an historical perspective. Romania was under Communist regime in the period 1947-1989. In December 1989 Romanian citizens claimed their right to democracy and Romania has started reforms in the main sectors. It has to be noticed that, in Romania, at the beginning of 1990 years, Mass Privatization Programme (PPM) had a significant influence on Romanian financial market. In 1991, according to the first law of privatization, were formed five Private Property Funds (FPPs) to which were allocated 30% of the common stocks of the companies owned by the Romanian State, but not including strategic and utilities companies. At the beginning of 1995, almost 15 millions peoples used their vouchers resulted from PPM in order to receive shares of over 5,000 companies owned by the Romanian State. These companies became opened companies and their shares were traded, mostly, at Bucharest Electronic Market, RASDAQ (BER). Those companies which fulfilled each condition imposed by Romanian National Securities Commission (CNVM) were traded at Bucharest Stock Exchange (BSE), re-opened in 1995.

The five Financial Investments Funds (SIFs), somehow similar, as organization, to closed-end funds in US or investment trusts in UK, are the result of reorganization, in 1996, of FPPs. During PPM, almost 2.2 millions peoples invested their vouchers to SIFs. At this moment, according to Romanian regulations, an individual or a group of investors sharing the same interests can not detain more then 1% from SIFs common stocks. SIFs portfolios are heterogeneous, due to the fact that, during PPM, first it was transferred to peoples the 30% of the common stocks of State owned enterprises held by FPPs. After "spending" the 30%, in order to end the privatization process, there was used the rest of the shares, totally owned by the State, and managed by State Property Fund (FPS). At the end of PPM, the new SIFs had no shares to the most important Romanian enterprises, and their portfolios were formed by compensating the lost shares with new ones from FPS' stake. The result is that, even at this moment, SIFs hold many

shares, but more than half of them are those of unlisted, small size or having no development potential companies. The most important part of SIFs portfolios is represented by the shares detained at commercial banks (BCR and BRD), which were not an opportunity for the investors at the moment of privatization. Therefore, even until now, the percent around 6% held by each SIF on banking companies represents the most valuable assets.

The rest of the paper is organized as follows. The adjusted methodology used in order to test the closed-end fund puzzle is presented is Section 2. Section 3 offers an example and the concluding remarks of this study.

2. An adjusted methodology in order to investigate the closed-end fund puzzle for emerging markets

In the case of developed markets, the closed-end puzzle consists in an empirical observed anomaly: closed-end fund shares are typically sold at prices not equal to the per share market value of assets the fund hold. In the case of liquid markets, with shares traded daily, this phenomenon is very easy to be found as long as the prices both for the closed-end fund shares and for the shares included in its portfolio are available almost in real time. If one investor on capital markets holds investments portfolios, including shares listed on Stock Exchange, present value of his or her portfolio will be estimated based on market capitalisation of shares included in that portfolio. Practically, the present market value for a portfolio (MV), at one moment, can be estimated based on equation (1):

$$MV = \sum_{i=1}^{n} q_i \times P_i - Debts \qquad (1)$$

with:

i = type of the different assets included in the portfolio;

q_i = the quantity of *i* - type assets;

P_i = price of *i* - type assets (for unlisted shares can be considered the market value of those shares).

This is the case for a closed-end fund, too. However, some adjustments have to be done. Therefore, the prices should be adjusted by applying different premiums or discounts. For instance, in some cases, if the investors are larger (controller) shareholders, prices taken from the market can not be considered as a proxy an appropriate approximation for their fair market value as long as they quantify a minority shareholders interest. In this case, it has to be applied a control premium, and then the adjusted price will be higher, at a P_i^* level ($P_i^* \geq P_i$). On the other hand, as long as it is considered a large participation, a discount for large portfolios can be taken into account (Evans, Bishop, 2001, p. 201). In this case, the prices should be adjusted by applying a discount, and then the price will be lower, at a P_i^* level (here, $P_i^* \leq P_i$). If we consider such adjustments, the adjusted present market value (MV*) for the portfolio will be:

$$MV^* = \sum_{i=1}^{n} q_i \times P^*_i - Debts \qquad (2)$$

On the other hand, institutional investors, like closed-end funds, are themselves listed to Stock Exchange. For an informational efficient market, investors, implicitly considered to be rational, will evaluate shares in a right way. In the case of an efficient market, market capitalisation for these investment funds (MC) will be equal to the present market value of its portfolio itself, so:

$$MV^* = MC \qquad (3)$$

On the other side, as long as market capitalisation for these institutional investors (MC) will be significant different from the present market value of its portfolio itself (MV^*), it can be illustrated the closed-end fund puzzle: practically, investors valuate differently the same asset, in one way if it is listed individually, and in another way if it is included in a portfolio.

As we have mentioned, this test is very easy to be applied for liquid markets, but it become questionable for emerging markets, with low liquidity. In this case, for each asset valuation is very important to use a particular technique. As long as market prices are not available, these techniques are based mainly on International Valuation Standards (2007). In order to estimate these market values, some issues are relatively unambiguous. For instance:

1) Deposits and monetary investments (current accounts, treasury bills, deposits etc.) will be evaluated at market prices, available on the market.

2) Unlisted bonds will be evaluated by taking into account daily interest from the investment moment and the principal. For the listed bonds the evaluation was made at the market price. As long as coupons and principal are specified in the contract, and the risk is not significant different from share to share, this assumption can reasonable hold.

3) Shares held at opened funds will be evaluated at unitary net worth value, which can be considered a fair market value.

4) For the shares constantly traded on Bucharest Stock Exchange, the evaluation was made by taking into account price per share from the last trading session (their value is equal to market capitalization of the shares held by SIFs at the moment of evaluation).

Other issues are still disputable, and in these cases, some assumptions have to be done. For instance, in December 2005, Romanian Government sold 61.88% from the shares of Romanian Commercial Bank (BCR) to Erste Bank at a price of 3.75 billion euros. Therefore, we considered it as an appropriate price in order to estimate the market value of the shares held by SIFs. It was, also, took into consideration a control premium of 30% for majority stakes, and, thus, the value of a package of 6% from BCR shares were estimated at 254.5 million euros. The percentage of shares held by SIFs at BCR is 6%, excepting SIF Oltenia which detains a package of 6.12%. The level of 30% for the control premium can be argued based on the general practice in valuation. Also, in a study made on Romanian over the counter market (BER), Dragotă et al.

(2007) have found that control premium in the period 2002-2004 had a mean of 79.96% and a median of 44.62%. In this case, based on economical assumptions related to the characteristics of Romanian Commercial Bank, the discount premium was adjusted to 30%.

The limits of this test are obvious. Practically, on a capital market with low liquidity, the test can be made for some assets only when information regarding market prices is available.

3. An example and concluding remarks

In order to apply this proposed methodology, the assets of Financial Investment Funds (SIF-s) were valuated, based on the firm market values of each category of assets, at December 31st, 2005 (see Table 1 and the notes below). This valuation was made according to the requirements of *International Valuation Standard Committee*. This example is based on Căruntu (2005).

SIFs assets value at December 31st, 2005

Table 1

- mil. euros-

No.	Asset	SIF Banat Crişana	SIF Moldova	SIF Transilvania	SIF Muntenia	SIF Oltenia
1	Deposits and monetary investments (current accounts, treasury bills, deposits, bank certificates) i)	10.9	28.1	11.8	9.9	4.6
2	Bonds (municipal and corporate) ii)	3.4	1.0	0.6	1.7	0.0
3	Shares held at opened funds iii)	0.2	0.3	0.0	0.3	0.2
4	BRD iv) (each SIFs held at least 5% from BRD Group Societe Generale)	119.3	131.0	129.8	136.7	138.6
5	Other blue-chips (TLV, SNP, RRC, BIO, ATB, SCD)iv)	42.9	44.1	13.3	16.5	137.6
6	Other BSE shares iv)	111.2	2.4	20.9	0.8	20.7
7	BER listed and traded companies iv)	18.1	17.3	68.8	41.6	42.6
8	BCR v)	254.5	254.5	254.5	254.5	259.5
9	Other closed banks (Banc Post. Eximbank) vi)	4.7	4.5	4.5	0.0	4.8
10	Other closed companies vii)	24.5	5.3	39.1	32.9	12.8
11	Other shares (unlisted traded companies at BSE. opened unlisted companies) vii)	2.1	11.8	0.4	9.5	8.7
SIFs assets value		379.1	287.8viii)	331.1	291.9	413.4

i) Assets from the first category were evaluated at market prices.

ii) Unlisted bonds were evaluated by taking into account daily interest from the investment moment and the principal. For the listed bonds the evaluation was made at the market price.

iii) Assets from the third category were evaluated at unitary net worth value, which is a fair market value.

iv) For assets in 4th – 6th category, the evaluation was made by taking into account price per share from the last trading session in 2005 (their value is equal to market capitalization of the shares held by SIFs at the

moment of evaluation). But, for assets no.7, due to low liquidity on BER, we used the values, official, estimated for these shares, by CNVM regulations.

v) In December 2005, Romanian Government sold 61.88% from the shares of Romanian Commercial Bank (BCR) to Erste Bank at a price of 3.75 billion euros. Therefore, we considered it as an appropriate price in order to estimate the market value of the shares held by SIFs. It was, also, taken into consideration a control premium of 30% for majority stakes, and, thus, the value of a package of 6% from BCR shares were estimated at 254.5 million euros. We emphasize that the percentage of shares held by SIFs at BCR is 6%, excepting SIF Oltenia, which detain a package of 6.12%.

vi) In order to estimate the market value for assets in the 9th category, it was used the regulation of National Bank of Romania (BNR).

vii) Assets from the 10th and 11th category were evaluated according to CNVM regulations. SIFs detain many shares to unlisted or non-traded companies, and it was difficult to evaluate them to a market price. As a consequence, the value of those shares is estimated according to official methodology by using a correction coefficient applied on total equity of the issuer company, which depends on the percentage of common stocks detained by SIFs to that issuer. The percentage of common stocks held by SIFs is multiplied with total equity of the issuer company and then corrected with 15% if SIFs hold between 33% and 50% from common stocks, 25% if SIFs hold between 5% and 33%, and 50%, if SIFs hold less then 5%. In those cases where SIFs are the major shareholders or detain stakes to banking or insurance companies there is applied no correction coefficient. Basically, the evaluation of unlisted or non-traded shares held by SIFs is made at a book value. This value can be considered prudent.

viii) SIF Moldova total debts comprise also potential debts out the balance sheet are valued at 10 mil. Euro.

Based on proposed methodology, it can be proved the fact that at the moment of the estimation, SIFs portfolio' present market value did not fully reflect their assets value (see Table 2):

SIFs market capitalization vs. market present value at December 31st, 2005

Table 2

-mil. euros-

Assets	SIF Banat Crişana	SIF Moldova	SIF Transilvania	SIF Muntenia	SIF Oltenia	SIFs (total)
1.Deposits and monetary investments	10.9	28.1	11.8	9.9	4.6	65.4
2. Municipal and corporate bonds	3.4	1.0	0.6	1.7	0.0	6.7
3. Shares held at opened funds	0.2	0.3	0.0	0.3	0.2	0.9
4. BRD	119.3	131.0	129.8	136.7	138.6	655.5
5. Other blue-chips(TLV, SNP, RRC, BIO, ATB, SCD)	42.9	44.1	13.3	16.5	137.6	254.4
6. Other BSE shares	111.2	2.4	20.9	0.8	20.7	155.9
7. BCR (evaluate at price paid by Erste Bank, including a control premium of 30% for majority stake)	254.5	254.5	254.5	254.5	259.5	1,277.6
8. Total liquid assets	542.4	461.4	430.9	420.4	561.2	2,416.4
9.Total debts	51.6	58.2	54.8	59.5	65.2	289.3
10. Market present value, based on market value of assets included in SIF-s portfolio=Total liquid assets (8) – Total debts (9)	490.8	403.2	376.1	360.9	496	2127.1
11. SIFs market capitalization	365.7	317.6	311.9	375.3	405.5	1,776.0
12. Difference between market present value and SIFs market capitalization	125.1	85.6	64.2	-14.4	90.5	351.1

Taking into account only the first 6 components of assets portfolio and the market value of BCR shares, SIFs portfolios present market value (corrected by the level if debts) was higher than their market capitalization value (with one exception – SIF Muntenia). For SIF Muntenia, due to its particular portfolio, there was a difference for 14.4 millions euros. However, if there were taken into account participations on BER listed and traded companies, other closed banks or closed companies (see Table 1) its state will be the same as in the other four cases. The closed-end funds puzzle can be proved for the Romanian capital market, too.

Concluding, even the test is not as precise as the similar test performed on developed capital markets it can be proved that closed-end fund puzzle is present on emerging capital markets, too. Somehow, the state of Romanian capital market is relative similar to the state from developed countries.

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