

## The lessons of the crisis on pension funds portfolio management

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**Abstract.** *Portfolio management in crisis conditions showed that major turbulence come from within the financial system. In such a context, a first answer to the investors (and pension funds make no exception) manifests itself through the growth of liquidity preferences. Recent studies have shown that monetary political shocks have a considerable effect over the dynamic and composition of the capital flows, with influences that reach the structure on categories of assets of the pension funds' portfolio. For example, due to an interesting profile of the risk-profit ratio, listed private equity (LPE) funds are more and more attractive for the institutional investors, among which are the pension funds administrators. Last but not least, the existence of an insuring system of the participants' contributions and/or benefits to the pension funds is extremely useful, considering that it is able to harmonize a large variety of interests.*

**Keywords:** liquidity; monetary policy; listed private equity; reserve funds; guarantee funds.

**JEL Codes:** G01, G23.

**REL Code:** 11B.

### Influences of monetary policies

It is practically unanimously accepted the fact that the aspect of the actual economic crisis was determined decisively by the erroneous monetary politic of the main central banks, a factor that can be considered responsible for the financial system frailty, through the rise of the debt level. Besides, as the classic economists demonstrate, the expansionist monetary politics is the base of every serious theory about the economic cycle al businesses.

It is as true that the actual international economic crisis brought with it an ample use of both levers, monetary and fiscal, by the central and governmental banks of many countries of the world. At the monetary level, the objectives of central banks of USA, Europe, and also from other countries was the economy's payment system protection and the prevention of deflation as a result of some banks' or financial credit institutions' collapse.

The central banks' reaction to the financial crisis was different, according to the objectives that have been considered to have priority at a certain moment: the resume of economical growth, credit stimulation, the monetary market's liquidity, the control over the budgetary deficit and external public debt and more.

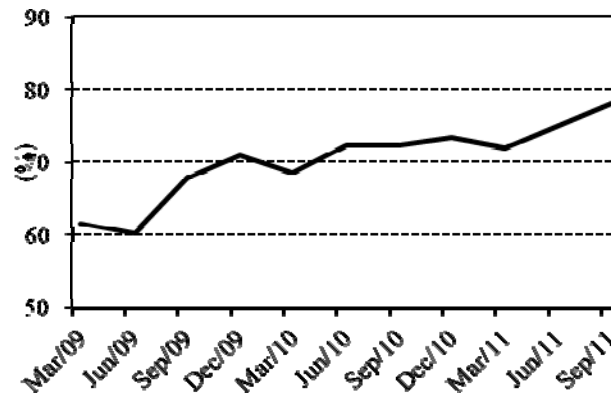
It is not all about the two options of action concerning the monetary politics domain: gaining strength vs. relaxation, but also about the method of development of the competent authorities' interventions: shock vs. gradual.

More and more specialists are, though, thinking that discretionary interventions at a never before heard scale that took place in the majority of the crisis affected countries are, in the best case scenario, a palliative on a short term, but on a long term these have amplified the economic crisis.

Thus, one of the monetary politic errors of the central banks in the actual crisis was identified in the monetary excess, respectively in the growth of the money quantity in the economy under the conditions of credit restriction and the growth of money holding in an economy with inflexible prices that suffer from bad investments.

Another error, best exemplified by the American case, is the use of monetary policies in an industrial political role. More exactly, this means salvation from bankruptcy in a discrete way, through direct monetary infusion from the central bank, some insolvent financial institutions, a dimension in total disagreement with the primordial and declared role of monetary politic, to ensure general objectives, like prices stability (Marinescu et al., 2009).

In such a context, a first answer to the investors (and pension funds make no exception) manifests itself through the growth of liquidity preferences.



**Figure 1.** *The evolution of liquid assets of pension funds in Romania (bank deposits and treasury bonds)*

The specialized literature insists mainly on three primary “reasons” of the preference for liquidity: the transactions reason, the precaution reason (“risk adversity”) and the speculations reason. In this case, precaution becomes primordial, due to the fact that money – the perfectly liquid reserve of value – represents an insurance against negative economic effects of particular events.

The existence of expected negative values of the net income presumes a reason of precaution in the investors’ behavior regarding the volume of held liquidities as, besides the transaction’s cost and the lack of gain, there are costs of “penalties”, related either by short or medium term borrowings, or the conversion of a number of titles, in money.

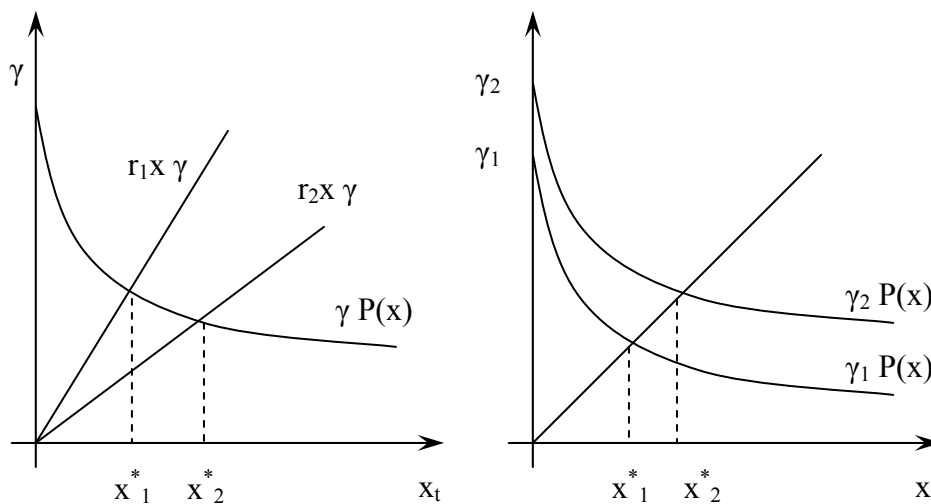
In these conditions the adopted strategy is the fixing of two thresholds (superior,  $S$ , and inferior,  $s$ ) for the monetary mass held as liquidities (noted with  $x_t$ ), so  $x_t \in [s, S]$ ;

- if  $x_t \in (s, S)$ , then there is no conversion (neither placements in titles, or titles in money);
- if  $x_t \leq s$ , then a conversion from titles to money must be made, to bring the level of liquidities to the average value:  $\bar{x}_t = \frac{s+S}{2}$ , the mass of sold titles being:  $\bar{x} - x_t$ ;
- if  $x_t \geq S$ , then a placement of  $x_t - \bar{x}_t$  is made, meaning at least  $\frac{S-s}{2}$ .

The problem of optimal determination of the two thresholds  $S$  and  $s$  isn't a simple one at all; they depend on objective factors (the interest rate, the fixed costs of transactions and penalties), but also on subjective factors, such as the transaction's importance for the investor (Scarf, 1960, pp. 196-202).

The fundamental behavioral laws highlight the way the liquidity volume held by different variables varies. As the liquidity entries take place at a certain date of time ( $t$ ) and they must cover the transactional costs ( $C_t$ ) of the next period of time ( $t, t+\sigma$ ), the liquidity repartition function is  $F(x_t) = P(C_t \leq x_t)$ , and the probability that the payments made in a  $\sigma$  period of time to exceed the volume of liquidities from the beginning of the period is  $P(x_t) = 1 - F(x_t)$ . The penalisation cost is  $\gamma \times P(x_t)$ .

It can be demonstrated that the liquidities mass held by the investor must be descending related to the interest rate ( $r$ ) in the period of covering the transactional costs ( $\sigma$ ) and ascending related to the fixed penalties costs ( $\gamma$ ).



**Figure 2.** Liquidities' variation depending on the interest rate and penalties cost

Also, E. Malinvand has determined that a rise of liquidity mass can be induced by the increase in probability of an imminent inflation, or it can be a consequence of the increase of transactions volume (Malinvand, 1981).

Recent studies have shown that monetary political shocks have a considerable effect over the dynamic and composition of the capital flows, with influences that reach the structure on categories of assets of the pension funds' portfolio.

Thus, the shock of monetary politics leads to a negative conditional correlation between the equities flows and liabilities flows and, in the same time, it provides a positive conditional correlation between equities' and liabilities' rate of return (Fratzscher et al., 2010).

Moreover, we can emphasize that for assets there is a negative conditional correlation between flows and rate of return. In other words, a growth of equity returns, as an answer to the monetary politics socks, is lastly associated with a diminution in value of the portfolio of investments made in the discussed country's assets.

Regarding the liabilities, the situation is the exact opposite one, as it can be emphasized a positive conditional correlation between the performance rating and quotation.

These ascertainments offer arguments regarding the necessity for a mobile portfolio of rebalancing following the decision of equities investment, but also for supervising the evolution of liability portfolios' performance ratings, in synchronization with the monetary politics shocks, with the purpose of turning into profit the attainable benefits.

The studies' results made in this direction bring, also, a series of clarifications over this puzzle of acute variations in time of the equities and liabilities performance ratings that the specialized literature mentions about.

The differences are not stopping, though, to the quotations and performance rating correlation, but regard also the indicators' dynamic, the way they react to monetary shocks. If the indicators that characterize the performance ratings (the differential interest rate and the equities relative benefit) they react practically instantaneous, the capital flows react more slowly and gradual. The maximum level of response (to the stimuli) emerges, after eight trimesters or even longer.

### Using new investment vehicles

Due to an interesting profile of the risk-profit ratio, private equity funds are more and more attractive for the institutional investors, among which are the pension funds administrators. The "private equity" collocation has become more spread at the end of the '80, due to some ample buyout operations. Theoretically speaking, private equity funds (or companies) are closed investment funds with risk capital, which purchase equities from private

companies. Based on the main goal of obtaining the equities, these funds are divided into three major categories:

- Venture capital – funds that finance the set up of companies or finance small companies and then further their development;
- Leverage – funds that concern with equities direct buying from private companies by making tempting offers;
- Growth capital – funds that concern with financing big and stable companies, to help them develop better, extend more or to restructure them.

It must be mentioned, though, that the possibility to invest in such funds is limited, as they are not part of the liquid assets category and don't have a secondary market, as assets or bonds do.

So, though it may look like a contradiction in terms, listed private equity (LPE) funds are – through their increasing liquidation – instruments of investment much more promising and attractive for a large variety of investors.

The private equity notion doesn't necessarily presume that the investing company or fund is also private. The fact that a private equity company is listed at the stock exchange does not influence the main activity: investments in unlisted companies. Although listed and unlisted private equity funds have different organizational structures, investments in LPE present similar or even equivalent characteristics with investments in unlisted private equity funds. We take in consideration basic characteristics such as the types of investments (buyout, venture and growth capital), or the funding methods (equity, mezzanine and debt).

Unlike the limited partnership companies, where the number of investors is basically limited to a restricted number of institutional investors, the LPE market opens this category of assets for anybody who is interested. The existence of an organized market, where private equity funds portfolios are bought or sold, makes this class of assets a very liquid one.

Liquidity isn't though but one of the significant advantages of the LPE, besides other characteristics, such as:

- *Access* (in contrast with the traditional private equity funds): there isn't a minimum investment requirement; we deal with a direct and immediate exposure to a diversified portfolio of private equity, without any problem of the j-curve effect;
- *Transparency* regarding the private equity portfolio, as long as listing presumes high standards of disclosure;

- *Variety* at a high level, both concerning the investment types, and the funding methods;
- *Costs*: there are no transactional costs, with the bid-ask spread exception; averagely, the administering commissions are lower than for the limited partnership companies;
- Superior *performance*, on a long term, than all the other important categories of actives;
- *Discounts* for investors, who can often buy with a discount of the net average value (NAV).

The problem of including the LPE in the pension funds' portfolio, and also regulating the portfolio's maximum quota that can be allotted to this type of actives, was little studied until today. We will mention, though, the researches of Zimmermann (2004) and Bilo (2002), in which setting a basket (or index) of private equity funds transacted publicly is realised in conditions of liquidity restrictions, a fact that raises serious question marks on the process' result of performances measurement.

Another more recent study is based on the LPX 50 index – an index calculated at a world level based of the biggest 50 LPE companies and published by LPX GmbH (Aigner et al., 2012, pp. 753-764). The advantages of such an approach refer to its representative character for the LPE market, but also to avoiding liquidity problems, keeping in mind about the existence of many liquid investmental instruments, like open end index tracker certificates and even exchange traded funds.

The accomplished analysis confirm that LPE is an attractive investment alternative, including for the pension funds, along with the arguments concerning the liquidity also being present the ones regarding the improvement of the risk-profit profile. Even though the LPE performances are not established exclusively based on the performance of the private equity direct investments, but by the markets' performance in general (because they are publicly transacted), the registered performance ratings are comparable with the ones of a pure equity investment.

Because LPE participates to the allotment of assets along with equities and bonds, it is required the use of a method that takes into account the correlations (like the ones between LPE and assets), but also abnormal distributions or autocorrelation. It has been used a Markov approach, with commutation, able to form the performance ratings on classes of actives, observing thier most important characteristics. By applying this model we can

simulate the performance rating distribution, with the purpose of establishing the actives' allotment method.

Although a series of optimisation frameworks have been applied, the authors refrain from suggesting a unique percentage to represent the LPE optimal weight in a portfolio, keeping in mind that for certain categories of international investors, maximum quota of investment in certain classes of assets are susceptible to be applied.

Even so, we appreciate that even the most risk averse investors, like the pension funds administrators, can benefit from the favourable effects of diversification by introducing the LPE in the portfolio. The calculations made for the 2007-2009 period of time, in more versions of adjustment to the risk aversion parameter, show that the portfolios' performance ratings established with the ARMS (autoregressive Markov-switching) model are net superior to the performance ratings of the classic portfolios (assets and bonds) build based on the usual GBM (geometric Brownian motion) model.

Practically, we deal with a demonstration of the fact that the listed private equity funds can extend significantly the „efficient frontiere”.

### Mechanisms to ensure contributions and/or benefits

If the crisis effects over the personal savings and investments are easier to accept, being affected a surplus of resources, regarding the contributions for pensions, things are a little more complicated, being questioned the incomes destined for future consumption coverage themselves. Reason for which, the existence of a guarantee for the funds destined for pension payments is frequently claimed.

The problem of guaranteeing the contributions and/or of a certain level of benefits for the participants to different areas of the financial market is not a new one but, from the community's legislation point of view, it became clearer so far especially in the banking system and in the capital market. In the insurance domain, dispositions regarding guaranteeing/compensation mechanisms can be found in the legislation referring to the reorganization and liquidation of insurers and the civil auto liability insurance.

Regarding the pension funds market, the European politics concerning the subject is subordinated to the diversity principle, reason for which the problem of guaranteeing/compensation mechanisms can be found again only within some national legislations, without a harmonization at the community level.



With all these in mind, we assess that the existence of an insuring system of the participants' contributions and/or benefits to the pension funds is extremely useful, considering that it is able to harmonize a large variety of interests, such as:

- individual interest for protection, that every contributor demands;
- funds administrators and pension providers interest to preserve their clients portfolio and to avoid reputational risk;
- public interest, regarding the trust in the pension system and avoiding the systemic risk.

It is obvious that, in case of significant restraining of the number of pension funds publicly held, the state's role in the domain also diminishes, only the entities that still benefit of the state's guarantee having serious problems of sustainability.

New systems of pension funds insurances have emerged, though, that can be structured after several characteristics:

- as a way of functioning, we will encounter: mutual structures to cover the spending meant for satisfying the obligations of entities that are unable to pay, and formal structures, based on the existence of a fund dedicated for this purpose;
- from the method of management, we highlight: public administered funds and private administered funds;
- from the contribution's type, there are: compulsory funds and voluntary funds;
- from the protection's objective, there are structured: security funds regarding achieving a minimum tolerable performance rating, reserve funds for supplementing the benefits and participants' rights guarantee funds.

The option for one model or another must take into account the variety of aspects regarding the quality and dimension of pension funds market, the level of implied costs, the degree of insurance coverage and, last but not least, contributors' accountability regarding option criteria in case of adhesion or transfer to a certain fund.

Reserve funds are operated mainly for DB (defined benefits) systems and represent a way of assuming the responsibility by the governments regarding the finance of these pension plans, avoiding – in the same time – to transfer the financing cost to the future generations.

Although they also represent instruments of investment, similar to the supplementary pension funds of Anglo-American origin, the reserve funds have increasingly become to be looked at as important instruments for sustaining the social security programs (Dixon, 2008, pp. 249-270), offering the governments – not only in the present but also in the future – a political instrument for accomplishing their social obligations with minimum disturbances for the current and future spending plans.

The guarantee funds are usually pertinent to DC (defined contribution) plans and they ensure the protection of the cumulated contributions and, eventually, of a guaranteed minimum performance ratio for the investments resulted from them.

Obviously that the specialists' opinion are not unanimously favorable concerning the use of the above mentioned guarantee/compensation mechanisms.

Thus, there are voices that maintain that the request of contributions necessary for financing the risk adapted pensions are the same, regardless of the assets' investment method and, thus, the use of reserve funds for attenuating the impact of risky investments on the national pension systems' financial situation is useless.

In some cases, constituting the guarantee/compensation mechanisms is regarded as “a BLAM vote” for the regulation and supervisory existing authorities and even regarding specialists' and officials' level of expertise and competence from the governmental departments.

Most of the objections start from the attraction that such institutes carry out over the partisan political interests and bureaucracy proliferation. The most highlighted fears refer to the possibility of subordinating the fund's first class objectives to some secondary objectives of the executive, on a short term.

There are also many theoretical arguments which mention that it is possible to avoid such a risk, starting with the “acceptable” financial practices that give intern and international legitimacy to the sovereign investment funds. It is kept in sight the logic of investing the actives of these funds on the global markets, outside the national programs of economic growth, in the idea of realizing performance ratios superior to the ones obtained internally. Moreover, the guarantee mechanisms' logic of being is based on reducing the state's future obligations toward the pension system and, for achieving this political goal, the government must understand that the implied funds must be “allowed” to realize their own objectives, first of all the ones regarding achieving a certain level of productivity. It is true that the evaluation and control of these funds are

still the government's tasks, a fact that on a short term makes them vulnerable to the executive's opportunist intromission.

It is appreciated, however, that applying the competence delegation principles is meant to ensure the reserve (or guarantee) funds a functional autonomy in relation to possible extra-financial pressures. Besides, most specialists avoid the generalization of the institutional independence notion, insisting on understanding the risks of political and bureaucratic costs and interventions.

We will once again mention that authority delegation comprises three components:

- the mandate, a term by which the institutional objectives/goals are defined (generally or concretely; for example the rate of return on a period of time);
- restrictions, respectively the limits imposed in realizing the mandate that reflect the comprehensive political interests;
- accountability, meaning the results' transparency by which the in question institution may be evaluated by a third party.

Concretely, competence delegation is based on expertise requirements afferent to the domain and it is expressed by autonomy in the decision making process, also regarding their evaluation and adapting to the modification of specific conditions (financial in our case).

So, we can remark that researchers avoid extreme approaches, refusing both the idea of "universal panacea" and the opinion that guaranteeing/compensating mechanisms would not make a viable project. Moreover, a series of principles and politics meant to avoid political intervention costs and bureaucratic excess have been synthesized, preserving thus the possibility of functional performances realization for which these funds were created for (Clark, Monk, 2011, pp. 18-25).

The building and management principles of reserve and guarantee funds are necessary conditions for protecting any institution from the politic interference and they concern:

- the legitimate purpose, for which the legislator has decided creating the fund (for example, the costs associated with "the aging population", the equity between generations etc.);
- the organizational mandate, materialized through regulating the method of accomplishing the general goal;

- the mission's clarity, through a well articulated set of objectives and goals of the investment process based on the fund's well being (it is avoided, thus, implicitly but officially, the political and social objectives);
- the fund's withdrawals: possible financial obligations and reimbursement procedures;
- the organizational boundaries: the official arrangement of competences, role plays and institutional responsibilities;
- the sponsor's authority in relation to the mandate received by the fund and the reporting obligations (toward the government or the legislative);
- the council's (of administration) authority, as a method of carrying out the sponsor's authority toward the president and related to the institution's top management;
- accountability: formal mechanisms of transparent reporting to the sponsor and interested persons [stakeholders] (reports, transaction declarations and more).

These principles have an intricate relationship with the following management and implementing politics:

- informational symmetry, based on a continuous informational exchange process that allows the sponsor the knowledge and understanding of the fund's operations, the risk profit and the expected performance level;
- the council's members (of administration) appointment, based on a set of standard requirements regarding the candidate's competence and experience (highlighted for the domain in question);
- management employment: clear responsibilities for the council concerning hiring and firing the executive managers and configuring their remuneration system (based on or outside government regulations);
- the fund's leadership: president, vice-president and CEO with external credibility and internal discipline;
- the staff's expertise, for achieving the institutional objectives; it justifies the delegation process and imposes respect;
- the staff's retribution, according to their performances (related to the fund's main mission);
- the behavioral code, that regulates the accepted behavior and warns on eventual breaking rules;

- risk management, taking into account both the mandate's long term nature and the public's sensibility, higher toward losses than toward gains; it may affect the institution's functional purpose and the equilibrium of internal and external investments' management;
- major force: the exceptions from the institution's role and responsibility; if they cannot be identified at the moment of enactment, the process by which exceptions can be invoked will be regulated through rules that regulate the relations between sponsor and fond.

Implementing these principles and politics, actually a constructive and applied adaptation of the principles of corporative (Jensen, 2000) governing, allows the guaranteeing/compensation mechanisms to survive and prosper according to their functional efficiency, even though they do not fulfill the requirements of an absolute autonomy related to the governing factor.

Practically, the more and more higher frequency of appeal to these types of institutions with the purpose of improving the pension systems' quality will force the governmental factors, in the following period of time, to a significant effort of institutional construction and administration. As it is natural, it will take some time for evaluating the results of this process.

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