Beware the warrants

By Spyros Pagratis[i]

Current provisions for HFSF's exit from Greek banks risk undermining a smooth transition to full private-sector ownership

According to the capital needs assessment that was conducted by the Bank of Greece in early 2012, the four "core banks", namely National Bank of Greece, Eurobank, Alpha Bank and Piraeus Bank, need €27.5 billion of capital injections. For private shareholders to retain control of core banks they need to subscribe for no less than 10% of the newly issued shares. The rest will be bought by the Hellenic Financial Stability Fund (HFSF).

But current provisions for the HFSF to exit from Greek banks too early, risk creating self-reinforcing market dislocations. By offering too many free warrants to private investors, at predetermined exercise prices, share prices could be driven consistently away from fundamentals. That could undermine the smooth transition to full private-sector ownership of the Greek banking system. Thus I suggest some policy response.

Institutional context

The tools and terms of the HFSF recapitalisation framework are set out in the Cabinet Act 38 of 9 November 2012. They provide that the offer price needs not to exceed the minimum of: i) 50% of the average price of the stock during the previous 50 trading days and ii) the closing price the day before the offer price is specified. Also the offer price has to be the same both for private investors and the HFSF.

The recapitalisation framework makes provisions for HFSF exit from bank ownership by offering warrants to private investors participating in a capital increase. For each new share acquired, the investor receives, for free, a fully negotiable Bermudan call warrant on bank shares.[1] Such a warrant offers the option to buy, at a given exercise price, bank shares that the HFSF acquired through the capital increase.

Each warrant corresponds to a number of shares that depends on the extent of private investors' participation in the capital increase. For example, if 10% of the capital increase is covered by private funds, with the remaining 90% by the HFSF, then the number of shares that corresponds to each warrant is 9, i.e. 90/10. Similarly, if 12% of the capital is covered by private investors, the number of shares per warrant falls to 7.33 (i.e. 88/12) and so on.

National Bank of Greece, Alpha Bank and Piraeus Bank proceeded with plans to raise 12% of the required capital, with 88% covered by the HFSF, offering 7.33 warrants per new stock.[2] Warrants can be exercised biannually over the next 4.5 years. The

[1] Bermudan call warrants are call options exercisable at the date of expiration and on predetermined exercise dates before expiration. They combine features of American options, which can be exercised any time before their expiration date, and European options, which can only be exercised at expiration.

[2]Eurobank was recapitalised entirely by the HFSF because of particular difficulties in raising the minimum 10% private participation.

exercise price of each warrant is set to be equal to the offer price of new share, with an interest rate of 3% plus a spread increasing by 100 bps per annum. The intention of the legislature was to motivate private investors to exercise their warrants as soon as possible.

Warrants leverage

With such a generous gift of almost eight stock options per new share offered, a small increase in the ex-rights price, above the offer price, would imply an eight-times larger mark-to-market gain for investors. That could trigger a self-reinforcing cycle of ever increasing shares prices before the capital increase. A small increase in the share price above the exercise price of warrants would lead to mark-to-market gains that would spark an even stronger rally in share prices. I illustrate this with an example.

Suppose that a bank is in the process of raising 12% of required capital through private investors and the rest 88% from the HFSF. Suppose that the share offering to private investors is through a rights issue, with an offer price €0.45 per new share and a ratio of 2 new shares for every existing one. If the share is currently trading at €1 then its implicit ex-rights price is €0.63, i.e. $\frac{(1\times1+2\times0.45)}{1+2}$.

But private investors know that, for each new share, they will also receive a free warrant. Such a warrant will offer them the option to buy 7.33 additional shares at the offer price €0.45, plus a small margin that I ignore here for simplicity. Such a warrant is valuable and its value depends on the implicit ex-warrants price of the stock, i.e. the price of the stock following full exercise of warrants. Given the stock's implicit ex-rights price of €0.63, its implicit ex-warrants price is €0.48, i.e. $\frac{3\times0.63+2\times7.33\times0.45}{3+2\times7.33}$.

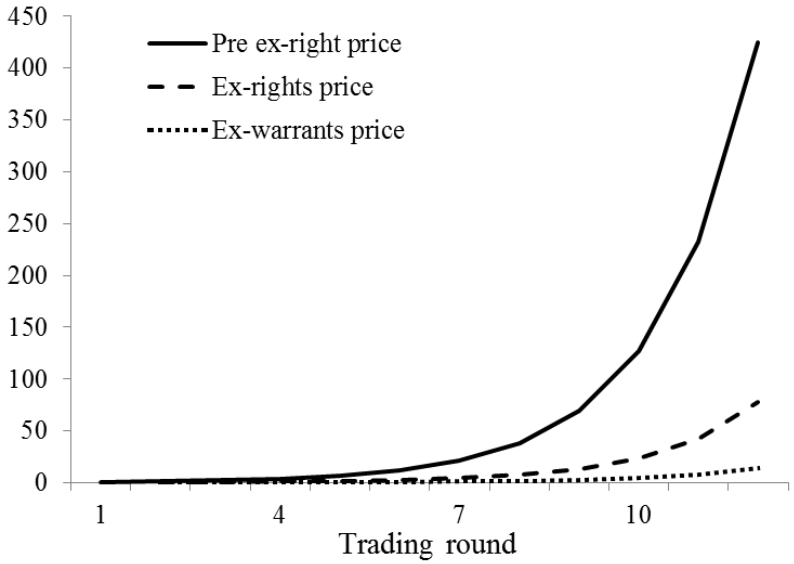
Abstracting from the time-value of warrants (which is positive anyway) and focusing on the intrinsic value, the warrant's implicit value is €0.22, i.e. $7.33 \times (0.48 - 0.45)$. That is because each warrant offers the option to buy 7.33 new shares at around €0.45 and the implicit ex-warrants price of the stock is €0.48. [3] Therefore, the value of the stock is €1.44. That is equal its implicit ex-rights price (€0.63), plus the right's value (€0.37), plus the implicit value of the 2 warrants (€0.44).

Remember that the starting value of the stock is €1 and now investors realise that it worth €1.44. What they will do next is obvious and the price will adjust close to that new level. But following the same logic as above, the implicit ex-rights price, as well as the value of rights and warrants will also adjust upwards. And then it is easy to show that the value of the stock will increase further, to €2.29 this time. In other words, the value of warrants feeds into the stock price, which then feeds into higher warrant values, which feed again into the stock price and so on.

The outcome of this deterministic, yet explosive, process in illustrated in Figure 1. It shows how the price of the stock (before the ex-rights) increases relative to the implicit ex-warrants price.

[3] Athens Stock Exchange offers an application for calculating the theoretical value of warrants under alternative parameter values, using the Cox-Ross-Rubinstein model.

Figure: The leverage effect of warrants on share prices



This kind of situation is currently observed in the Greek stock market, where bank shares have enjoyed extraordinary returns over the past weeks, since the recapitalisation process has started. Increases in share prices lead to mark-to-market gains in warrants, which then feed into higher share prices and so on. And, in some cases, investors' demand for bank shares is met by major shareholders that sell their stockholdings to raise liquidity and subsequently participate in the capital increases.

But this is a highly leveraged situation, which may end up in tears for investors, especially small ones. It could also end up as major embarrassment to policy makers that designed the recapitalisation framework, offering far too many warrants to lure investors into the process.

A rational bubble?

Low exercise prices and fixed dates for exercising the warrants may lead investors, especially retail ones, playing the *musical chairs* game again. They could possibly think they will exit before others and, surely, before the influx of tens of billions of new share in the market. But having enjoyed large paper gains for some time, investors could face a shallow and possibly collapsing market when trying to liquidate their shares en masse.

Such market failure could be particularly detrimental to economic recovery by causing market dislocations. Long-term investors may also be discouraged from acquiring strategic stakes in banks if shares are trading at a large premium compared to their European peer group. Alpha Bank was the first to open the recapitalisation round. During the ex-rights date it was trading at a price-to-book ratio of 0.86, compared to a European average of around 0.6.

In the current conjuncture, the significant premium at which Greek banks are trading compared to the European peer groups is driven by the large number of free warrants, the low exercise prices and the impact warrants have on market capitalisation.

To be more specific, only shares owned by private investors will be traded in the free market after the recapitalisation. And there will be no trading in shares acquired by the HFSF. As a result, the free-float of Greek banks will not exceed 10%-15%, including both new and existing shares. Yet shares acquired by the HFSF are part of banks' market capitalisation, inflating price-to-book ratios. This is because of low exercise prices of warrants and, in addition, due to the predetermined and relatively short transitory period during which warrants need to be exercised, i.e. 4.5 years.

Policy response

In the short-run, the rally in bank shares appears as a win-win situation both for private investors and the HFSF. With inflated share prices, investors could reap short-term gains by exercising some of their warrants, while the HFSF could sell some of its stock at a profit. But in the medium-run, a rapid increase in the free float could lead to violent swings in share prices, undermining confidence by long-term strategic investors in the broader economy.

In order to stave off a warrants-induced bubble and a subsequent burst at a time when the economy attempts to recover, the original motivation given to investors to exercise their warrants as soon as possible should somehow be reduced.

The HFSF could be granted discretion in determining non-standard dates for private investors to exercise their warrants. The HFSF could also limit the number of warrants to be exercised at a single date. In addition, instead of having to fully sell its shareholdings within a predetermined period of 4.5 years, the HFSF could adopt a more open-ended approach. Exercising discretion by the HFSF along these directions would allow better absorption of the new shares by the market, while discouraging speculative coordination around predetermined exercise dates.

Late HFSF exit from bank ownership would certainly risk inflicting permanent damage on private-sector incentives within banks. But too early exit could also trigger speculation and inflated share prices in the short-run. Exercising the warrants too early could increase free-float too quickly. In a shallow market, that could cause market dislocations, undermining future efforts by the private and the public sector to access long-term funding through capital markets.

Exercising of warrants needs to be smooth and spread deeper into the future. After all, settlement in warrants is physical, not monetised. And what really matter is not so much investors' intention to exercise their warrants early, but their actual willingness to do so. If share prices collapse in a shallow market swamped with some extra billions of new shares, then transition of the Greek banking sector to full private-sector ownership will be in jeopardy.

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