PENSION FUND PERFORMANCE: THE EVIDENCE

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This is a work of collaboration between the Organization for Economic Cooperation and Development (OECD) and the World Bank, on private pensions. Specifically it is part of a study aimed at comparing the financial performance of private pension funds in various countries in Latin America, Central and Eastern Europe and the OECD. This project is being carried out thanks to the collaboration of institutions such as BBVA, ING and the Dutch Pension Fund Association (VB).

In the first stage of this project, a description was made of the various pension systems in the countries studied and an analysis of the available data carried out; in a second stage an attempt was made to compare performances, using standard measures of analysis; and in the third stage, on which we are working at this moment, a comparative analysis is made of performance, with the help of new reference portfolios. We are attempting to calculate new reference portfolios that include the potential relationships between the characteristics of the pension systems of each country and the regulatory framework within which they operate.

On the basis of that structure, the preliminary results that have been obtained in these studies are shown. This presentation includes the preliminary results of the first two stages.

With regard to the description of the system, the first part concentrated on making a descriptive study of the private pension funds in the various countries and their regulatory framework. A comparison was made of total assets and the allocation of such assets between different instruments. A description of how the returns of these investments are valued in each country was also given. In the second place, an analysis was made of the potential problems with the data on returns provided both by the pension funds and the regulatory bodies. Then there was a preliminary analysis of the performance of these funds at a comparative level. For this a reference portfolio was taken into account and in the first instance this evaluation was made with respect to standard measurements of financial performance, such as the Sharpe ratio and Sharpe's analysis of attribution. This study was made by Eduardo Walker.

The fourth study was an ex post comparison of the investment performances of the private pension funds, adjusted by risk; this was then compared with a hypothetical portfolio ex post, which would be the ex post portfolio that would have obtained the best return given the same level of risk. And finally, an analysis is being concluded of the different costs of investment in the countries being studied.

In the overall and general spheres of the countries included in this study, there are certain outstanding characteristics. As far as the types of pension fund are concerned, the important point is that there are mandatory and voluntary funds, occupational and personal, with defined benefit and defined contribution.

The variability in the countries that have been studied is quite wide; however, it is possible to see that in the Latin American and Central and Eastern European countries, most pension funds are mandatory, of the personal type and with defined contributions, except in the case of Brazil, where they are defined-benefit, voluntary and occupational. In the OECD countries, there is a mixture of mandatory and voluntary systems: the majority are occupational and, in terms of asset percentage, defined-benefit, though it is important to underline the fact that they are in a process of transition towards defined-contribution systems.

With regard to the legal framework, in the OECD countries there are few investment restrictions. They are regulatory systems based on the "prudent investor rule", while in the countries of Latin America, Central and Eastern Europe, the regulatory system is based on restrictions, both in the type of instruments that are authorised and in the investment limits on certain instruments - quantitative limits on investment in foreign assets, for example.

Regarding total assets and how they are allocated, it may be seen that in most countries there is a large percentage of investment in bonds, except in countries like Chile (where it is under 50%), the United States, the United Kingdom and Canada. In the OECD countries in particular, investment in bonds is lower, except in the case of Sweden, where bonds amount to 62%.

As far as total assets are concerned, the weight of the pension system based on private capitalization depends considerably on the history of the countries. Thus the six countries in which the percentage of assets compared with the gross domestic product (GDP) is over 20% are countries that have a long history of pension funds and are all OECD countries, except for Chile, which also has a longer history of pension funds than the other countries.

Furthermore, as regards the basic statistics on performances, a calculation was made

– on the basis of the available data – of the geometric and arithmetic yield of all the countries and the standard deviations during this decade, starting in the year 2000, up to the end of 2005. It may be observed that in the OECD countries, the yield has been relatively low, whereas the variability has been high; and that in the Latin American countries the reverse has been true: relatively high returns but relatively low variability, except in the cases of Argentina and Uruguay. The results in the Central and Eastern European countries are in the middle: neither so productive, nor so volatile.

Of course it is not possible to generalise the above, because it is for a period of only five years and depends on particular circumstances, as is clearly shown in the case of Argentina.

The second point on which we concentrated was in identifying potential problems with the data provided about the pension funds' performances and the comparative results. There are problems of differences in evaluation methodologies, differences in how expenses are calculated and charged, and how investment expenses are accounted for, and there are also differences in the legal frameworks. But, apart from that, there are potential problems of biases in the available data. For example, a quite serious problem has to do with the performance bias, because weightings are being used in calculating the aggregate returns that use the relative weight of each fund at the end of the period. By doing this, greater weight is given to those funds which have in some sense been successful, compared with those funds that have had less success. This could be solved by using lag weightings that are variable and are used simply for short periods such as a month, or, at most, a quarter.

In relation with the above, there is also a problem in that, in order to calculate the average returns, the returns of a group of funds or the returns of a country, fixed average values are used for purposes of weighting and obtaining the average, where-as it would be advisable to use prices that vary over time.

Another problem with the data is related with the use of returns for overlapping periods. There is no distinction or clear reference to the separation of the various assets in which investment is made, and this creates problems insofar as being able to compare with any guarantee. And finally, there is survivor risk, which is related with the first risk described above. This risk arises when the weighting includes only those pension funds that are in existence at the end of the period, the survivors.

All these problems with data are problems related with the fact of wanting to compare internationally. Such problems do not exist when the analysis is made within a specific country, because the data is homogeneous, but when making international comparisons of pension fund returns, all these problems are very important because

they make it difficult to compare with any level of guarantee.

The second part of the study concentrates on answering the most important question involved in it: How have the pension funds performed in the various countries and how can this comparison be made?

In order to make this comparison, as was stated earlier, it is necessary to have a reference portfolio. Then a calculation is made of the differential of the returns obtained, by comparison with this reference portfolio, and that differential is then compared at international scale to decide how the various pension funds have performed in the different countries.

The study, for now, has concentrated on standard measurements such as Sharpe's ratio and also Sharpe's analysis of attribution, and the main result of this study is that the pension funds achieved a risk premium that may be considered positive: i.e. they have added value. For these calculations the reference portfolio used was returns of risk-free assets, both short and long-term, both local and foreign, and the result was that the pension funds had a positive risk premium, in other words they have added value, for most countries, as far as both local and foreign short-term instruments are concerned, though in some places, such as Hungary and others in Eastern Europe, they also added value or had a positive risk premium with regard to long-term risk-free instruments, both local and foreign.

The other study carried out so far compares the countries' returns with a hypothetical reference portfolio that is calculated a posteriori. In other words, it is not a replicable portfolio, but rather an analysis that is completely a posteriori. The study calculates the hypothetical portfolio a posteriori, considering what the portfolio a posteriori would have been with the best performance, bearing in mind that it had to have the same standard deviation as the performances achieved in reality by the pension funds, and this was done, both in the hypothetical case of there being no restrictions and in the case of including the investment restrictions currently in place in each country. And the result is, obviously, that the pension funds have performed less well than the best portfolio a posteriori, but the difference was not as great as we might have expected a priori.

Currently an attempt is being made to extend the study and, instead of comparing it with the hypothetical portfolio that would have had the highest returns, to make the comparison with that hypothetical portfolio ex post as well, but that would have had a high correlation with the growth rate of wages in the country in question, or with the growth rate of the GDP in the country in question.

Finally, this study suggests that investment restrictions have affected the returns of

the funds, when we compare the results in the cases with and without restrictions; however, there are various countries in which the investment restrictions do not appear to be binding, in other words, the portfolio with highest returns has a high percentage of the permitted assets. For example, the portfolio with best returns in certain countries (Hungary) has a high percentage of domestic bonds, which is explained in many countries by two factors: first, because there are investment restrictions that have conspired to create a bias towards investing in domestic bonds. Furthermore, for macro-economic reasons domestic bonds have had a higher premium than other domestic assets, over and above all international assets, which has led to these results.

What are the conclusions from what we have done so far, bearing in mind that these are preliminary results? The first and most important is that there is a problem with the availability of appropriate data. So one of the recommendations is that international standards need to be developed for calculating and presenting data on the financial performances of pension funds, to enable comparative studies to be made. The problems with the data being supplied is the context of in-depth comparative studies with institutional detail. There is also a structural problem with the data that is difficult to solve. The private systems in most of the Latin American countries, and particularly in Eastern Europe, have no more than ten years of existence, which restricts the feasibility of carrying out a study of long-term returns, which is the main aim of pension funds.

To close, we will sum up the main results obtained so far. Both the study of the Sharpe ratio and the analysis of attributions indicate that for countries in which there is sufficient information to adjust the data on returns and make comparisons, the private funds have obtained a premium compared with short-term investment alternatives. In the same way, the other study suggests that the pension funds have achieved lower returns compared with the portfolio that would have achieved the best performance ex post. But the important point is that the analysis suggests that investment restrictions have had a negative effect on results in most countries. The fact of their having had a negative effect does not mean that countries need them for reasons of the development of the capital market. That is a separate issue. It is simply a question that when one takes an economic policy decision, these additional implications have to be borne in mind.

The project is now concentrating on extending this comparative study on the performances of private pension funds by developing specific reference portfolios for each country, bearing in mind the specific aspects of each country, the design and characteristics of each country's pension system and the different regulatory frameworks within which the pension funds have to operate in each country.