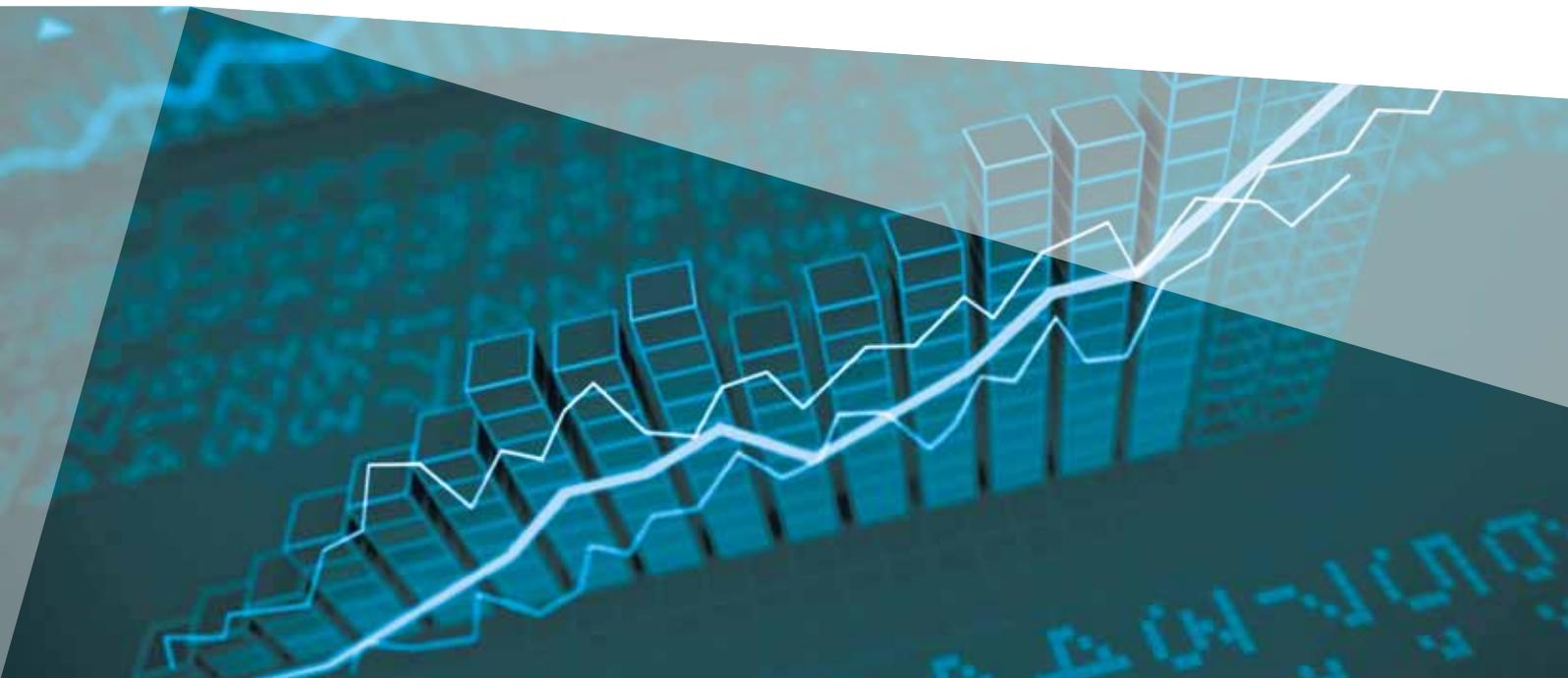


THE INTEGRATED PENSION GOVERNANCE AND RISK MANAGEMENT FRAMEWORK



*“For every complex problem,
there is an answer that is
clear, simple – and wrong.”*

– American newspaperman H.L. Mencken

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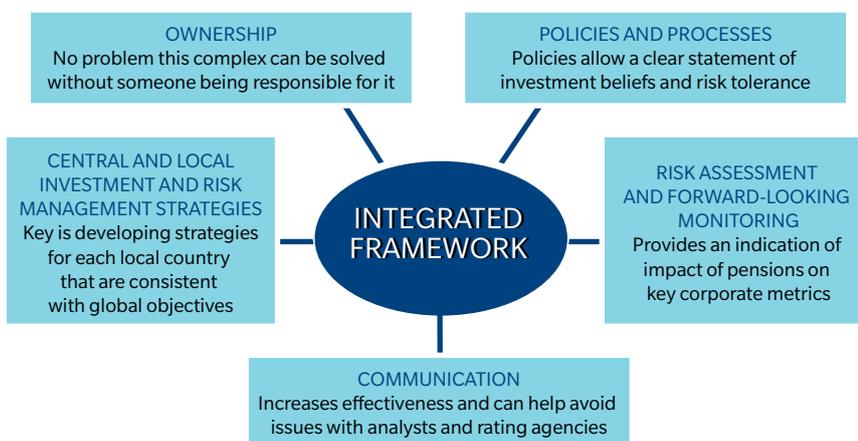
EXECUTIVE SUMMARY

In the context of rising risk management and governance requirements for multinational firms, Mercer has looked at how global defined benefit (DB) pension exposures affect these requirements and how they can best be managed.

Multinationals have traditionally preferred passive and decentralised approaches to managing local pension issues. However, this policy has become less and less tenable over the past few years – even without any regulatory or accounting pressure, the situation has deteriorated from one where the pension fund was just a minor component of corporate risk exposure to one where it is often among the largest:

- **The number of pension exposures has increased over the years.** Listed European multinationals with pension liabilities over €500m are now, on average, exposed in three countries beyond their own¹ and their aggregated pension deficit amounted to more than €240bn in 2010/2011.
- **The size of pension deficits has increased with low interest rates** (and for some countries, higher inflation), narrower credit spreads and flat asset performance (about 1.9% for 2006–2011, despite double-digit performance in 2009/2010 and 2010/2011).
- **The ratio of pension deficit to net debt has increased from 2.4% before the global financial crisis (GFC) to 4.1%, and the ratio of pension deficit to market cap has increased from 2.7% to 4.7%.**
- **Equity and credit analysts scrutinise pensions and adjust their recommendations and ratings accordingly.** Current pension debts are significant when compared with both net debt and market cap.

As pension challenges became bigger, multinationals believed that they needed to get actively involved in tackling the complexity of the pension problem and, in particular, the risks it posed to their financial standing. In our view, the solutions to this problem revolve around the development of an integrated governance and risk management framework, based on the following five key pillars:



¹ Based on Mercer's analysis of 228 listed European companies with five years of historical data and included in the EuroStoxx 600, as of February 2012.

We have also established the checklist below to help multinationals assess whether their pension exposures are significant and, hence, whether improvements are needed in pension risk management and corporate governance.

- Is the multinational exposed to DB pensions in three or more countries?
- Are the multinational's global defined benefit pension liabilities in excess of €500m?
- Have equity or credit analysts identified pensions as a significant issue?
- Could you benefit from a common pension risk committee or board?
- Do you still need to draft global pension policies and processes?
- Are you struggling to implement an effective risk monitoring system?
- Have you considered the possibility of moving to a global custodian?

This publication provides tips and tools that will help you regain control and achieve satisfactory levels of governance and risk management.

1. INTRODUCTION

In recent years, multinationals have faced growing pressure to reduce risks and improve governance. In response, they have put in place internal policies and processes to control their business risks and have developed company-wide risk budgets together with comprehensive corporate governance systems.

However, when it comes to defined benefit (DB) pensions, it seems that until recently, their efforts had not been rewarded and few had achieved lasting success. At the same time, the pension problem appears to be increasing in size and complexity.

This paper focuses on defining the DB pension risks and challenges, assessing how they affect multinationals and describing how they are best managed, controlled and governed.

THE PENSION CHALLENGE

The management of DB pensions is at the centre of a complex and intricate web of activities. In pensions, firms face a problem with ramifications that go beyond the realm of human resources or retirement. Indeed, one can list at least 10 domains on which DB pension management infringes:

- Actuarial science and demographics
- Investment and asset allocation
- Economics and capital markets
- Risk management
- Market finance and derivatives
- Corporate finance and accounting
- Regulation and solvency management
- Governance and monitoring
- Administration and operations
- Benefit design, rewards and incentives

The closures of DB funds have accelerated in many countries and, with the end of the DB game in sight, pensions have become legacy issues that must be dealt with as a matter of urgency.

THE MULTINATIONAL CHALLENGE

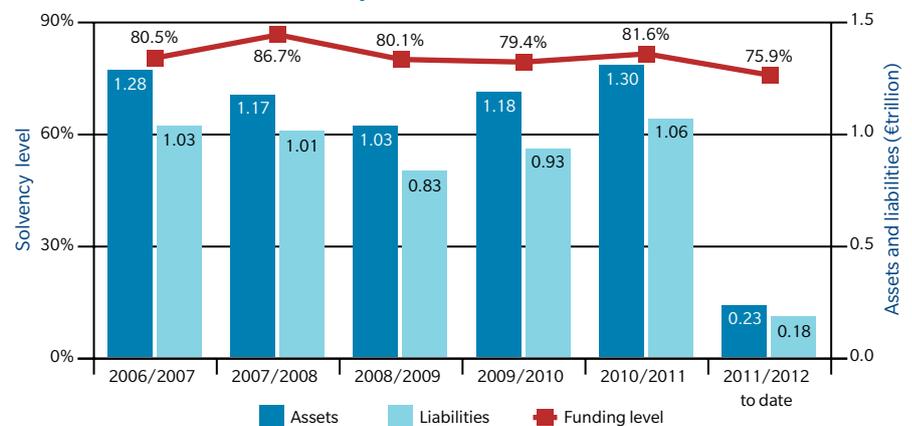
In the case of multinationals, the complexity of these issues is compounded by the fact that the DB pension funds are often located in countries other than the sponsor's headquarters, with different regulations, pension systems and currencies.

Traditionally, multinational corporations have limited their involvement in the management of local DB pension plans² to only one activity: global accounting aggregation. Although pension funds' assets and liabilities are calculated locally, multinational corporations aggregate them and report them at a global level³ as part of their annual or semi-annual accounting consolidation process. Beyond this, multinational firms maintained a relatively strict decentralised approach when it came to pensions and left policies, processes, arrangements, investment, risk management and governance issues to be managed at the local plan level.

Such a passive and decentralised policy has, over the past few years, become less and less tenable: even without any regulatory or accounting pressure, the situation has deteriorated from one where the pension fund was just a minor component of the corporate risk exposure to one where it is often the largest:

- The number and size of pension exposures has increased over the years. Listed European multinationals with pension liabilities over €500m are, on average, exposed in three countries beyond their own⁴ and their aggregated pension liabilities and aggregated pension deficit amounted to €1.3trn and €240bn, respectively, in 2010/2011.
- Between 2006 and 2011, the average accounting funding level did not really increase and remained between 79% and 87%. Our estimates (based on a limited number of companies) show a potential worsening for 2011/2012. The graph below shows the evolution of corporate pension assets, liabilities and funding level between 2006 and 2012.

Assets, Liabilities and Solvency Level⁵



Sources: Corporate annual reports, Bloomberg and Mercer

² Incidentally, they also limited their involvement in the management of their local defined contribution pension plans.

³ In the rest of the paper, we will mostly refer to "central or global level/services" for global pension management activities undertaken by the central management of a multinational at headquarters and to "local level/services" for all pension management activities undertaken by the local management in the subsidiaries.

⁴ Based on a Mercer analysis of 228 listed European companies with five years of historical data and included in the EuroStoxx 600.

⁵ Only 35 companies had filed for 2011/2012 at the time of analysis.

- The size of the pension deficits has increased, with low interest rates (and for some countries, higher inflation), narrower credit spreads and flat asset performance (about 1.9% for 2006–2011, despite double-digit performance in 2009/2010 and 2010/2011).
- Companies have deleveraged while market caps have crashed, reducing their net debts by an average of 14.4% (about €1,000bn) between 2008 and 2011. At the same time, pension deficits have gone up by 16.5% (about €34bn). The ratio of pension deficit to net debt has increased from 2.4% before the credit crisis to 4.1%, and the ratio of pension deficit to market cap has increased from 2.7% to 4.7%.
- Equity and credit analysts scrutinise pensions and adjust their recommendations and ratings accordingly.

As the pension challenges became bigger, multinational corporations believed that they needed to get actively involved in tackling the complexity of the pension problem and, in particular, the risks it represented to their financial standing.

In this context, they launched a number of initiatives attempting to improve the overall governance framework of pension issues and (re)gain a measure of central control over pension risk exposures.⁶ These initiatives have brought about an integrated or strategic framework in which corporate governance and asset-liability risk management are intertwined. Changes in the internal organisation (and ownership of the pension issue), global policies and processes, financial risk management activities, forward-looking monitoring and communication with stakeholders – the five pillars of an integrated corporate governance and risk management framework – play a crucial role.

OVERVIEW OF THE PAPER

Our paper provides a description of multinational financial risk exposures and the integrated corporate governance and risk management framework:

- We first define and analyse pension financial risks and governance issues in a global environment compared with the traditional single-country environment.
- We then describe what an integrated framework is and how it works. In doing this, we look at the five pillars and the way they are applied to retirement and pension issues.
- We continue our analysis by defining the process that underlies the establishment of this framework.
- Finally, we conclude our paper by highlighting some of the most salient implications in terms of overall strategy and practical implementation.

⁶ Some early movers started adopting these principles and implementing them at the beginning of the past decade (or, in some rare cases, in the 1990s).

This paper focuses on traditional asset-liability (financial)⁷ risks and any other risks that could affect the management of assets and liabilities and exacerbate financial risks. These tend to create more short-term volatility and costs and affect multinational sponsors' financial disclosures and credit ratings in a more systematic way. Financial risks are also more visible because they either fall under local solvency regulations or (directly or indirectly) affect the pension asset and liability values. Finally, although financial risks are often quite complex to govern from a multinational standpoint, they can, in most cases, be hedged.

⁷ We often refer indifferently to *financial* or *asset-liability* risks, but it is important to note that some nonasset-liability risks will also be taken into account in so far as they affect either the assets or the liabilities.

2. PENSION RISKS AND GOVERNANCE CHALLENGES IN A GLOBAL ENVIRONMENT

In this section, we identify the financial risks and the governance challenges that exclusively or principally affect multinationals (as these are often complex to hedge or govern at the central level) and assess their effect on the DB corporate sponsor. We also consider some of the drivers of these risks and their impact.

As multinationals are also exposed to the same pension financial risks and governance issues as traditional local companies, our analysis includes a comparison of multinational sponsors to local sponsors.

PENSION FINANCIAL RISKS IN A MULTINATIONAL ENVIRONMENT

FINANCIAL RISKS AND FINANCIAL RISK MANAGEMENT

- Financial risk covers mainly exposures to credit, market and liquidity risks. Other types of financial risks include foreign exchange, volatility and inflation, among others. Financial risk management is the practice of creating economic value in a firm by using financial instruments to manage these exposures and, in particular, credit and market risks. Similar to general risk management, financial risk management requires identifying sources of risks and their main drivers, measuring them and developing plans to address them.
- In a pension framework, most of the risks (although not all of them) – particularly those of a financial nature – are asset-liability risks. Managing the largest pension financial risks can help reduce the volatility of a plan's net position (be it accounting, actuarial or economic). Less deficit or surplus volatility helps bring about a more stable and predictable evolution for both the pension fund and the corporate sponsor. In a corporate pension context, a reduced level of deficit or surplus volatility can also benefit corporate finance metrics such as net debt, credit rating, earnings and cash flow. Therefore, focusing pension risk management activities on financial risks is instrumental from corporate finance and risk management standpoints.
- At the pension-fund level, implementation of risk management and risk reduction strategies relies on both the use of a set of well-defined physical⁸ and derivative⁹ instruments as well as changes in asset allocation.¹⁰ Liability-matching instruments are commonly used to reduce the interest rate and inflation sensitivity gap between assets and liabilities. Interest rate and inflation hedging positions are actively managed to increase or decrease their matching features. Finally, expected returns from risky investments are shaped (by buying protection against unwanted downside and selling potentially unnecessary upside) to meet the specific needs and requirements of the pension funds.

⁸ Some early movers started adopting these principles and implementing them at the beginning of the past decade (or, in some rare cases, in the 1990s). Examples include fixed income and index-linked bonds.

⁹ Examples include interest rate and inflation swaps and equity options.

¹⁰ Generally, these involve a switch from traditional risky asset classes (such as listed equities or residential and commercial real estate) into less risky ones and/or alternative investments, which can provide diversification benefits from risk and return standpoints.

KEY DIFFERENCES BETWEEN MULTINATIONAL AND LOCAL SPONSORS

Foreign pension exposures¹¹ create a number of additional financial risks for multinationals compared with the traditional pension financial risk exposures for local sponsors (as described in the sidebar “Financial Risks and Financial Risk Management” and the table “Asset-Liability/Financial Risks”). These additional risks stem from the fact that multinationals tend to report in their local currency but are exposed to foreign pension obligations. In particular, one can identify five risks that affect multinational sponsors differently to local sponsors:

- Interest rate basis risks, stemming from exposure to foreign fixed-income instruments and foreign pension liabilities
- Inflation differential risks, stemming from exposure to foreign indexed instruments and foreign pension liabilities
- Credit spread differential risks, stemming from exposure to foreign credit instruments and foreign pension liabilities
- Longevity differential risks, stemming from exposure to nonlocal longevity
- Currency volatilities for all foreign assets and liabilities and contributions to foreign pension funds

Most of these risks can be identified and quantified locally using traditional asset-liability management (ALM) tools. It is worth mentioning that if each of the foreign subsidiaries of a company is self-contained, with local revenues large enough to match local pension obligations, there is little exposure for the parent company. However, this is essentially the case for what is referred to as “multi-local” or “multi-domestic” companies¹² and not truly global or multinational companies, which tend to integrate production of their goods and services between markets. For truly global companies, the global pension exposure is more complex to estimate using traditional ALM models and approaches, as it is the outcome of the interactions of a number of local risks in a global environment.

Pension exposures are often of very significant sizes compared with the balance sheets of the corporate sponsors. A multinational may have accumulated foreign acquisitions during an expansion phase and, as the liabilities ballooned and/or the companies downsized over the years, may have been left with large legacy pension liabilities in several countries. So a “size” issue can be added to the list of risks threatening a corporate sponsor.

¹¹ As opposed to local or home pension funds.

¹² “Multi-local” or “multi-domestic” companies can be defined as companies that produce exclusively local products to meet the local demand without importing or exporting local primary, intermediary or final goods and services between markets.

The table below summarises each of the sources of risk and its impact on the DB pension assets, liabilities and deficit, comparing local sponsors with global sponsors.

Main Asset-Liability/Financial Risks

	Risk factors	Risk exposures		
		Assets	Liabilities	Deficit
Risks for local sponsors	Interest rate	Duration	Duration	Duration gap
	Inflation	Indexed instruments	Indexation	Indexation gap
	Credit spreads	Credit instruments	Accounting valuation	Credit spread gap
	Local return-seeking assets (RSA)	RSA volatility		RSA volatility
	Overseas RSA	Overseas RSA and currency volatilities		RSA and currency volatilities
	Longevity ¹³		Longevity increase	Longevity increase
	Local cash			
Contributions				
Additional risks for multinational sponsors (driven by foreign pension funds)	Interest rate	Nonlocal yield curves	Nonlocal yield curves	Interest rate basis risks
	Inflation	Nonlocal inflation instruments	Nonlocal indexations	Inflation differentials
	Credit spreads	Nonlocal credit instruments	Nonlocal credit spreads affecting accounting valuation	Credit spread differentials
	Local RSA	–	–	–
	Global RSA (incl. local equities of foreign pension funds)	Currency volatilities	–	Currency volatilities
	Longevity		Foreign longevity increases	Foreign longevity increases
	Foreign cash	Currency volatility	–	Currency volatility
	Contributions	Currency volatility	–	Currency volatility

These risk exposures increase if the reporting currency depreciates against the local pension fund currencies. The foreign sources of risks are also affected relative to each other by changes in exchange rates between foreign currencies. For example, a company reporting in US dollars will be exposed to greater risk from a UK pension fund if the pound sterling strengthens relative to US dollars. If the same company also has a Dutch pension fund and the euro weakens relative to the pound sterling, the relative exposure for the company will shift away from the euro towards the pound sterling.

¹³ Although longevity is not technically a market risk, it is considered in our framework as a financial risk, albeit sometimes difficult to estimate and expensive to hedge.

EFFECT OF LOCAL/GLOBAL RISKS ON BALANCE SHEET, NET INCOME AND FREE CASH FLOW¹⁴

Balance Sheet

The global pension deficit (and all its asset and liability components) is directly affected by the volatility of the local and foreign deficits and their drivers. As for local sponsors, the impact of the local and foreign pension deficits simmers through the balance sheet as a liability of the company (albeit under the quantitatively reduced and managed form of an International Accounting Standard [IAS] 19 *Pension Liability*, thanks to the smoothing effect of the IAS 19 corridor¹⁵). It therefore affects all corporate finance metrics (such as *net debt*, *enterprise value* or the company's *credit rating*) that incorporate liability measures. In practice, though, an increasing number of equity analysts and all credit analysts already use *full* accounting deficits when assessing the corporate impact of pensions and providing equity and credit recommendations (disregarding the smaller IAS19 *Pension Liability*).

Are these risks hedgeable at the global level? The risks and volatility of the local and foreign deficits are difficult to hedge at global level. Natural hedges could be found in other balance sheet items that would benefit from the appreciation of foreign-denominated assets or their exposures to foreign interest rate curves, inflation and/or credit spreads. However, these assets, even if they can offset some of the accounting deficit volatility, are rarely efficient hedges for the actual pension liability (even as defined and calculated under IAS 19). They typically do not provide the required duration, indexation or credit exposures.

Net Income

A company's earnings are exposed to the *pension expense* and therefore to the local interest rates used to determine the pension liabilities, the expected returns on assets as well as the inflation expectations, longevity assumptions and type of members¹⁶ through the local service costs. Volatility in any of these increases the potential drain on the company's earnings and affects the potential for dividend payments.

Are these risks hedgeable at the global level? Neither the pension expense nor its components can be hedged efficiently at the global level. Since most of the volatility comes from the difference between the interest rate on the liabilities and the expected return on assets, hedging the pension expense would be equivalent to hedging the sum of the local differences between interest rates and the expected return on assets, which would be extremely tricky at global level. At the local level, this is relatively easy to achieve using a liability-driven investment strategy.

¹⁴ Definitions of corporate finance and pension metrics are provided in the glossary.

¹⁵ The option of smoothing the gains and losses through the IAS 19 corridor will be removed from the new version of the accounting standard in 2013.

¹⁶ Actives, deferreds or pensioners.

Free Cash Flow

Pension Contributions are cash payments from the multinational company into the local pension funds. The available *Free Cash Flow* (FCF) is thus reduced by the amount of these (required and additional) contributions. These funds are calculated locally but are directly affected by currency volatilities (the contributions cost more in the reporting currency and drain more of the FCF if the reporting currency depreciates against the local currencies).

Are these risks hedgeable at the global level? It is difficult to see how one would hedge the various components of the pension contribution at the global level, as these can and do vary from year to year depending on a number of market and regulatory factors. Again, currency and local deficit volatility, which are the main drivers of the pension contribution volatility, can be only partially hedged – and mostly at local level.

Although the consequences of the above risks will be felt at the global level, most of them cannot be easily estimated (or appropriately managed) at this level and remain, in most cases, the responsibility of the local services. Therefore, there is a need for a risk management framework that would help identify and quantify these risks and within which global and local risk management strategies can be developed. To be truly effective, a global risk management policy must reflect the demands of changing market conditions and therefore needs an efficient governance framework.

GOVERNANCE CHALLENGES IN A MULTINATIONAL ENVIRONMENT

CORPORATE GOVERNANCE

- **Corporate governance** can be defined as the processes, customs, policies, laws and institutions affecting the way a company is directed, administered or controlled. An important theme of corporate governance is the nature and extent of accountability of particular individuals or groups in the organisation. Corporate governance also includes the relationships among the many stakeholders involved and the goals for which the corporation is governed. In contemporary business corporations, the main external stakeholder groups are shareholders, debt holders, trade creditors, suppliers, customers and communities affected by the corporation's activities. Internal stakeholders are the board of directors, executives and other employees.
- When it comes to DB pensions, governance revolves around all aspects of ALM that can affect the short-term and long-term performance and, eventually, the delivery of the pension promise. This includes not only the traditional pension corporate finance metrics, such as solvency and additional (recovery) contributions, the accounting deficit and the impact on net debt, the pension expense and net income, but also topics such as the choice in the pension management structure, investment vehicles, the investable universe, asset allocation and risk management guidelines, asset management costs, performance and risk monitoring and the payment of outperformance fees, among others.
- In a pension context, the main external stakeholders are the pension regulatory authorities, auditors and credit rating agencies on the one hand and investment consultants, actuaries, asset managers, investment bankers and custodian(s) on the other. The main internal stakeholders are the plan members, trustees (or their investment boards), HR and treasury divisions, board of directors, executives and often unions.

KEY DIFFERENCES BETWEEN MULTINATIONAL AND LOCAL SPONSORS

As for risk management, foreign pension exposures create a number of additional governance issues for multinationals compared with those of local sponsors. In fact, most areas of pension management face increased complexity and governance issues in a multinational environment. This is due to:

- The increased number of pension regulations, regulatory bodies, pension systems, investment vehicles and arrangements, custodians and actuarial, investment and risk third-party advisers
- The quality and reach of the tools, processes and strategies currently available to help multinationals manage pension governance issues (as in the case of risk management)

Multinational pension governance issues go beyond the local and global asset-liability risks and cover many other sources of risk. As mentioned in the introduction, we will consider these additional governance issues only in so far as they exacerbate the financial risks and make their management even more complex. Finally, as for the previous section on risk management, true multinational pension governance issues affect only globalised sponsors and not multi-local or multi-domestic companies.

The table below summarises the differences in governance requirements comparing a local single-country sponsor with a global multinational sponsor.

Governance Requirements

	Single-country sponsor	Multinational sponsor
Pension regulation	Unique	Multiple
Investment vehicle	Mostly unique	Multiple
Investment arrangements	Multiple	Multiple
Custodians	Unique/multiple	Multiple
Actuarial advisers	Unique	Multiple
Investment advisers	Unique	Multiple
Investment policies and strategies	Unique	Multiple
Risk budget and management strategies	Unique	Multiple
Governance and risk management tools	Multiple and very common	Rare and complex

The first bullet point above the table relates to the size and number of pension exposures and the fact that there does not seem to be any relief in numbers. The higher the number of pension funds sponsored around the globe by a multinational, the more complex the governance issues and the less adequate existing or commonly used governance frameworks, tools, processes and strategies become. Likewise, local governance issues become more difficult to integrate at a central level when they originate from a high number of DB pension funds with very different pension promises and/or regulatory environments.

THE CONSEQUENCES OF A WEAK OR INADEQUATE MULTINATIONAL PENSION GOVERNANCE FRAMEWORK

For pensions, as for any other business activity, a weak or inadequate governance framework can have a number of negative consequences. We will focus here on the loss of control and lack of efficiency and effectiveness in managing global pension issues, whose materiality is significant for the corporate sponsor.

The first consequence is [a loss of control of the pension situation](#) by the central management of the multinational corporation. This will potentially leave local services and subsidiaries alone to face their pension issues. The negative impact will be felt on the capacity of central management to:

- [Globally assess the pension exposures and correctly measure the amount of risk](#). Weak governance means first and foremost a lack of accurate information and data about local and global pension exposures. This is mostly caused by inadequate local pension governance systems and/or an absence of communication between the local services and central management (see below). This breakdown in governance is amplified as capital markets and other pension risk drivers become more unstable: increases in market volatilities or in pension member longevity may not be taken into account if the governance system is deficient. This could then mean that the multinational's assessment of the estimated pension risk exposure would then be inaccurate and would probably become more so over time. Without understanding this, the multinational may become exposed to unexpected changes and volatility at a time when it is too late to take corrective action. This, of course, will in turn have an impact on the corporation's financial exposures.
- [Understand and meet the needs of the subsidiaries](#). No amount of communication can remedy a weak governance framework, as central and local stakeholders will not be able to establish a constructive dialogue on what is required to set local investment objectives and risk tolerance limits consistent with the company's global investment objectives and risk budget. In this context, local and global governance and risk management tools are inefficient and could produce the wrong outputs. In extreme cases, this situation can also affect contribution negotiations and local regulatory filings, with adverse consequences.
- [Help local subsidiaries benefit from the multinational's bargaining capacity](#). One of the indirect impacts is the lack of local leverage of the multinational's capacity to negotiate effectively global discounts and deals with asset managers, custodians, investment and risk management advisers, actuarial advisers and other third-parties. This results in asset management and other third-party costs that are higher than expected and that adversely affect local asset values and net pension positions. Overall, the parties most at risk here are the pension fund members, who see part of the value lost to third-party providers, and the sponsors, who may have to provide additional contributions.
- [Communicate externally about pensions](#). Given the current focus on pensions, risk management and governance, multinationals must be able to rely on sound information and data and communicate them to investors and analysts.

The second consequence is a [lack of efficiency and effectiveness in managing global pension issues](#). This will affect the quality of the global investment and risk management processes and can lead again to a number of negative impacts on the capacity to:

- [Identify local and global pension exposures](#). If exposures are not identified in a systematic and comprehensive way, risks are not identified either.
- [Understand and integrate local risk management strategies](#). When risk management strategies are implemented locally, a weak governance system prevents them from being taken into account globally and distorts any attempts by the multinational to make sense of its global risk exposures.
- [Offer best-in-class ideas to the local pension funds](#). When governance is weak at a central level, successes and positive results (as well as failures and limitations) of the strategies obtained in one part of the world are not correctly assessed and best-in-class ideas are not applied (or failures avoided) in other parts. This absence of cross-fertilisation can become a serious hindrance to progress in the management of the pension risk exposure, lowering the extent of global investment risk management coordination and its benefits.
- [Effectively monitor risks](#). If risks are not systematically and comprehensively monitored, the corporate sponsor is exposed to the regular resurgence or worsening of risk exposures thought to have been hedged or effectively managed. This limitation can become particularly acute if local pension funds implement sophisticated derisking investment strategies, including liability-driven investing strategies and alternative asset classes. The more sophisticated and elaborate the strategy, the more complex the governance system.

Ultimately, a weak governance framework will affect a multinational's capacity to deliver pension promises to pension fund members.

CONCLUSION

This review of the pension risk management and governance issues for multinationals has shown that:

- Pension financial risks cannot be easily dealt with at a global level by multinationals, even though the impact of deficits, asset volatility or an increase in liabilities will affect their global financial standing. At the same time, global integration of local risk management and governance strategies are needed.
- This integration needs to take into account two major constraints that go beyond traditional pension management:
 - The first focuses on global versus local governance requirements
 - The second focuses on global versus local investment objectives and risk budget
- Failing to tackle these two constraints in the same framework markedly reduces the efficiency and effectiveness of an integrated framework and leaves the multinational sponsor exposed to an unknown quantity of potentially unknown risks.

3. INTEGRATED GOVERNANCE AND RISK MANAGEMENT FRAMEWORK

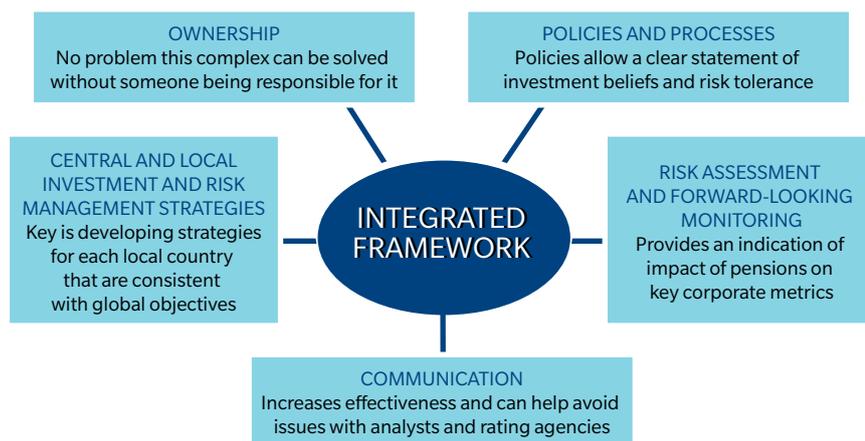
In this section, we describe the workings of the integrated framework and of its components (referred to as the five pillars). We conclude by showing why the integrated framework meets the needs and objectives of multinationals and brings about benefits in terms of risk management and governance. We illustrate this section with a short case study drawn from one of Mercer’s experiences with a European multinational.

THE INTEGRATED FRAMEWORK AND ITS FIVE PILLARS

The integrated pension governance and risk management framework helps solve the complexity of DB pension management in a multinational framework and can be defined as:

“The pension arrangements that link together the local management and governance of DB pension funds and the global investment objectives and risk budget of the multinational sponsor”.

The integrated framework rests on five components or *pillars*.

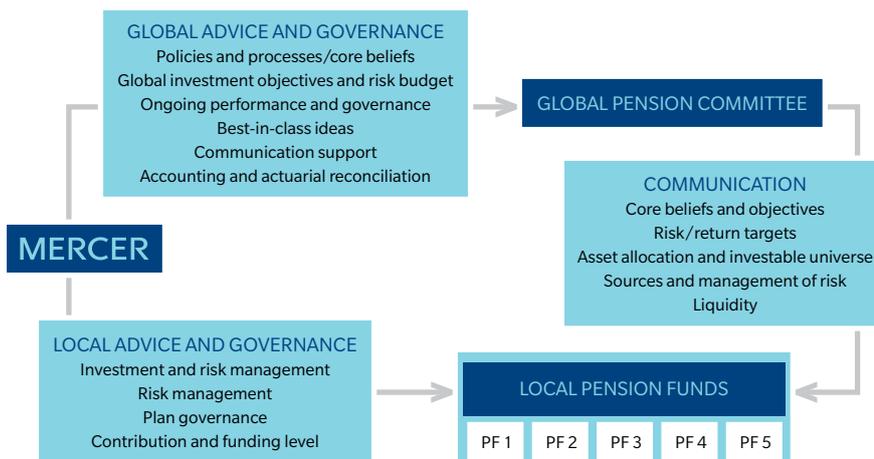


Individually, each pillar addresses one or more of the global risk management and governance issues. However, as a group, the pillars address most (if not all) of the internal and external pension issues relevant to multinational companies:

- **Ownership of the pension issue.** No problem as complex as multinational pension risk management and governance can be solved without someone being responsible for it.¹⁷ In this respect, many multinationals sponsoring DB pension funds have gone through internal reorganisations to establish global pension governance and risk committees and boards. These are usually staffed with members drawn from global and local HR, treasury and pension units as well as external staff with the relevant pension investment and risk management experience. In most cases, the objectives of these committees and boards are to set policies and processes that help define risk and return targets, define the governance and risk management framework, develop risk management strategies, monitor the performance and risk exposures during and after implementation, and submit recommendations regarding pension strategy to the company's board and Chief Executive Officer. Finally, the committees are very practical outlets for communicating with global and local stakeholders within a multinational corporation.
- **Definition of the appropriate policies and processes to solve the pension issue.** Setting up investment and risk management policies helps multinationals state their core beliefs related to return objectives, asset allocation, asset diversification, active management and risk and liquidity premia on the one hand and the types and sources of risks, risk tolerance limits and risk management tools on the other. The policies must include not only the (preferably standardised) processes on how to develop investment and risk management strategies and how to monitor and govern them globally but also how these are going to be communicated internally and externally to stakeholders. The one common constraint for these policies and processes is that they have to accommodate, as much as possible, the local investment, risk management and solvency regulations. A global policy or process that is not applicable locally because it goes against the spirit or the word of local pension regulation and authorities is not helpful.
- **Design of strategies appropriate to the local and global contexts.** Investment and risk management strategies can take many forms for local and multinational companies alike. However, being able to develop suitable strategies in each country for each plan that will achieve local return objectives within risk tolerance limits that are consistent with those set in global policies often remains a challenge. Dedicated global pension management services must therefore receive help from local services when they define global investment and derisking strategies that take into account local implementation parameters (such as local investable universe, trigger levels, derisking tools and liquidity requirements, among others). Multinationals often rely on a two-way approach in which global and local services work in a coordinated way to define the global policy objectives. The role of an external global investment and risk adviser can be crucial to help establish the global policies and processes and implement the local risk management and governance strategies (see the "Two-Way Approach" on the next page).

¹⁷ Incidentally, ownership and, of course, accountability have become critical in solving complex problems in all important areas of the corporate world.

Two-Way Approach – Mercer in a Global and Local Risk Advisory Role



- Proper assessment of the risk exposures and their evolution.** Monitoring asset performance and pension fund solvency has been mostly a backward-looking exercise that may describe what the risk exposure is at a point in time but does not say much about where it may be in the future. Therefore, traditional performance and solvency monitoring has been complemented over the years with more forward-looking risk assessments relying on value-at-risk models and stress tests. These metrics, when properly calibrated, can offer a number of indications on what the impact of risk could be on the corporate finance and solvency metrics exposed to pensions. Finally, they also help ensure that once a risk is hedged, transferred or properly managed, it is also adequately monitored to limit the recurrence risk.¹⁸
- Communication and engagement with stakeholders around pension issues.** Establishing dialogues and working groups with trustees and other internal stakeholders at global and local levels to discuss (and improve) the asset allocation, risk management strategies or contribution policy helps bring about risk and cost reductions and increase overall governance and control. Better communication and engagement also increase the feeling of ownership around pension issues and the effectiveness of the integrated risk management and governance framework. The communication effort must also be directed at external parties, such as equity and credit analysts and rating agencies, which often penalise corporations for their lack of transparency when it comes to pension exposures.

¹⁸ The probability that a risk assumed to have been hedged again affects the pension fund or the multinational sponsor.

IMPLICATIONS

The major implications for the specific pension arrangements underlying the integrated framework are as follows:

- The integrated framework is and must remain in place **for the long term**. Although the integrated framework will start benefitting the sponsor immediately (especially when it comes to managing short-term capital market risks), the impact is expected to be felt until the last payment is made to the last retiree of the last functioning DB pension fund. The investment in a reliable and well-designed integrated framework will pay back the most during times of stress – when decisions have to be made under pressure – as it will deliver vital information on the scale and extent of the pension financial risk exposures.
- These arrangements tend to **mix local and central inputs and information flow** in all aspects of the integrated framework. In this, they are fundamentally different from those required for traditional approaches, in which the multinational’s central management tends to stay far removed from the local governance and risk management arrangements and in which local services are not invited to contribute to the global investment objectives and pension risk budget. The information flows can and do go from local to global services and vice versa, and both groups are included in an ongoing dialogue at all times and for all pertinent topics.

	Traditional approach	Integrated approach
Risk management and governance arrangements	Local	Local/global
Policy and process development	Global	Global/local
Investment and risk management strategy design	Local	Global/local
Strategy implementation and performance	Local	Local/global
Forward-looking monitoring	Local	Local/global
Communication	Local/global	Local/global

- From a corporate standpoint, the integrated framework can be considered as **a part of the global company-wide risk budget and overall corporate governance and risk framework**. The pension policies, processes, approaches and metrics have to be, to the greatest extent possible, consistent with their corporate equivalents. In this context, the integrated framework can materially improve the overall governance and increase the level of overall corporate transparency. These last two points have practical implications for factors such as credit ratings (as described earlier). Beyond the removal of the dichotomy between central and local pension risk management, it is also important to emphasise that the dichotomy between pension financial risks and other corporate risks is also removed. While pension financial risks are part of the financial risk category, they sit alongside the core business risks and other corporate risks as part of the multinational corporate risk budget. This also has implications for global investment objectives and the risk budget. This is explored in more detail in the next section.

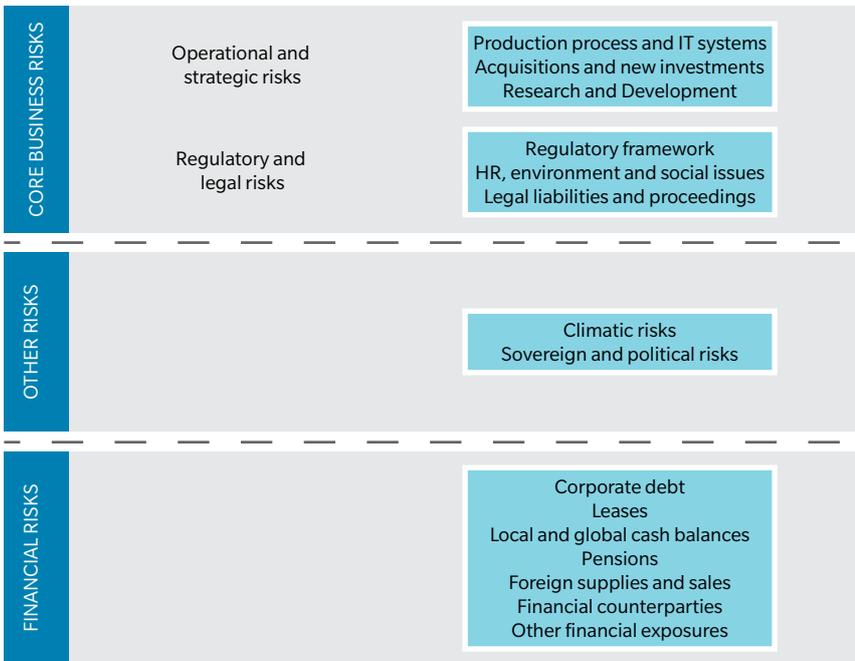
CORPORATE RISK BUDGET

Corporate risks can be defined as any threat to financial objectives, measured in financial terms. Corporate risks are the metric against which success of (or return on) a corporate strategy can be measured. Any investment or strategic decision brings potential rewards but also exposes the corporation to a set of corporate risks. These can essentially be broken down into three types: core business risks, other general risks and financial risks.

Within a multinational firm, the allocation of resources to support initiatives and projects is paralleled with an allocation of risks spanning borders and businesses. This allocation is undertaken within a global corporate risk budget.

A global corporate risk budget gives rise to a holistic process in which all risks are included in the company's risk budget. Without this, it is difficult to assess how much risk a company can take, which risks need to be hedged or transferred and which risks need to be governed.

It is crucial that pension risks are integrated into the wider corporate risk budget. In this way, multinationals can truly appreciate the scale of their pension risks and the impact these could have on wider business success. The way in which pension risks are viewed and managed alongside other business risks will depend to a large extent on the sponsor's business and global exposures.



Nonfinancial pension risks, such as administration and operations or benefit design, rewards and incentives, are usually incorporated into other risk categories, such as Operational and Strategic Risks or Regulatory and Legal Risks.

- **Governance in an integrated framework goes much farther** than the traditional backward-looking asset performance and solvency monitoring. Because a risk budget must be forward-looking and all inclusive by nature, there is a need to govern all sources and drivers of risk and define suitable risk measures. While this forward-looking governance can take a number of different shapes, it must cover at least the following two aspects when dealing with financial risks:
 - A quantification of possible future outcomes over predefined periods (either through simulations or capital market stress tests and scenarios) to increase the visibility and horizon of the investment and risk management strategies – this provides tools and metrics to assess and govern the possible short-, mid- and long-term evolutions of risks
 - A qualification of these possible future outcomes incorporating noncapital market risk drivers (external, such as changes in regulation, and internal, such as changes in the corporate strategy, benefit policy or terms of the covenant) that may affect asset performance, liability valuation or a combination of both

In practice, the type of governance arrangements established within an integrated framework resembles an early warning system. The forward-looking monitoring activities warn multinationals of an imminent (or, in extreme cases, actual) breach of risk limits and help implement corrective measures while the situation permits and risks are still manageable. Beyond a certain point, many risks become unmanageable and the “cleaning up” costs can be very high in relation to the corporate sponsor’s capacity and/or the potential benefits.

BENEFITS AND ADVANTAGES

The main benefits of an integrated governance and risk management framework are that it meets the needs and requirements of multinationals looking to address pension issues by:

- Standardising the policies, processes, tools, governance and monitoring activities. This facilitates their implementation or use at local and global levels and enables the various stakeholders to communicate using a common pension “*language*”.
- Raising the level of communication and dialogue with various stakeholders on pension policies and strategies and their implications for multinational’s employees. As mentioned above, this is a key benefit for multinationals for whom distance, languages, local regulations and a number of other factors are real and tangible obstacles in the sound management of pensions.
- Enabling the management of the multinational corporate sponsor to understand local risk management and governance issues and how they play out at global and local levels. Again, because local regulations and requirements can vary to a considerable extent between countries or even between different types of pension investment vehicles, being able to assess and govern local objectives and risks under one single framework makes things tremendously easier for the multinational’s corporate management.
- Enabling central management to integrate local investment and financial risk management strategies into the global investment and risk management process. This can sometime prove to be quite complex to carry out to its full extent without the proper modelling tools, as the interactions between the various local strategies (even when developed within a unique global policy framework) may have either offsetting, completely independent or compounding impacts. Incorporating all of them brings crucial knowledge on the global impact of changes in investment strategy and of specific risk management strategy at the local level.

4. PROCESS AND PRACTICAL ASPECTS

In this section, we describe the process to follow when establishing and running an integrated corporate governance and risk management framework. It includes a number of steps and implementation requirements. The emphasis on each step will vary with the number of foreign plans and their local regulations as well as the capacity of the global and local pension services of the multinational company.

PROCESS

The integrated framework process is usually composed of six mostly consecutive steps.



Step 1: Internal dialogue

The engagement and involvement of [internal stakeholders](#) must take place before establishment of the internal pension risk and governance body, as a number of tasks require internal buy-in from global and local pension services.

The objectives of the internal dialogue are to:

- Review the constraints of the multinational sponsor when it comes to global pension management and understand the capabilities of the global and local services
- Set guidelines on the objective of the integrated framework (from improved control and governance over DB pension to streamlining of pension procedures or increased economies of scale)
- Help select the members of the internal committee and ensure that the choices made are internally accepted
- Define the other components of the integrated corporate governance and risk management framework as well as a timetable to implementation

Step 2: Internal (re)organisation

The second step is dedicated to a series of internal (re)organisations that will lead to the appointment of the **internal pension risk and governance body** (be it a committee or a board) to formally take responsibility for the governance and risk management issues from a central management perspective. This body tends to draw its members from central and local pension services and helps ensure that the various services (HR, Chief Financial Officer, Treasurer and others) are adequately represented. It will also have specific objectives and responsibilities.

The primary objectives of the internal (re)organisations are to:

- Secure the pension promise through prudent risk management of the assets and liabilities of all DB pension plans while maintaining a cost-effective strategy that takes into account the implications of the company's financials
- Manage risks and solvency within predefined limits/control plus credit issues

In practice, the objectives of this body will cover a number of topics, such as:

- Development of the global policies and processes and, in particular, the core beliefs in terms of investments and risk management (see Step 3)
- Composition of the global pension risk budget and definition of global investment objectives and risk management limits (see Step 4)
- Definition of the risk metrics and, in particular, the relevant forward-looking indicators (see Step 5)
- Renegotiation of agreements with third-party providers and advisers to leverage global relationships (see Step 6)
- Delegation of implementation of all the relevant ongoing activities (see the next section)
 - Monitoring performance and risk exposure and implementing all other governance activities
 - Supporting the accounting and actuarial reconciliation exercises
 - Interacting with third-party advisers and providers and selecting best-in-class ideas to bring to the local services
 - Supporting communication and dialogue between central management and the local services in any possible way

Step 3: Policies and processes

The global investment and risk management policies and processes will establish the foundations of the integrated framework:

- The policies detail the **core beliefs** and include the multinational sponsor's views on, among other things, asset returns, asset allocation, asset diversification, active management and risk and liquidity premiums on the one hand and types and sources of risks and risk management tools and strategies on the other.
- The processes describe the mechanisms for **setting and achieving the return objectives within the risk limits and developing the global strategies**. Beyond the integration of local and global services, the topics covered by the processes are:
 - The local regulatory constraints
 - The development of a risk budget and of investment objectives
 - The type and depth of local and global asset-liability modelling exercises to set the investment objectives
 - The interactions with other sources of corporate risks

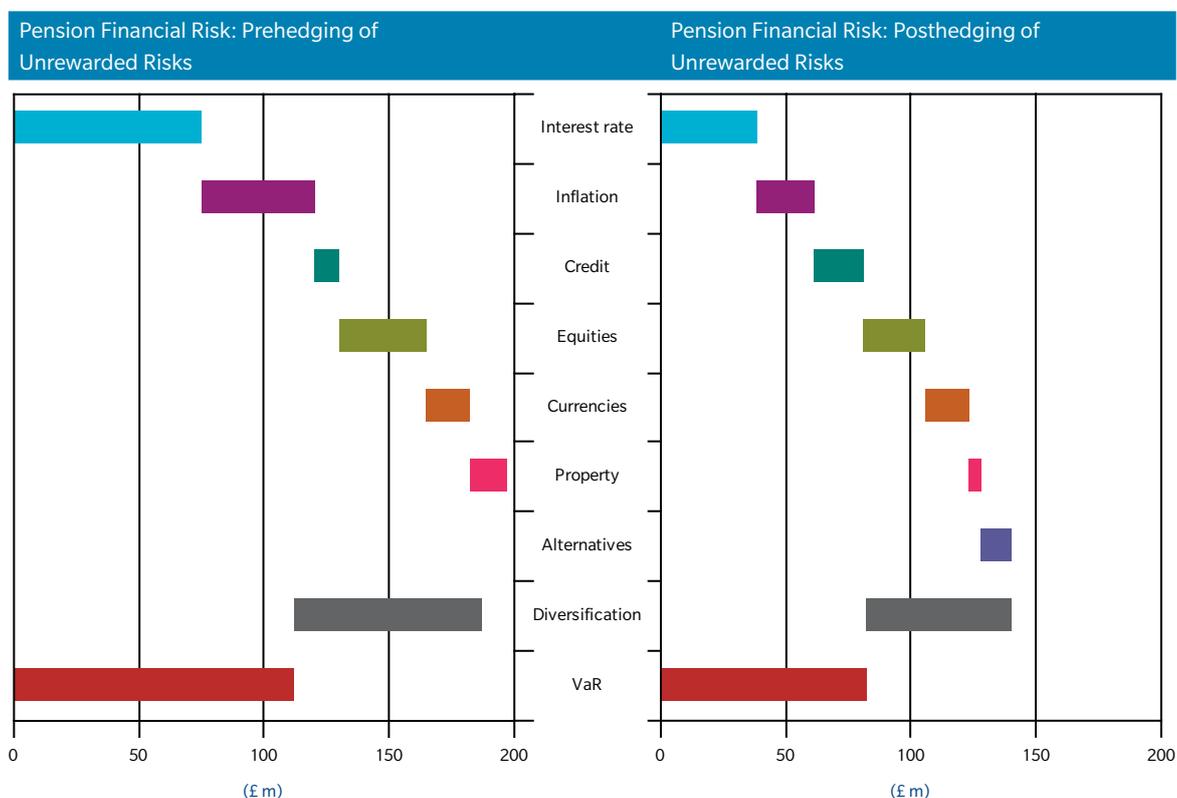
Step 4: Global investment and risk management strategy

The integration of the governance and risk management frameworks creates an environment conducive to the design of appropriate global and local investment objectives and risk budgets.

- Based on the set global policies (in particular, the core beliefs), the global and local pension services can work to develop consistent **investment objectives**.
 - While the overall investment objective is estimated in relation to the return needs of the local funds, the global asset allocation guidelines and the actual local asset allocation are determined on the basis of asset-liability modelling exercises.
 - Traditionally, asset-liability modelling exercises have relied on simulations of capital market and asset class movements and their impact on both assets and liabilities over mid- to long-term horizons. Most models are applicable at the local level for a single plan (or at least for plans with similar types of liabilities).
 - At the global level, an asset-liability exercise can prove to be more complex but can still be accomplished if properly managed.

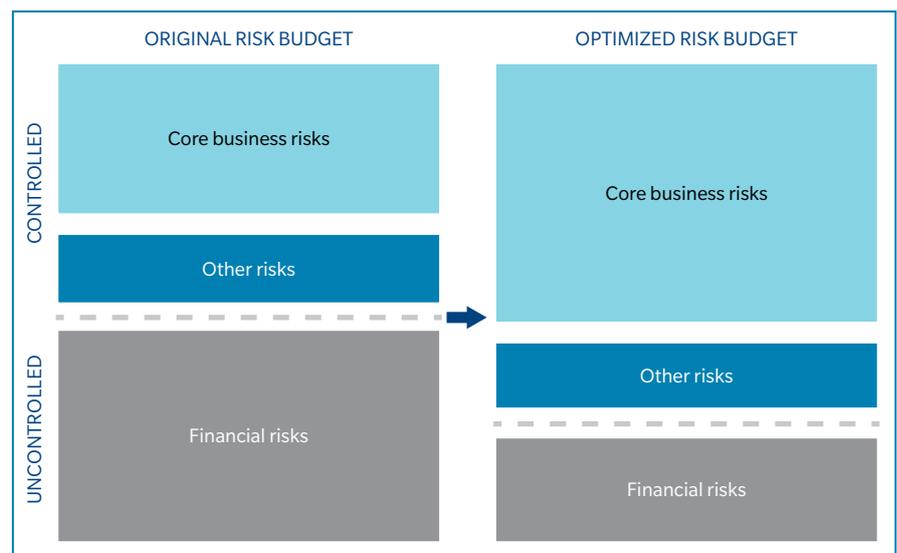
- The other objective is to build a **risk budget** to maintain overall control of financial risks in order to assess which risks are worth taking and which should be hedged and to which extent. This is achievable by (1) allocating risk between sources of risk and countries, (2) setting financial risk tolerance limits and (3) maintaining the financial risk(s) within these limits through appropriate risk management strategies.
 - The tools to calculate the risk exposures are generally similar to the ones used for asset-liability modelling purposes. In addition to the traditional asset classes and investment vehicles, they also include hedging instruments such as interest rate and inflation derivatives.
 - The universe of hedging instruments (such as the one of investable assets) should be part of core beliefs and defined in the global policies.
 - The risk limits must be set in a consistent manner at local and global levels. These limits must be detailed enough to provide clear indications on the objectives of the risk management policy and enable the services to establish an adequate forward-looking monitoring framework. The selection of the metrics to monitor the evolution of the risk exposures is detailed in the next step.
 - Finally, the internal body should develop a series of strategic risk management activities to be implemented if one or more risk limits are broken.

The charts below show the allocation of risks between categories in the traditional context of a local pension fund before and after implementing a risk reduction strategy at a single plan level. The main outcome of this risk reduction strategy is that the corporate sponsor has freed some risk budget either for other pension funds or for nonpension activities.



Source: Mercer

- The relationship between the pension financial risk budget and the larger corporate risk budget must be taken into account when completing this risk budgeting exercise.
 - At the global level, the amount of pension financial risk must be commensurate to the capacity of the corporate sponsor to absorb it. This exercise cannot be undertaken in isolation from the rest of the corporate risk budget, as it aims not only to minimise financial risks for pension purposes but also to provide the multinational more breathing space for its core risk management activities. For example, in the charts on the previous page, the reduction in the local pension risk achieved through hedging would allow additional risk to be taken in core activities within the overall risk budget. If the corporate sponsor cannot take more operational risk, it will be constrained in its development, and this could harm the pension promises in the long run. For nonfinancial corporations, an optimised corporate risk budget will maximise the allocation to core business risks compared with financial and other risks.
 - It is worth noting that other sources of corporate risks can also be financial, and it is important to understand to what extent some of the financial risks offset each other in the corporate balance sheet.¹⁹



A direct and continuous dialogue between local and global services remains crucial in every component of this step to help design the right risk management solutions and implement them. In practice, the management of the pension risk budget is as dependent on the expected investment returns by asset class as it is on the capacity of the multinational corporate to allocate risks to pension investment activities.

¹⁹ Although this is not the topic of this paper, we would like to point out that beyond the corporate debt, programmes of debt or equity buy-back, cash balances, long-term investments and financial hedges (such as FX or interest rate), CFCs sometimes show interesting features (currency, indexation to inflation or others) that would need to be taken into account in the corporate risk budget. The management of all corporate financial risks can be dealt with in a similar manner but is a different exercise.

Step 5: Definition of forward-looking risk metrics

The solutions designed within an integrated framework can last only if they are properly governed. One of the aspects of this governance is to look towards the future and not only the past, as most passive and traditional pension asset performance and solvency monitoring systems tend to do. Therefore, the objective of this step is to select **suitable and compatible metrics to measure risk exposures** for the local plans and at the global corporate multinational level. The main challenge is that some metrics may not be applicable to all cases, and others may require a degree of customisation to fit the specific needs of the local plans and the multinational sponsor. Finally, as mentioned in section 3, some of the most relevant governance activities will probably focus on the relation between two or more metrics, involving typical financial risk measures and more qualitative metrics at the same time.

The process to select the relevant risk metrics must therefore include the following phases:

- Complementing the risk budgeting exercise, the identification of the main risk drivers will be used as inputs in the selection of the quantifiable risk measures (see the “Financial Risk Metrics” sidebar) as well as the more qualitative metrics.

FINANCIAL RISK METRICS

There is a wide array of forward-looking financial risk measures, and the selection process will depend on company-specific elements.

The three main types are the value at risk (VaR), the economic scenarios and the stress tests. These are commonly used to illustrate risk budgets and forward-looking governance indicators:

- The financial risk management’s concept of **VaR** is a widely used risk measure in the context of pension asset-liability modelling. For a given asset portfolio, liability cash flow, probability and time horizon, the VaR is defined as a threshold value such that the mark-to-market deficit over the given time horizon exceeds this value (assuming normal markets) with a specified probability level. Among the various types for asset and liability modelling approaches, the most common are stochastic (using random simulations of market movements based on assumed statistical distributions for volatilities, correlations and expected returns) and parametric (using historical volatilities, correlations and expected returns to assess possible market movements).
- **Economic scenarios** are intended to help multinationals test the robustness of their investment and risk management policies against potential future economic environments.
- **Stress tests** are usually company-specific. They can be based on single-risk sensitivities or on historical capital market events or a mix of both.

- The internal pension and governance body will then establish the set of metrics to govern. The objective here is to select metrics that are most relevant for the multinational sponsor, in particular if linked to other metrics as described in Section 2.
- This step must be concluded with a consensus with regard to the metrics and a workable system in place (including forward-looking monitoring tools).
- Finally, as for the global corporate risk budget, the governance approach and the forward-looking risk metrics have to be consistent with the rest of the overall corporate governance strategy. To the extent possible, it is highly preferable for a multinational to standardise its policies and processes.

Step 6: Review of third-party service providers

The internal (re)organisation and creation of the dedicated body must be communicated early to external parties (such as advisers, custodians and asset managers, among others) involved in the management of pensions.²⁰ The involvement of third parties can greatly increase the efficiency and effectiveness of the integrated framework, especially if they maintain or even improve their capacity to support the company's global and local services.

In this context, once the integrated framework is in place, a review of the third-party providers and a possible streamlining of their services can be undertaken. Specifically, this step aims to:

- Reduce costs where and when possible
- Improve the level of external governance for asset management and custody services
- Streamline the internal administration requirements and the complexity of external pension arrangements

Fewer and better advisers, custodians and asset managers are easier to govern and to negotiate with and, in general, the integrated framework leads to some or all of the following:

- The selection of a single global custodian
- The selection of global actuarial, investment and risk management advisers
- The negotiation of a restricted list of preferred asset managers for all DB pension funds (sometimes also extended to defined-contribution plans)
- The implementation of an asset pooling exercise for selected equity and bond mandates

²⁰ This ensures that the changes in the pension governance and risk management strategies implemented by a multinational are properly understood.

In practice, the bargaining position of a multinational sponsor is greatly improved when it leverages the number of pension funds and the size of the assets under management to negotiate better terms with third-party service providers.

ONGOING IMPROVEMENT OF THE INTEGRATED FRAMEWORK

Once in place, the integrated governance and risk management process itself needs to be reviewed on a regular basis to maintain its efficiency and effectiveness, as the global environment is always evolving and changing:

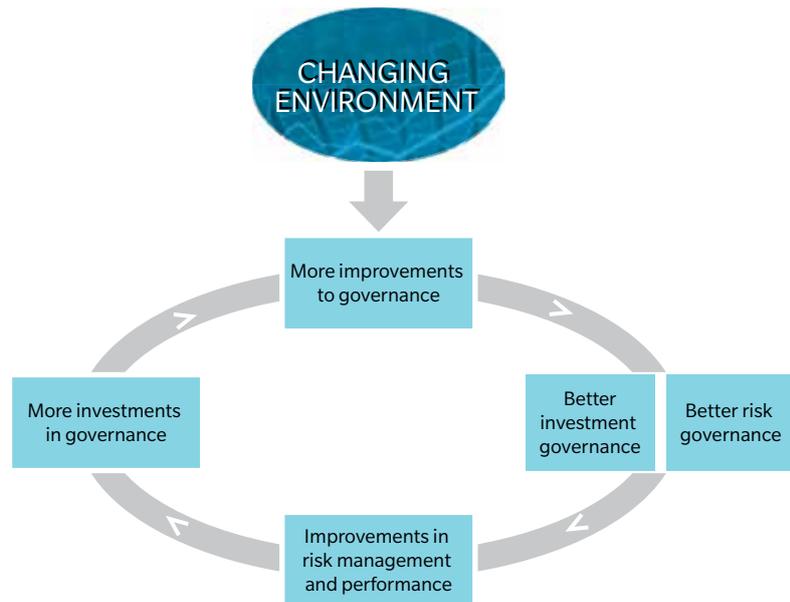
- External conditions sometimes change slowly (as with the drift in longevity) and sometimes more abruptly (change in regulation²¹ or market shocks). No system is or can remain an island for very long.
- New ideas that are brought to the global committee or to local pension funds can lead to either incremental or fundamental changes in investment, risk management or governance approaches.
- Multinationals' corporate strategies can lead to (dis)investments and other changes in the exposures to DB pension funds

Taking into account the changing environment will help maintain the relevance of the integrated framework. This requires changes to be continuously applied to the governance approach and fed back into the process. In a way, a properly managed process can produce a self-generating and dynamic virtuous cycle in which improvements in governance lead to improvements in performance and risk management. This can be achieved only if enough flexibility is built in the integrated framework at the outset.

²¹ Changes in regulation are not the most difficult to predict, as there are often consultations and long periods of negotiations before enacting a new regulation.

Virtuous Cycle

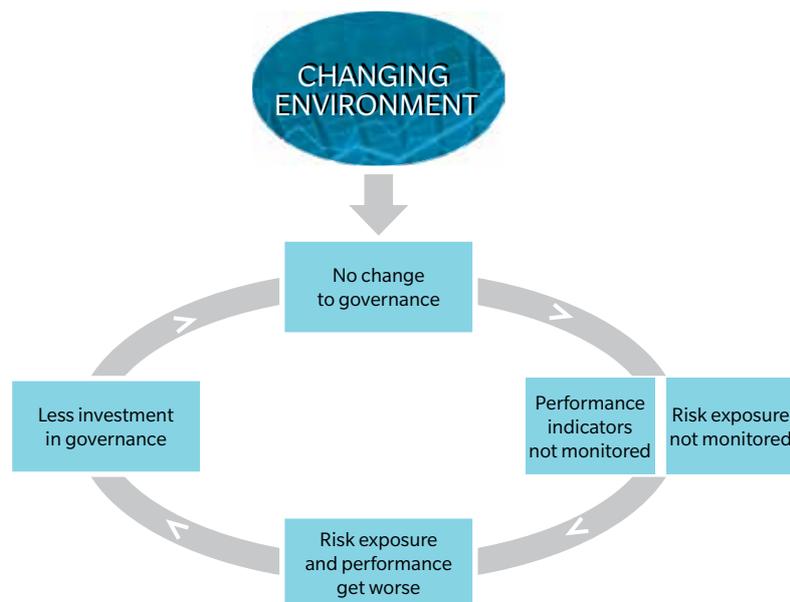
(Integrated governance and risk management process)



Conversely, not taking into account the changing environment when developing the governance approach can (and often does) lead to less investment and risk governance. This creates a vicious cycle that, once triggered, is difficult to roll back, and its impact can reach beyond less-than-optimal governance with reduced risk management and investment performance.

Vicious Cycle

(Weak governance and risk management process)



5. CONCLUSION

Corporate governance remains the cornerstone of successful risk management strategies. Without integrating the two, it is very difficult to:

- Effectively manage (if not permanently reduce) financial risks
- Significantly reduce costs
- Improve the overall control of the pension risk exposures

However, this will happen only if ownership of the pension issues is allocated to an internal body with clearly defined responsibilities and objectives and if these are communicated internally and externally. Lack of ownership and lack of communication will hinder the entire process and produce limited results.

Even though such an integrated framework appears relatively complex to put in place and run (and probably is), when it comes to pension financial risks, there is no simple answer that delivers long and lasting solutions.

6. GLOSSARY

Balance sheet's Pension Liability. IAS 19 allows gains and losses due to changes in the pension plan or market returns to be smoothed over several years, rather than be recognised at once. As a result, the **balance sheet's Pension Liability** generally does not reflect the full net asset or liability.

Debt covenant risk can affect the capacity of the firm to restructure its outstanding debt and/or take on more debt.

Enterprise value is a measure of a company's value and is often used as an alternative to straightforward market capitalisation. Enterprise value is calculated as market cap plus debt, minority interest and preferred shares minus total cash and cash equivalents.

Pension contributions. In funded pension plans, **contributions** from the employer are invested by the pension fund towards meeting the benefit obligations. One tends to differentiate between regular contributions set for the long term by actuarial calculations and additional contributions required for the duration of recovery plan in the case of a pension deficit.

Counterparty risk affects any financial activity involving a counterparty – from receivables to bank deposits and cash management and to over-the-counter derivatives.

Currency risk affects all foreign exchange-based activities.

Free Cash Flow (FCF) is a measure of financial performance calculated as operating cash flow minus capital expenditures. FCF represents the cash that a company is able to generate after investing to maintain or expand its asset base. FCF allows a company to pursue opportunities that enhance shareholder value.

Inflation risk affects revenues and expenditures as well as the present values of any asset or liability indexed to consumer price or wage inflations

Interest rate and credit risks affect, among others, debt issuance and refinancing, leases or derivative pricing on the liability side of the balance sheet as well as government and corporate bond investments on the asset side.

Liquidity risks materially affect not only corporations and financial institutions in need of cash for their working capital but also all instruments needed to hedge financial risks (causing high volatilities, wide bid-ask spreads and low trading volume).

Net debt is a measure of a company's ability to repay all debt if it were called immediately. It is calculated by adding short-term and long-term debt and subtracting all cash and cash equivalents.

Other market risks affect, more specifically, institutions involved in investment activities.

The **pension expense account** reports the employer's expense for the company's pension plan during the period indicated in the heading on the income statement. It is calculated as follows: (1) + (2) – (3).

- (1) **Service cost.** This is the expense caused by the increase in pension benefits payable (the projected benefit obligation) to employees due to services rendered during the current year.
- (2) **Interest on the pension liability.** Because a pension is a deferred compensation arrangement, it is recorded on a discounted basis. Interest expense accrues each year on the projected benefit obligation, based on a selected discount rate.
- (3) **Expected (actual) return on plan assets.** Pension expense is adjusted for an increase in value that accumulates within the fund as well as increases and decreases in the market value of the fund assets.

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