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Musa A. Ibrahim

National Pensions Commissions (NPC).

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How Relevant is Risk-Based Supervision for Pension Funds: The Regulators Perspective

*Musa A. Ibrahim, PhD**

Abstract

Over the past two decades, privately managed pension systems have expanded greatly to play a central role in the provision of retirement income worldwide. The design and operation of these systems vary extensively, but the basic reason for their adoption remains unique across the board: countries need to provide affordable and sustainable income for their retired citizens. Achieving this objective becomes a challenging task in the face of the uncertainties created by globalization and rapid integration of financial markets. The utilization of risk-based methods originates primarily in the supervision of banks. In recent years, it has increasingly been extended to other types of financial intermediaries including pension funds and insurers. This trend is closely associated with the rising awareness of the convergence of regulatory focus and concerns within the financial sector. Given the move by other financial sectors to initiate a 'risk-based' approach to supervision, pension supervisory authorities are also looking to adopt such methods. This paper, therefore, provides an insight into the relevance of risk-based supervision for pension funds in Nigeria.

I. Introduction

Over the past decades, privately-managed pensions have evolved from their origins as a supplemental form of deferred compensation to becoming an important and in some cases, central element of social

**Dr. Musa A. Ibrahim is a Commissioner Inspectorate at the National Pensions Commissions (NPC). The views expressed are entirely those of the author and should not in any way be ascribed to the CBN and NPC or their respective management.*

insurance systems. The supervision of these schemes has made a similar transition to meet the requirements of this new role, evolving from an initial emphasis on ensuring compliance with tax laws, labour contracts and relatively simple methods to limiting investment risk, towards a much more comprehensive approach designed to ensure proper management of all the risks associated with complex institutions relied upon to provide secure sources of retirement income.

The wave of innovation and reforms in Latin America, Central and Eastern Europe beginning in the early 1980s, transformed pension funds from primarily employer-sponsored defined benefit (DB) arrangements into more diverse forms including most significantly the emergence of special purpose financial intermediaries operating on a defined contribution (DC) basis. This largely removed the capacity to rely on employers to guarantee outcomes, placing financial risks squarely on the shoulders of members. This transition shifted the nexus of supervision from controlling agency risks to managing systemic financial and operational risks. Initially, the new supervision regimes were based on simple portfolio limits with very pro-active compliance enforcement. Reducing risk over short periods through investment controls was the primary concern, while the risk-return efficiency or effective capital allocation were very secondary considerations.

By the beginning of the new millennium, several factors combined to accelerate these changes in supervision methods. Private pension funds in a number of countries accumulated asset levels exceeding those of more traditional financial institutions, in some cases more than 100 per cent of GDP, leading to a commensurate increase in attention to their systemic importance. A “perfect storm” of rapidly declining interest rates, coincident with collapsing equity prices, exposed the fragility of the loose funding requirements for the remaining defined benefit schemes. Concerns about the capacity of the new defined contribution plans to produce adequate levels of retirement income also focused

attention on the efficacy of their design and operation. This led a number of countries to begin to adopt supervision systems based on various risk-based approaches that established new standards for the operation of pension funds and guided the conduct of their oversight activities.

II. Conceptual Origins of Risk-Based Supervision - Basel II and Solvency

The movement towards risk-based supervisory approaches can be traced to the development of early warning systems for banks. The earliest of these systems was the “CAMEL” system for risk rating adopted by the United States in the 1980s. In 1988, the Basel Committee on Banking Supervision implemented the Capital Adequacy Accord (Basel I), which provided a risk-based framework for assessing the capital adequacy of banks to cover credit risks. The development of this framework was an important step towards risk-based supervision. It sought to ensure an adequate level of capital in the banking system by applying weights to credit exposures, based on broad risk classifications. Consequent upon that, during the 1990s a number of supervisors implemented risk assessment and early warning systems.

In 1999, the Basel Committee began the process of replacing the Basel I Accord with a more contemporary framework, which requires banks to improve risk management and corporate governance in conjunction with improved supervision and transparency. The new framework, known as Basel II, is designed to encourage good risk management by tying regulatory capital requirements to the results of internal systems and processes, thus, creating incentives for improvements in risk management. In addition to making the calculation of regulatory capital more risk sensitive and recognizing the quality of internal risk management systems, the framework added two pillars to the model supervisory review process and market discipline.

The Basel II framework provides banks with a choice between a standardized approach to calculating credit risk using specified risk factors and an internal ratings-based approach, which is subject to explicit approval by the bank supervisor and would allow banks to use their internal ratings systems for credit risk. It has been built through a process of extensive exploration by regulators of emerging industry practices in risk management and considerable testing and calibration. The framework requires implementation of an effective and comprehensive risk management system. It is envisaged that banks will set up proper organizational structures, policies, procedures and limits for credit, market and operational risks. Banks are also required to have an integrated approach to risk management that covers the risks in particular business segments as well as the bank as a whole.

The second pillar, supervisory review, allows supervisors to evaluate a bank's assessment of its own risks and assure themselves that the bank's processes are robust. Supervisors will have the opportunity to assess whether a bank understands its risk profile and is sufficiently capitalized against such risks. This pillar will encourage the adoption of risk focused internal audits, strengthened management information systems and the development of risk management units.

The third pillar, market discipline, ensures that the market is provided with sufficient information to allow it to undertake its own assessment of a bank's risks. It is intended to strengthen incentives for improved risk management through greater transparency. This should allow market participants to better understand the risks inherent in each bank and to ultimately support well-managed banks at the expense of poorly managed banks.

The movement towards greater risk focus is also being reflected in the insurance industry. The International Association of Insurance Supervisors (IAIS) is

currently working to develop a common international framework for assessing the solvency of insurers. At a regional level, work is underway in Europe on the Solvency II project, which aims to adopt a risk-based approach to capital requirements for insurance companies; and to introduce qualitative requirements for senior management, risk management, model validation and internal controls. There will also be recognition of internal modeling, in collaboration with the actuarial profession.

Solvency II will involve a three pillar approach similar to Basel II, introducing a supervisory review process and enhanced transparency. Under Solvency II, the first pillar will define the resources that a company needs in order to be considered solvent. The Solvency Capital Requirement will set a threshold for supervisory action and a Minimum Capital Requirement will provide a basis for stronger action or even withdrawal of the company's license to write new business. As with Basel II, the capital requirement can be calculated using either a simple standardized model or an internal model which has been approved by the supervisor.

Pillar 2 will take into account qualitative measures of risk control focusing on risk management processes, individual risk capital assessment and aspects of operational risk, including stress testing.

Pillar 3 will address disclosure requirements incorporating more consistent international accounting standards. In many European countries which operate Define Benefit (DB) pension schemes or guarantee arrangements which involve technical reserving, the rules applying to insurance companies may also apply to pension entities. It is obvious that, the trend across the globe is inexorably moving towards improved risk management based on the three key elements outlined above.

While supervised institutions all over the globe are focusing on improving their own risk management by developing risk management strategies, measuring and assessing risk in a more comprehensive manner (in many institutions this involves the creation of dedicated risk management units) and further ensuring that risk management information is presented to the management and board in a meaningful fashion. Supervisors on the other hand, are responding to this by building up their ability to assess risk. The basic tools of on-site and off-site supervision are taking on a risk focus and specialist risk units are being created with expertise to tackle complex issues. Many regulators are encouraging improved risk management by implementing regulatory standards and providing guidance. Finally, more external parties are being encouraged to take a role in the risk assessment process, either through broadening the role of some traditional players like auditors and actuaries, or through the encouragement of greater scrutiny by outside parties, through greater transparency in reporting.

III. Review of Some Four Pension Systems

It is pertinent at this point, to examine the pension systems of some countries, with a view to providing an understanding of the factors that motivated the introduction of risk-based supervision to pensions in those jurisdictions. The overview will focus on the mandate, coverage and asset size, number of pension funds and the legal structure of pension funds in Australia, Mexico, Netherlands and Denmark.

All the four countries have mandatory or quasi-mandatory private pension systems. In Australia and Mexico, contributions to private pension plans are imposed by legislation while in the Netherlands and Denmark, contributions take place in the context of collective labour agreements. These are classified as quasi-mandatory, because most workers are covered by these agreements.

The mandatory or quasi-mandatory nature of contributions results in high coverage rates, except for Mexico where coverage is relatively low. The lower coverage ratio in Mexico, despite the legal obligation to contribute, is explained by the large share of the labour force in the informal sector and the lower number of active contributors relative to the total universe of pension fund members.

The pension systems in these countries are very large, with assets exceeding 100 per cent of the GDP in all cases, except for Mexico. Three countries have a large number of funds, ranging from 111 in Denmark to 1,000 in Australia and these funds may operate more than one pension plan. Many of these are occupational funds structured as non-profit trusts or foundations that were originally created on a voluntary basis and have been operating for several decades. They include single funds and larger multi-employer or industry-wide funds. Australia and Denmark also have several for-profit commercial institutions managing pension funds, including life insurance companies in the Danish case. Mexico has only 18 funds currently licensed. The difference in the number of funds is a result of the different origins and characteristics of the Mexican system. The Australian, Danish and Dutch systems have their roots in voluntary arrangements with employers. Most funds were initially established with liberal licensing/authorization rules designed to encourage participation and coverage. By contrast, the Mexican system was established as a mandatory system of open funds subject to a strict regulatory framework, including much stricter licensing rules.

Dutch pension funds manage primarily Defined Benefit (DB) plans the Netherlands has been one of the few countries that have successfully resisted the move towards DC plans. The Danish system is a DC system that offers benefit guarantees and operates on a risk-sharing (or profit-sharing) basis. The guarantees introduce a core liability and the risk of insolvency of the provider.

Therefore, the Danish system exhibits some of the characteristics of a DB system, although it operates with more flexible rules than pure DB systems and seems to be moving in the direction of DC plans with fewer guarantees. Australian pension funds manage primarily traditional DC plans with no formal guarantees. There are still some DB plans, but these are mostly restricted to public sector funds, and account for a small share of total assets. Australia best represents a pure DC system. Mexican funds, by contrast, manage their DC plans under a new regulatory framework that includes a limit on downside risk defined by a ceiling on the daily absolute Value at Risk (VaR). This is a significant departure from the setup introduced in Chile and other countries in Latin America and Central Europe that relied on quantitative portfolio restrictions to manage risks. Most of these countries have introduced minimum relative return guarantees that intensify herding behavior and lead pension funds to base their investment strategies on tracking errors or relative VaRs vis-à-vis the benchmark portfolio. Pension fund managers in these countries are more concerned with relative risk (the risk of deviating from the benchmark and facing a capital call to honor the relative return guarantee) than absolute risk. The Mexican experiment is both innovative and controversial, and is being followed with interest in other countries.

The table below summarizes the characteristics of the pension systems of the four countries reviewed.

Table 1: Main Characteristics of the four Private Pension Systems, December 2005

	Mandate	Coverage (%) of Labour Force)	Assets (%) of GDP)	Number of Funds	Legal Structure of Pension Funds	Type of Plan
Netherlands	Quasi-mandatory	90	120	700	Occupational	Mostly DB
Denmark	Quasi-mandatory	80	124	111	Occupational and open	Mostly DC with absolute return guarantee (DB - like)
Australia	Mandatory	90	104	1,004	Occupational and open	DC
Mexico	Mandatory	29	8	18	Open	DC with ceiling on downside risk (VaR)

Notes: 1) Denmark: 44 corporate funds, 30 industry-wide funds, 37 life insurance companies;

2) Australia: 681 corporate funds, 86 industry-wide funds, 194 retail funds, 43 public sector funds.

The figures do not include small funds.

Sources: Hinz and Van Dam (2006), Andersen and Van Dam (2006), Thompson (2006), Bernstein and Chumacero (2007), Rofman and Luchetti (2006).

Some of the factors that have motivated the introduction of risk-based supervision of pension funds are common to all the four countries, while others seem to be country-specific. Some of these factors include the need to reduce the risk of under-funding or insolvency of DB plans (or DC plans with guarantees); the need to limit loss to members due to adverse movement in asset prices; the search for efficiency gains especially from improvements in risk/return trade-off; the increasing complexity of financial instruments and markets; efficient allocation of scarce supervisory resources; and the spillover from bank/insurance supervision.

Preventing the under-funding of DB plans was a strong factor motivating the adoption of risk-based supervision in the Netherlands. Dutch funds enjoyed the equity boom in the 1990s and started taking contribution holidays when funding ratios reached levels considered as high. However, these funding ratios proved insufficient to absorb the adverse price movements in the early 2000s. The crash of the equity market combined with the drop in interest rates led several funds to become under-funded or only marginally funded. Regulators interpreted the outcome as indicating a weakness in the supervisory approach that was perceived as lacking sufficient foresight and concern for the risks facing the institutions. The introduction of a more risk-based approach to supervision in Denmark was also motivated by a concern with the solvency of pension providers, but the surrounding conditions were different from those in the Netherlands. First, the new Danish “traffic light” system preceded the equity crash in the early 2000s. By the time equity prices collapsed and interest rates declined, the new system was already in place. Second, the new system was introduced as a *quid pro quo* for a more liberal investment regime in which the ceiling on equity investments was raised to 70 per cent. Danish funds were allowed to make riskier investments, provided that they held sufficient capital to absorb the risk. Third, the Danish system operates on a risk-sharing basis, which means that the system has buffers that can absorb at least part of the adverse price movements. These differences imply that the first motivating factor was more important in the Netherlands than in Denmark. However, there was still concern with provider solvency in Denmark, justifying the inclusion of this factor.

Concern with adverse price movements was also one of the motivating factors in Mexico, although the Mexican system is a DC system where the investment risk is shifted to the individual and there is little risk of provider insolvency. The policy concern in Mexico was not the risk of provider insolvency, but the exposure of retiring workers to extreme downside losses and the extreme volatility of benefits

across cohorts. It is also interesting to note that, as in the Danish case, the adoption of a VaR ceiling in Mexico and the introduction of strict risk management rules allowed the introduction of a more liberal investment regime that allowed pension fund managers to make riskier investments and use derivatives.

The search for efficiency gains was also one of the main motivating factors in Denmark and Mexico. In both cases, the investment regime was liberalized and pension funds were allowed to invest more in equity and other assets perceived as risky. In Mexico, pension funds were allowed to use derivatives, subject to certification by the supervisor. The relaxation of the investment regime was motivated by the perception that pension funds were constrained below the efficient investment frontier and that there was scope for longer term improvements in the risk-return trade-off. The relaxation of investment rules was accompanied by other rules designed to strengthen risk management and constrain excessive risk-taking.

The need to establish rules that enabled pension funds to take advantage of the increasing sophistication and complexity of financial instruments and markets was also a motivating factor in all the four countries. This reflects a more general recognition by financial supervisors, worldwide, that it is no longer feasible to monitor all of the operations of financial institutions and that a more effective approach entails ensuring that these institutions have sound risk management practices and internal controls.

In the Netherlands, Denmark and Australia, the adoption of risk-based supervision was also driven by the need to allocate scarce supervisory resources efficiently, especially in Australia and the Netherlands, where the supervisors need to monitor a large number of institutions. A traditional, compliance-based

supervision would be either too costly or ineffective in these cases. The risk-based approach allows supervisors to focus their scarce resources in the institutions exposed to greater risks and/or with weaker risk management capacity. This factor was, however, less important in Mexico, where only 18 funds are allowed to operate.

The integration of financial supervisory functions in one entity also seems to have been a motivating factor in the Netherlands, Denmark and Australia. The adoption of risk-based supervision in pensions seems to have been accelerated in the countries that integrated their agencies and adopted the same basic supervision approach to all financial institutions. There was in these cases, an accelerated transfer of supervisory “know-how” from banking and/or insurance supervision to pension supervision. Mexico was again the exception, as the supervisory agency, Comision Nacional del Sistema de Ahorro para el Retiro (Consar), was a single entity when the new approach was adopted and has remained a single entity since then.

IV. The Nigerian Experience: PENCOM's Adoption of the Risk-Based Approach to Supervision

The Pension Reform Act, 2004 repealed the Pensions Act 1990 and established a uniform, mandatory Contributory Pension Scheme for both the public and private sectors, and has as one of its objectives “to make provision for the prudent management” of pension funds. The structure of the pension reforms in the Nigerian setting is basically akin to the other systems earlier appraised. In fact, various components were adopted. As mentioned earlier, the scheme is a mandatory fully-funded occupational and open DC Scheme. Of interest is the fact that even though the Nigerian pension reform basically focuses on the maintenance of individual Retirement Saving Accounts (RSAs), thereby, making it primarily a DC scheme, the system still accommodates DB Schemes in the form

of Closed Pension Fund Administrators (CPFAs), Approved Existing Schemes (AES) and other transitional arrangements, thus, giving it the features of a multi-pillar model.

Currently the Nigerian pension system has accumulated funds in excess of N1 trillion in pension assets, from 25 RSA funds being managed by 25 PFAs, 7 licensed schemes with 7 Closed Pension Fund Administrators and a combination of DB and DC Schemes as represented by 22 Approved Existing Schemes (AES) whose funds are being managed by the various PFAs. Many of these AES were also occupational funds operated mostly by insurance companies. These were originally created on a voluntary basis and have been operating over the years.

The relatively small asset size when compared to the GDP in the Nigerian case, is due to the low coverage ratio, estimated at about 2.3 million people out of a working population of about 45 million people and the fact that the Nigerian system is much younger, having only started in 2004. However, the mandatory nature of contributions for both the private and public sectors to individual accounts implies that the pension system will continue growing at a fast rate and increase its share in the financial sector.

In keeping with the mandate conferred by the Act and, having recognized the need to evolve an approach that emphasizes sound risk management by the supervised institutions, the Commission *ab initio* adopted the risk-based approach, thereby, making it a primary objective that licensed institutions comply with minimum standards of risk management. Therefore, the need for the supervised institutions to develop capacity to identify, measure and manage all the relevant risks, reflected in the presence of a sound internal architecture of risk management was *a sine qua none*.

Since the main objectives of Risk-Based Supervision in DC systems are to ensure that funds operate at the frontier of risk and return and to protect public guarantees, the National Pension Commission faces challenges that are in many aspects similar to those faced by bank and insurance supervisors.

In order to examine the way PenCom addresses this challenge, it is useful to consider the three main groups of players involved in the overall architecture of risk management within the Nigerian pension system. The first group consists of the supervised institutions or Funds, the second group is the supervisory agency itself, and the third consists of other market participants that may have the capacity to influence the decisions and actions of pension funds. These include auditors, actuaries, fund members, rating companies and market analysts.

The question then is what tools has PenCom deployed to ensure the attainment of its objectives in the supervision of DC schemes and other approved DB schemes. Towards the attainment of the objective, the broad elements of the supervisory toolkit deployed are the regulations issued, including direct regulations focused on the risk management architecture and risk management procedures of operators; the Risk-Based Supervisory Model adopted by the Commission as well as regulations put in place to moderate the involvement of other stakeholders in pension management.

A continuous process of effective risk management is critical to the safety and soundness of the operations of PFAs & PFCs. Consequently, they are required to develop, implement and maintain sound and prudent risk management frameworks that comprise policies, procedures and processes appropriate to the nature, scale and complexity of their operations.

This requirement, as further enshrined in the provisions of the PRA 2004, mandates the establishment of risk management committees on the boards of

PFAAs, whose responsibilities over investment risk management include the formulation of policies and procedures governing investment, trading strategies, portfolio and asset allocation models and levels of authorization within the supervised institutions. To facilitate this requirement, the Commission has so far issued the exposure draft of Guidelines for Risk Management Framework for Licensed Operators to assist them in evolving reasonable risk management structures within their operations. Furthermore, the licensing structures put in place by the Commission require that the entire operations of PFAs and PFCs, which are risk-focused, are performed by competent, independent and accountable professionals.

On the part of the Commission, a well integrated supervisory model has been deployed in the supervision of these institutions. The model involves the rendition of periodic returns by all supervised institutions under the fully automated Pension Return Rendition System (PenRRS), off-site assessments and surveillance, on-site examinations and a supervisory regime, which takes cognizance of each operator's risk profile. The entire process is aimed at monitoring the activities of pension funds to ensure that they remain within the requirements of the Pension Regulatory Framework, so as to ensure the protection of pension funds for members and safeguard the stability of the pension industry.

The off-site function entails a quantitative and qualitative appraisal of the operations of the institutions based on returns rendered by them on a periodic basis with the objective of ensuring early detection of actual or potential problems, upon which corrective actions could be effected. The major focus here is being proactive rather than being reactive. Off-site surveillance, to a large extent, provides the foundation or indices for on-site examinations.

On-site examination on the other hand, provides the Commission with the

opportunity to obtain first-hand information to supplement or corroborate its off-site impressions of a particular supervised institution. In carrying out this function, the Commission adopts the Uniform Pension Fund Rating System (UPFRS). The UPFRS is an effective internal supervisory tool for evaluating the PFAs' and PFCs' activities on a uniform basis and for identifying those requiring special attention. Under the UPFRS, the institutions are assigned a composite risk rating based on an evaluation and rating of essential components of the institution's operations. The outcomes of off-site assessments and on-site examinations are considered in the risk profiling and rating of each individual and evolving a supervisory regime that is suitable in addressing the level of risks inherent in the operations of the institution.

The Commission, in order to ensure that all key players within the pension industry remain risk-focused, seeks to gradually issue guidelines to point them in that direction. Specifically, an exposure draft on Guidelines for the Auditing of Pension Funds was issued to standardize the appointment and reporting of auditors of pension funds. Work is currently under way on guidelines for trustees of AES with the idea of refocusing their attention on risk issues, amongst others.

V. Conclusion

Emanating from the development of early warning systems in the regulation and supervision of banking and insurance organizations, there was a progressive movement towards the adoption of a more effective and rational basis for the regulation and supervision of organizations that impact positively on human endeavours in an increasingly sophisticated environment. This provided the necessary platform for the evolution of the risk-based supervisory framework which had its early roots in the "CAMEL" parameters and ultimately the Basel II.

Contemporary global trends show increasing tendencies by employers to transit

their schemes from Defined Benefits (DB) arrangements into more diverse forms including most significantly the emergence of special purpose financial intermediaries operating on a Defined Contribution (DC) basis. This, therefore, effectively removed employer guarantees and shifted the financial risks squarely to the members.

The above development, coupled with deliberate attempts at avoiding the pitfalls experienced in the banking and insurance industries, and in order to maximize the gains inherent in its adoption as experienced by other countries like Australia, Mexico, Netherlands and Denmark, necessitated the National Pension Commission to opt for the risk-based approach *ab initio*.

Statistics supports the increased acceptance of the risk-based approach to supervision worldwide, as it offers the prospects of higher advantages relative to other approaches.

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